

# Elements of non-linear elasticity

## Professor

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## Institution

University of Pisa

## General Information

The course will provide basic elements of nonlinear theory of elasticity. The theoretical part is accompanied by selected examples in which explicit calculations are possible.

The course will be held in presence in Aula Piero Villaggio, former Department of Structural Engineering, University of Pisa. The course will be delivered in Italian, unless non Italian speakers aim to attend the course.

## Materials

Notes and references will be provided during the course.

## Schedule

Dates	Description
23/04/2024 15:00-18:00	Introduction to the general theory of elasticity
24/04/2024 15:00-18:00	Variational formulation for hyperelasticity and Material Indifference Principle. Hints on the existence of solutions.
03/05/2024 15:00-18:00	Isotropic nonlinear elasticity. Rivlin-Ericksen representation Theorem. Homogeneous deformations in homogeneous bodies.
07/05/2024 15:00-18:00	Materials with internal constraints. Traction of an incompressible bar. Ericksen bar.
08/05/2024 15:00-18:00	Inflation of a hollow sphere. Rivlin's cube.

<b>Dates</b>	<b>Description</b>
14/05/2024 15:00-18:00	TBD
15/05/2024 15:00-18:00	Eventual make up for lost hours
<b>Total 18 Hours - 3 Credits</b>	

## **Other information**

For any information [www.indicee.unifi.it](http://www.indicee.unifi.it) - dott-dicea@unifi.it