

# CIVIL AND ENVIRONMENTAL ENGINEERING

## DOCTORAL PROGRAM 2024-2025



Federico Cluni is Associate Professor in Structural Mechanics at the Department of Civil and Environmental Engineering of University of Perugia.

Since 2011-12 he teaches "Dynamics of structures" course for the Master's Degree in Civil Engineering.

He has been member of programs funded by

the Italian Ministry of University and Scientific Research on wind engineering, vibrations in civil engineering structures, advanced mechanical modeling of new materials and structures and modelling of constitutive laws for traditional and innovative building materials.

His reserach is devoted to the analysis and reliability of historical buildings, numerical analysis of masonry walls through the homogenization method, dynamics of cables (experimental test in wind tunnel, numerical models, fatigue analysis), development of equivalent beam models for tall buildings under environmental loads (wind and earthquakes), development of techniques for the identification of masonry texture through photographic adn thermographic images, developing of nonlocal models for the design of innovative composite materials.

## Location

Room 13, Campus of Engineering of University of Perugia Via G. Duranti, 93 - Perugia

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## PYTHON FOR NUMERICAL COMPUTING AND DEVELOPMENT OF SCIENTIFIC APPLICATION

### Instructor

Federico Cluni Ph.D., Associate Professor, University of Perugia

## **Course description**

The course aims to provide skills for the use of the Python programming language in the scientific field. In the first part, the students will learn the basics of the language (data types and structures, syntax, control flow tools, input and output, classes); in the second part, the students will learn how to use tools dedicated to the management and processing of scientific data. Particular attention will be paid to possible applications in civil and environmental engineering research and to the acquisition of the skills necessary to share the results of research by means of stand-alone applications or web apps.

## Course Schedule (30 hours, 5 CFU)

Friday 28/02/2025	14:30 - 17:30
Friday 07/03/2025	14:30 - 17:30
Friday 14/03/2025	14:30 - 17:30
Friday 21/03/2025	14:30 - 17:30
Friday 28/03/2025	14:30 - 17:30
Friday 04/04/2025	14:30 - 17:30
Friday 11/04/2025	14:30 - 17:30
Tuesday 15/04/2025	14:30 - 17:30
Tuesday 22/04/2025	14:30 - 17:30
Thursday 24/04/2025	14:30 - 17:30





