Università di Roma Tor Vergata
Dipartimento di Ingegneria Civile
e Ingegneria Informatica

Three day PhD Course / 31st January-2nd February 2018
Prof. Federica Cotecchia –
Technical University of Bari

Politecnico di Bari

31 January 2018
10:00-13:00
"Landslide damages at the urban scale" - 3hours
The lecture will concern the damaging effects of slow landsliding on structures and infrastructures within urban centres, hence the landslide risk applying to the urban centres built either on slow-moving landslide bodies, or having peripheral suburbs in interaction with the historical slow-moving landslides. This is the case for several urban centres within the Italian Apennines, whose safety and serviceability is jeopardized by slow landsliding, most often due to phenomena in clayey geological formations. The lecture will first go through basic knowledge about landslide mechanisms (in the framework of continuum mechanics) and will then forward this knowledge in the perspective of the urban centre and of the interaction of the landslide mechanism with the building mechanics. Various case histories will be presented, to provide field evidence of the phenomena. Hence the modeling of the landslide-structure interaction will be presented at the urban scale ('intermediate scale'). A new approach to the assessment of landslide damage for buindings, first step of landslide vulnerability studies, will conclude the lecture.

31 January –
14:00-17:00
"The Mechanics of Clays"
Lecture 1) – 3 hours
'The microstructure and compression macro-behaviour of clays, from sedimentary to post-sedimentary'

1st February –
10:00-13:00
"The Mechanics of Clays"
Lecture 2) part1– 3 hours
'The general framework of the macro-behaviour of clays (the sensitivity framework)'
14:00-16:00
Lecture 2) part2– 2 hours
'The general framework of the macro-behaviour of clays (the sensitivity framework
16:30-17:30
Lecture 3) – 1 hour
'The effects of weathering on clay mechanics'
2nd February
10:00-13:00
Lecture 4) – 3 hours
'The effects of fissuring on clay mechanics'

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