

**Università degli Studi di Perugia**  
**Dipartimento di Ingegneria Civile ed Ambientale**

Giovedì 3 Settembre 2015  
Ore 10:30  
Polo di Ingegneria, Aula Magna

Short course on  
**Computational Thermo-Poromechanics**

**WaiChing Sun**

Department of Civil Engineering and Engineering Mechanics  
Columbia University in the City of New York

<b>10:30 – 12:30</b>	FEM Models and Computational Poromechanics
<b>14:30 – 16:30</b>	Basis of Thermal Plasticity
<b>16:30 – 18:30</b>	Questions and Discussion

**Speaker's Bio**

Professor Sun obtained his B.S. from UC Davis; M.S. in civil engineering (geomechanics) from Stanford; M.A. degree from Princeton; and Ph.D. in theoretical and applied mechanics from Northwestern. Prior to joining Columbia, he was a senior member of technical staff in the mechanics of materials department at Sandia National Laboratories (Livermore, CA).

Professor Sun works in the fields of theoretical and computational solid mechanics, poromechanics and multiscale modeling of fully coupled multi-physical systems, with a special emphasis on geomechanical applications. The objective of his research is to advance the understanding on multiphase materials under extreme conditions and enhance predictive capabilities for related engineering applications, including but not limited to geological carbon sequestration, hydraulic fracture and soil liquefaction. His research includes the development of solution techniques for coupled deformation-diffusion in non-isothermal saturated and unsaturated porous media, formulations of stabilized mixed-field finite element model for large deformation multiphysics problems, modeling and homogenization of mechanical and hydraulic properties of porous media from CT images, digital rock and granular physics, applications of mathematical tools, such as graph theory, Lie algebra, and combined deterministic-stochastic method, for modern engineering problems.

