



COURSE: River engineering and basin planning

ACADEMIC YEAR: 2016/2017

TYPE OF EDUCATIONAL ACTIVITY: Basic

TEACHERS:

Annamaria De Vincenzo

Vincenzo Masi

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mobile (optional):

Language: italian

ECTS: 9/12	n. of hours: n. ore: 81 n. ore lezione:48 n. ore esercitazione:33	Campus: Potenza School of Engineering: Program: 234	Semester: Annual
3/12	n. ore: 27 n. ore lezione:16 n. ore esercitazione:11		

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

Basic knowledge: elements of hydrology, hydraulics and geology.

The main goal of the course is to provide students with knowledge in the field of river modeling laws and morphological changes induced by human interventions on the fluvial network.

- **Skills:** use the laws of river hydraulics and modeling of water courses for designing river training works.
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PRE-REQUIREMENTS

The following knowledge provided by the courses of hydrology, hydraulics and geology are requested:

- basic concepts of fluid mechanics, statistical and river basin geomorphology.
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SYLLABUS

The roughness in natural fixed beds

The sediment transport

Incipient motion condition

The resistance to flow in mobile bed

Bed sediment transport

Classification of fluvial reaches evolution

Energy analysis of evolution processes in a river, degradation or aggradation of a river toward the morphological equilibrium condition

Modeling laws of gravel beds (law of Meyer-Peter and Müller)

Modeling laws of meandering rivers (laws of Lacey and Hermanek)

Designing criteria of longitudinal and transversal river training works

TEACHING METHODS

Theoretical lessons, Classroom tutorials, Laboratory tutorials, Project works, Technical visits, Seminars by external experts.

EVALUATION METHODS

Discussion of a project work, Oral examination.

Course notes.

Textbooks:

- Principi di idraulica fluviale, autore A. Armanini, Ed. Bios
 - La sistemazione dei corsi d'acqua montani, U. Maione, Bios
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- Fluvial processes, S. Yalin, A.M. Ferreira da Silva, Ed. IAHR Monograph
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INTERACTION WITH STUDENTS

At the beginning of the lessons, after describing objectives and evaluation methods, students will be provided with educational materials in printed form. Simultaneously, a list of students attending the course lessons, together with name, telephone number and email, will be compiled.

Office hours : Wednesday from 8:30 alle 10.30 at room n. 77 , 5th floor, School of Engineering

In addition to weekly reception, teachers are always available by e -mail for contact with the students.

EXAMINATION SESSIONS (FORECAST)¹

21/06/2016, 27/07/2016, 22/09/2016, 26/10/2016, 14/12/2016

SEMINARS BY EXTERNAL EXPERTS YES

FURTHER INFORMATION

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