



### RATIONAL MECHANICS

<b>Enrollment year</b>	2020/2021
<b>Academic year</b>	2021/2022
<b>Regulations</b>	DM270
<b>Academic discipline</b>	MAT/07 (MATHEMATICAL PHYSICS)
<b>Department</b>	DEPARTMENT OF CIVIL ENGINEERING AND ARCHITECTURE
<b>Course</b>	BUILDING ENGINEERING AND ARCHITECTURE
<b>Curriculum</b>	PERCORSO COMUNE
<b>Year of study</b>	2°
<b>Period</b>	2nd semester (07/03/2022 - 17/06/2022)
<b>ECTS</b>	6
<b>Lesson hours</b>	60 lesson hours
<b>Language</b>	Italian
<b>Activity type</b>	WRITTEN AND ORAL TEST
<b>Teacher</b>	PEDRINI ANDREA (titolare) - 5 ECTS ROSSO RICCARDO - 1 ECTS
<b>Prerequisites</b>	Linear algebra, calculus, ordinary differential equations.
<b>Learning outcomes</b>	<p>The objective of the course is to provide a basis for the analytical modeling of problems in mechanics, including elementary problems in continuum mechanics.</p> <p>The expected result is to earn the capability to apply analytical methods to basic aspects of statics of structures.</p>
<b>Course contents</b>	<p>The course aims at illustrating the role of mathematical modelling in structural mechanics; special emphasis is given to statics and equilibrium stability. Topics: Tensorial algebra; Differentiable curves in space; Systems of applied vectors; Inertia; Kinematics; Lagrangian dynamics; Equilibrium of mass-point systems; Equilibrium stability; Statics of one-dimensional continua.</p>

## Teaching methods

Lectures, Exercise Classes, and Tutoring.

**Reccomended or required readings**

P. Biscari, C. Poggi, E.G. Virga. Mechanics Notebook. Liguori. Napoli, 2<sup>a</sup> edizione, 2005.

F. Bisi, R. Rosso. Introduzione alla Meccanica Teorica.  
La Dotta, Bologna, (2014)

P. Biscari. Introduzione alla Meccanica Razionale, Springer, Milano, 2015.

G. Grioli. Lezioni di Meccanica Razionale . Cortina. Padova, 1985.



Written test and (optional) oral test.

**Further information**



Written test and (optional) oral test.



