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COURSE: Foundations and Retaining Structures

TEACHER: Vincenzo Caputo

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LANGUAGE	Italian
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ECTS: 12
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ACADEMIC YEAR: 2014/2015
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Campus: Potenza
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Semesters: I and II
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#### TOPICS

This course covers the design of foundations and retaining structures, and also entails the planning of geotechnical investigations required for appropriate modelling of the subsoil interacting with both types of structures.

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#### TEACHING METHODS

Lectures and tutorials on the design of Foundations and Retaining Structures

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#### TEXTBOOKS

C. Viggiani – Fondazioni – Hevelius Edizioni

C.R.I. Clayton, J. Milititski, R.J. Woods – La spinta delle terre e le opere di sostegno – Hevelius Edizioni

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#### LEARNING OUTCOMES

Learning the fundamentals of the design of foundations and retaining structures, including the planning of geotechnical investigations required for appropriate modelling of the subsoil interacting with both types of structures.

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#### REQUIREMENTS

Fundamentals of geotechnical and structural engineering.

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#### EVALUATION METHODS

Oral exam. The tutorials carried out during the course will also be discussed.

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#### DETAILED CONTENT

(1) shallow Foundations: evaluation of bearing capacity – settlement calculations – evaluation of differential settlements and movements, allowable limit values – soil- structure interaction.

(2 ) Deep Foundations: Techniques of pile construction - single pile: axial bearing capacity and settlement – horizontal bearing capacity –static and dynamic pile testing – Pile groups: efficiency, in terms of both bearing capacity and settlement – design of mixed (piled) foundations

(3) Earth pressures on retaining structures: general framework – methods assuming planar and/or curvilinear failure surfaces – pseudostatic approach for the calculations of pressures under seismic loading.

(4) Retaining walls: types, preliminary sizing, determination of actions, analysis procedures.

(5) Sheet pile walls: types, preliminary sizing, determination of actions, analysis procedures

Tutorials: Examples of design of foundations and retaining structures

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#### FURTHER INFORMATION

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