



UNIVERSITY OF TRIESTE

DEPARTMENT OF ENGINEERING AND ARCHITECTURE

**Prof. Daniele Zaccaria**

Course of  
**Scienza delle Costruzioni**

(Mechanics of Solids and Structures)

**Civil and Environmental Engineering**

**Industrial Engineering**

**Naval Engineering**

**9 credits for about 90 hours (Sep 2017 - Dec 2017)**

**SOLID MECHANICS**

- **Structural Models**
- **Foundations of Solid Mechanics**
- **Mechanical Behavior of Materials**
- **Analysis of Stress**
- **Analysis of Strain**
- **Principle of Virtual Work**
- **Linear Elastic Isotropic Solids**

**ROD MECHANICS**

- **Foundations of Rod Mechanics**
- **Rods Loads and Deformations**
- **Principle of Virtual Work**
- **Linear Elastic Rods**
- **Bernoulli-Euler Model**
- **Plane Mass Geometry**
- **Normal Tension Distribution (Bending and Tension)**
- **Saint-Venant's Model**
- **Torsion Problem**
- **Center of Shear**
- **Shear Stress Distribution (Shear and Torsion)**

**RODS SYSTEMS**

- **Static and Kinematic Analysis**
- **Static of Statically Determinate Structures**
- **Displacements and Rotations in Statically Determinate Structures**
- **Dislocations**
- **Statically Indeterminate Structures**
- **Symmetric Structures**
- **Frames and Trusses**