



UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

ENGINEERING GEOLOGY AND HYDROMORPHOLOGY

Anno immatricolazione	2019/2020
Anno offerta	2019/2020
Normativa	DM270
Dipartimento	DIPARTIMENTO DI INGEGNERIA CIVILE E ARCHITETTURA
Corso di studio	CIVIL ENGINEERING FOR MITIGATION OF RISK FROM NATURAL HAZARDS
Curriculum	Hydrogeological risk assessment and mitigation
Anno di corso	1°
Periodo didattico	Annualità Singola (23/09/2019 - 24/03/2020)
Crediti	12
Lingua insegnamento	English
Obiettivi formativi	<p>Scope of the course is to introduce the student to fundamental surface and subsurfaces data in order to develop and understanding engineering geological models for application to engineering works and to geohazards.</p> <p>Knowledge of fluvial system morphology and their changes, understanding the natural pathways and rates of movement of water and sediment and the role of active and fossil landforms. Moreover, fluvial forms and processes are recognized as a key component of river system in the EU WFD for mitigating flood risk and geomorphic hazard and for a sustainable river management and restoration.</p>
Programma e contenuti	<p>Definition and importance of engineering geology. Geological factors and their relation with engineering problems. The most important fields of application of engineering geology to foundations, slopes, tunnels, dams and earth structures. Basic aspects of engineering geology including map construction and interpretation (e.g. engineering geological mapping units). Significance of ground profiles to engineering design, their origin in various geological settings. Engineering geological model types and terminology: conceptual and observational approaches. General rules for the construction of useful models. Use of surface and subsoil data in creating model of the ground, development of engineering geological models involved in civil engineering projects and in geohazards. Some examples of engineering geological models for</p>

geohazards assessment in different geological and geomorphological environments.
Fluvial system and their component; Geomorphic classification of rivers and streams; Factors controlling channel morphology; Fluvial processes; Channel types; Channel morphology variability and channel adjustment; Material and method to study fluvial geomorphology

Metodi didattici

The course consists of lectures to illustrate the theory and tutorial sessions where the emphasis is on applications and problem solving. Each subject is illustrated with the support of experimental and observational evidences and well-documented case histories concerning earthquake and landslide hazard drawn from the experience of the instructor.

Testi di riferimento

? Luis Gonzalez de Vallejo, Mercedes Ferrer (2011). Geological Engineering. CRC Press, ISBN 9781439892213. Reference textbook.
? Course notes, scientific articles and other material will be provided during the course.

L'insegnamento è suddiviso

508194 - **ENGINEERING GEOLOGY**

508198 - **HYDROMORPHOLOGY**



UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

ENGINEERING GEOLOGY	
Anno immatricolazione	2019/2020
Anno offerta	2019/2020
Normativa	DM270
SSD	GEO/05 (GEOLOGIA APPLICATA)
Dipartimento	DIPARTIMENTO DI INGEGNERIA CIVILE E ARCHITETTURA
Corso di studio	CIVIL ENGINEERING FOR MITIGATION OF RISK FROM NATURAL HAZARDS
Curriculum	Hydrogeological risk assessment and mitigation
Anno di corso	1°
Periodo didattico	Primo Semestre (23/09/2019 - 16/10/2019)
Crediti	6
Ore	51 ore di attività frontale
Lingua insegnamento	English
Tipo esame	SCRITTO
Docente	MEISINA CLAUDIA (titolare) - 6 CFU
Prerequisiti	Basic knowledge of geology.
Obiettivi formativi	Scope of the course is to introduce the student to fundamental geological surface and subsurfaces data in order to develop and understanding engineering geological models for application to engineering works and to geohazards.
Programma e contenuti	Definition and importance of engineering geology. Geological factors and their relation with engineering problems. The most important fields of application of engineering geology to foundations, slopes, tunnels, dams and earth structures. Basic aspects of engineering geology including map construction and interpretation (e.g. engineering geological mapping units). Significance of ground profiles to engineering design, their origin in various geological settings. Engineering geological model types and terminology: conceptual and observational approaches.

	<p>General rules for the construction of useful models. Use of surface and subsoil data in creating model of the ground, development of engineering geological models involved in civil engineering projects and in geohazards. Some examples of engineering geological models for geohazards assessment in different geological and geomorphological environments.</p>
Metodi didattici	<p>The course consists of lectures to illustrate the theory and tutorial sessions where the emphasis is on applications and problem solving. Each subject is illustrated with the support of experimental and observational evidences and well-documented case histories concerning earthquake and landslide hazard drawn from the experience of the instructor.</p>
Testi di riferimento	<p>? Luis Gonzalez de Vallejo, Mercedes Ferrer (2011). Geological Engineering. CRC Press, ISBN 9781439892213. Reference textbook. ? Course notes, scientific articles and other material will be provided during the course.</p>
Modalità verifica apprendimento	<p>Assignments will be handed over and graded during the course. The final examination will consist of a 3 hours, written test. The final-exam format is closed-book. Grading: 40% assignments, 60% final exam.</p>
Altre informazioni	
Obiettivi Agenda 2030 per lo sviluppo sostenibile	<p>\$lbl legenda sviluppo sostenibile</p>



UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

HYDROMORPHOLOGY	
Anno immatricolazione	2019/2020
Anno offerta	2019/2020
Normativa	DM270
SSD	GEO/04 (GEOGRAFIA FISICA E GEOMORFOLOGIA)
Dipartimento	DIPARTIMENTO DI INGEGNERIA CIVILE E ARCHITETTURA
Corso di studio	CIVIL ENGINEERING FOR MITIGATION OF RISK FROM NATURAL HAZARDS
Curriculum	Hydrogeological risk assessment and mitigation
Anno di corso	1°
Periodo didattico	Secondo Semestre (02/03/2020 - 24/03/2020)
Crediti	6
Ore	51 ore di attività frontale
Lingua insegnamento	
Tipo esame	SCRITTO E ORALE CONGIUNTI
Docente	RIGHINI MARGHERITA - 4 CFU SURIAN NICOLA - 2 CFU
Prerequisiti	
Obiettivi formativi	
Programma e contenuti	
Metodi didattici	
Testi di riferimento	
Modalità verifica apprendimento	
Altre informazioni	

Obiettivi Agenda 2030 per lo
sviluppo sostenibile

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