

Laurea Magistrale in Architettura Costruzione Città'
Master's degree programme in Architecture Construction City



Politecnico
di Torino

Corso/Course
Progetto di Strutture
Structural Design

L. Bruno, E. Matta, F. Tondolo
September 18th 2023

Corso **Progetto di Strutture**

Docenti:

L. Bruno, F. Tondolo



- I periodo didattico
- 4.5 ore settimanali
- Giovedì e Venerdì mattina
- Aule 306 e 202, sede Lingotto

Course **Structural Design**

Teachers:

E. Matta, F. Tondolo



- 1st semester
- 4.5 hours per week
- Thursday afternoon and Friday morning
- Rooms 306 and 202, Lingotto

Programma e metodo didattico uniformi tra I due Corsi per garantire coerenza formativa di anno

Topics and teaching methods are shared by the Courses to secure the coherence of the educational training

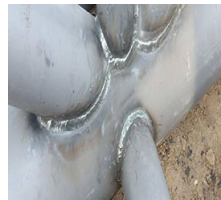
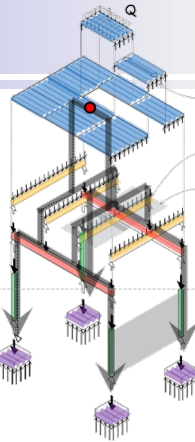


The Course aims at allowing the MSc students in Architecture to carry out:

- the structural reading of an architecture:
 - identification of the structural type(s)
 - identification of the structural hierarchy among elements
- the structural analysis of an architecture:
 - modelling of the structural system and elements, including load analysis
 - calculation of reaction and internal forces
- the detailed design of a steel structure:
 - sizing of each structural element and its verification
 - design and sizing of structural joints between elements

What: theory

- reminders about the tools acquired within previous Courses:
 - equilibrium of structures in 2D plane
 - hierarchy of elements in the structural body
 - elastic behaviour of structures
- equilibrium of structures in 3D space
- structural safety and load conditions
- plastic behaviour of structures
- buckling analysis of steel structures
- structural joints in steel structures
 - welded connections
 - bolted connections



What: design exercise



Quantitative mechanical analysis & sizing of:

- the structural body and its hierarchy
 - the single structural member
 - the joints and their connections

S. Calatrava: Stadelhofen Station, Zurich, 1990