



COURSE: Slope stability

TEACHER: Caterina Di Maio

e-mail: caterina.dimaio@unibas.it

website: <http://www2.unibas.it/dimaio/home.html>

Language: Italian

ECTS: 9

n. of hours: 81

Academic year: 2014/15

Campus: Potenza

Semester: II

TOPICS

Stability analysis of natural slopes and of embankments in any type of soil or rock

Slope stabilization and mitigation methods. Assessment and management of the hydrogeological risk.

TEACHING METHODS (please tick one or more options)

X Theoretical lessons

X Tutorials in classroom

X Tutorials in laboratory

X Project works

X Technical visits

Other activities (please specify) _____

TEXTBOOKS

Selected journal papers, guidelines, course handouts provided by the professor

ON-LINE EDUCATIONAL MATERIAL

web address:

LEARNING OUTCOMES

Knowledge of the methods for landslide monitoring, ability of data interpretation, knowledge of advanced software, design ability.

REQUIREMENTS

A good knowledge of Soil Mechanics is required

EVALUATION METHODS (please tick one or more options)

Intermediate verifications

X Written examination

X Discussion of a project work

Practical test

X Oral examination

Other methods (please specify)

DETAILED CONTENT

Fundamentals of Soil and Rock Mechanics

Landslides: Classification and kinematics of landslide phenomena, Landslide hazard and risk, Landslide monitoring (topographical surveys, pluviometric, piezometric, and inclinometer measurements)

Stability analysis methods (Limit equilibrium – Failure along planar surfaces: planar failure, wedge failure, infinite slope – Failure along curved surfaces: Methods of slices (Fellenius, Bishop, Janbu)

Slope stability analysis according to the new Italian Technical Code (D.M. 14.01.2008) .

Stress – strain analysis by finite element software.

Stabilization techniques. Countermeasures for erosion mitigation and superficial drainage – Modification of ground surface topography – Deep drainage – Retaining structures – Soil improvement, strengthening and substitution – Soil nailing and anchors.

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION