Dipartimento di Ingegneria e Geologia

University "G. d'Annunzio" of Chieti-Pescara
Department of Engineering and Geology
V.le Pindaro, 42 - 65127 Pescara (Italy)
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PhD Course in ENGINEERING, EARTH AND PLANETARY SCIENCES

Course announcement

Seismic Microzonation:

Principles and Practice for Mw 7.3 Iran Earthquake 2017

Dr. Iman Ashayeri

Civil Eng. Dept., Razi University, Kermanshah, Iran

Course duration: 24 hours

From June, 27 to June, 30 - at 10-13 am

Aula M6 Polo Micara, viale Pindaro 42, **Pescara**

& Microsoft Teams:

https://teams.microsoft.com/l/meetup-join/19%3a4e11d87697aa4a0685326ec55e49c711%40thread.tacv2/1654677146741?context=%7b%22Tid%22%3a%2241f8b7d0-9a21-415c-9c69-a67984f3d0de%22%2c%22Oid%22%3a%22b195b4cf-d875-46df-8486-cf44939f6ab5%22%7d

From July, 4 to July,7 - at 3-6 pm

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& Microsoft Teams:

https://teams.microsoft.com/l/meetup-join/19%3a4e11d87697aa4a0685326ec55e49c711%40thread.tacv2/1654677456331?context=%7b%22Tid%22%3a%2241f8b7d0-9a21-415c-9c69-a67984f3d0de%22%2c%22Oid%22%3a%22b195b4cf-d875-46df-8486-cf44939f6ab5%22%7d

Abstract:

With the increased understanding of Geotechnical issues of the earthquake events worldwide, seismic microzonation is known as the key investigation to clearly evaluate the seismic vulnerability and reduce the associated risk to urban area. The idea is to present an integrated and comprehensive course for the seismic microzonation from its fundamentals and principles in soil dynamics to its current practice for PhD students or young researchers in Geotechnical engineering and Earthquake engineering specializations. The course also covers the practice of seismic microzonation for the most recent destructive earthquake Mw 7.3 at west of Iran 12 November 2017. Throughout, the Ph.D. student or young researchers can find a direct path from the theoretical soil dynamics to empirical investigation for dynamic and seismic characterization of the subsurface layers, and elements of seismic microzonation as well as a detailed case study of a recent earthquake in the seismically active subduction zone of Eurasia plate and Arabian plate along Iran-Iraq border, which generated the earthquake of Mw 7.3 of 12 November 2017, Iran.

Topics:

- Principles of Soil Dynamics & Wave Propagation
  - The theory of elastic wave propagation in continuum mechanics
    - Body waves in solids
    - Surface waves at interfaces of a layered solid
    - Extension to saturated and unsaturated porous media
  - Principles of soil dynamics for earthquake Geotechnics
    - Measurement of shear modulus in Lab and field
    - Shear modulus in soils, linear elastic & non-linear behavior
    - Shear modulus degradation and damping ratio curves
- Earthquake Geotechnics and Emergence of Seismic Microzonation
  - Earthquake Geotechnics
    - Geo-hazards related to earthquakes (soil liquefaction, ground motion amplification, slope instability)
    - Principles of ground motion amplification
    - Site response analyses (1D, 2D), and equivalent-linear vs. non-linear
  - Seismic Microzonation
    - Aims & goals
    - Levels for Seismic Microzonation
- Seismic Microzonation Practice for Mw 7.3 Iran Earthquake 2017
  - The Mw 7.3 Iran Earthquake 2017
  - Site Effects and Post-earthquake Investigations
  - Urban scale Seismic Microzonation

Dr. Iman Ashayeri
Dr. Iman Ashayeri is a faculty member (Asst. Prof., since 2010), of Civil Eng. Dept. of Razi Univ., Kermanshah, Iran. His specialization is Earthquake Geotechnics and he presents courses for B.Sc., M.Sc., and Ph.D. students of Civil Eng., Geotechnical Eng., and Earthquake Eng. at Razi University. During past four years, he focused on investigating site effects of the most recent and destructive earthquake of Iran (Mw 7.3, November 12, 2017) and seismic microzonation of the damaged area of Sarpol-e-zahab city in Kermanshah province, Iran.