Università degli Studi della Basilicata
Scuola di Ingegneria

COURSE: **Tecnique of Road Railway and Airport Works**			
ACADEMIC YEAR: **2019-2020**			
TYP8 OF EDUCATIONAL ACTIVITY: **(B) Characterizing**			
TEACHER: **Prof. Maurizio Diomedi**			
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phone: +39 0971 205182		mobile (optional):	
Language: Italian			
ECTS: **9**	n. of hours: **81**	Campus: **Potenza** Dept./School: **Engineering** Program: **Civil (LM23)**	Semester: **2th**

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course is the necessary completion of training in the field of road infrastructures. The aim of the course is to provide the students with the theoretical and technical bases for designing, constructing and managing parkings, road and railway tunnels, cycle paths, all complementary works and planning and management of road infrastructure maintenance.

The main knowledge provided will be:

- Standards for the design and realization of horizontal and vertical road signs;
- Road safety basics;
- Rules and techniques of traffic moderators design and pedestrian crossings;
- Elements of the flush design and multi-storey car parks and their insertion in the urban road network;
- Statement of the design and construction of bicycle paths;
- Works for the disposal of water from the road surface;
- Design and construction of a freight village;
- The road and rail tunnels: preliminary investigations, project phases, excavation and construction techniques;
- The planning of road maintenance;
- The underground and overground: construction techniques
- The conduct of public works.

The main skills trasferred will be:

- The ability to design any type of parking, road signs, bicycle paths, disposal works of the waters from the road;
- Knowledge of all design and construction techniques to ensure road safety;
- Knowledge of design techniques and construction phase of the excavation of road and rail tunnels;
- The planning of road maintenance.

Knowledge and understanding: The above knowledge and understanding skills are achieved through the training activities organized within the course, including the drafting of project design

Ability to apply knowledge and understanding: The ability to apply acquired knowledge is verified through oral exams, tutorials, and project design, where the student demonstrates the mastery of critical tools and methodologies and autonomy.

Autonomy of judgment: The didactic approach provides that theoretical training is accompanied by work, which however solicits active participation, propositional attitudes and self-elaboration skills.

Communicative skills: In order to develop written and oral communicative skills during the course, preparation of a technical relationship with the project activity is planned. Learning verifications also include oral talks during revisions of the draft design in which the ability to express, correct, clear, and concise form a primary judgmental element. The final exam offers the student a further opportunity to test the processing skills and communication of the work they are doing.

Learning abilities: Learning ability is verified throughout the course using methodologies based on

analysis and resolution of complex and as far as possible interdisciplinary problems.

PRE-REQUIREMENTS

It is appropriate to have acquired the knowledge provided by courses in "*Basics of roads, railways and airports*" and "*Materials for roads, railways and airports construction*" and in particular have assimilated:

- concepts and techniques of geometrical design of road;
- knowledge of methodologies and criteria aimed at rational designing of pavements;
- knowledge of materials, in use techniques and quality control systems;

SYLLABUS

Classification of urban roads: organization of the road section in urban areas respect to Italian Standards; the design and construction of vertical and horizontal signals; Road safety passive and active; accident analysis;
The weak users and moderators of traffic; Design and construction of pedestrian crossings; Design of both one level and multi-level car parking; type of parking, design elements and insertion of parking in urban road network; technological systems in parking; design and construction of cycle paths; design and dimensioning of structures for road infrastructures water disposal; realization of different bridge joints; design and construction of a freight village; road and rail tunnels: preliminary investigations, project phases, excavation and construction techniques, technological systems of lighting and ventilation; street lighting; planning of road maintenance; Airport and railway maintenance; The metros: the metropolitan transport system in high-density areas, the civil works for underground and overground, construction techniques; The conduct of public works.

TEACHING METHODS

The course provides of 81 hours of teaching, including 48 hours of theoretical classroom lesson and 33 hours of classroom exercises. As part of the exercise activities, students will develop the design of a multi-storey car park connected to the city road and the design of a bicycle lane trunk. These exercises will be developed in groups of two students.

EVALUATION METHODS

The objective of the exam is to verify the level of achievement of the training goals previously indicated. The positive assessment of project works product, developed during the course is a necessary condition for access to the oral exam. The examination involves passing an oral exam that evaluates the knowledge and understanding of the subjects studied and the skills acquired by the student. The final assessment will take into account the level achieved both in the exercises and in the oral exam.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Course notes in PDF format provided by the professor

INTERACTION WITH STUDENTS

At the beginning of the course the teacher describes the objectives, program and methods of verification methods and at the same time collects the list of students, who intend to enroll in the course, together with name, serial number and email.
During the course the teacher will provide the students teaching materials.
Prof. Diomedi receives students at his own studio (4th floor room 56) of the School of Engineering (Potenza, Campus Macchia Romana) on Wednesday at 10: 30 - 11:30.
In addition to the weekly reception time, the teacher is always available immediately after each lesson and for urgent questions through his institutional email.

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EXAMINATION SESSIONS (FORECAST)[1]
12/02/2020, 11/03/2020, 10/04/2020, 15/05/2020, 13/06/2020, 17/07/2020, 16/09/2020, 14/10/2020, 18/11/2020, 16/12/2020.

SEMINARS BY EXTERNAL EXPERTS YES □ NO □**X**

FURTHER INFORMATION

[1] Subject to possible changes: check the web site of the Teacher or the Department/School for updates.