1st *International Course on*

Computational Modelling and Generative Design

MODULE 1
SHAPE

MODULE 2
SIMULATION

MODULE 3
OPTIMIZATION

Starting Date

28 June | 2023

together with

IWSS

Italian Workshop on
Shell and Spatial Structures

4S

and

PhD Course on
Design and optimization of shells and spatial structures
AY 2022-2023

The event will be held at

**Politecnico
di Torino**
1859

from June 28 to July 1, 2023

Official website at:

Aim of the Course

Participants will gain hands-on experience with technologies and techniques involved with the Generative Design approach, including computational design, scripting, simulation, optimization, and data visualization. For modelling and simulation, we will rely on **Grasshopper,** a visual programming interface for the 3d modelling software Rhinoceros. Several 3rd party plug-ins developed for Grasshopper will be presented during the course to carry on FE Analysis and Optimization strategies.

Course Organization

The full-immersion course is scheduled starting from June 28 to July 1, 2023.
The lectures are planned and subdivided into three different modules:

- Introduction to Generative Design
    Parametric Modelling in Grasshopper and Direct Modelling
    Design exploration with Grasshopper

- Simulations
    Structural Analysis and FEA within .gh environment
    Introduction to Alpaca 4D

- Optimization Techniques
    Preamble on Genetic Algorithms and guidance strategies
    Design connecting shape, objective and constraints: Form Finding Methods

Speakers

Prof. Amedeo Manuello
Prof. Giuseppe C. Marano
Prof. Francesco Marmo
Prof. Andrea Micheletti
Prof. Stefano Gabriele
Eng. Jonathan Melchiorre, PhD
Eng. Marco Pellegrino
Eng. Marco M. Rosso, PhD
Arch. Laura Sardone, PhD
Eng. Mauro Sogni
Prof. Valentina Sumini

Dates and Venues

June 28, 2023, to July 1, 2023.
Politecnico di Torino - Corso Duca degli Abruzzi, 24, 10129 Torino
Info&Contacts: iwss@polito.it

All the additional information can be
found at the following link:

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