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 2019 – Dec 2019)

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