

MASTER ID3266 - EDITION I

DIRECTOR

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Politecnico di Milano

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LOCATION

DEPARTMENT OF ARCHITECTURE,
BUILT ENVIRONMENT, AND
CONSTRUCTION ENGINEERING
CAMPUS LEONARDO - BUILDING 14
VIA GIUSEPPE PONZIO 31
20133, MILANO

MASTER MANAGEMENT

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EXPRESSION OF INTEREST



OFFICIAL WEBPAGE FOR ENROLLMENT



SCIENTIFIC PATRONAGE



TensiNet European
Association



SITdA Italian Society
of Architectural
Technology



ISTeA Italian Society
of science, Technology
and Engineering of
Architecture



Ar.Tec. Scientific
Society of Technical
Architecture

TECHNICAL PARTNERS

Do you want to become a technical partner: write us at the
following email: master-tensart-dabc@cise-polimi.it



technet GmbH -
Software & Expertise



FormFinder Software



DABCLab System of Research Labs
TextilesHUB Interdepartmental Lab
MUSA Living Lab "too cool to go wasted"

2nd Level Specialising Master

TENS.ART

Textile Architecture and Tensile Structure Design

Art, Technologies
and Materials for
Lightweight Structural
Systems



POLITECNICO
MILANO 1863

DEPARTMENT OF ARCHITECTURE
BUILT ENVIRONMENT AND
CONSTRUCTION ENGINEERING

2nd Level Specialising Master in Textile Architecture and Tensile Structure Design

INTRODUCTION

The ecological transition demands new ways of designing with less material, lower environmental impact and greater adaptability. Textile architecture and tensile structures embody this vision, combining lightness, efficiency and innovation to create sustainable building systems.

The Master promotes an interdisciplinary approach that integrates architecture, engineering, design and material science. Collaboration with leading companies and manufacturers ensures a strong connection between academic research, technological innovation and professional practice.

LEARNING OBJECTIVES

The Master trains professionals capable of designing and developing lightweight and tensile structures from concept to construction. The programme combines theoretical knowledge, design studios, advanced digital tools, structural analysis and environmental assessment, together with seminars led by international experts and internships in specialised firms and industries. Students gain expertise in membrane technologies, fabrication processes, innovative materials and Life Cycle Assessment (LCA), supported by site visits and direct engagement with the sector.

CAREER OPPORTUNITIES

Graduates will be prepared for careers in architecture and engineering firms, specialised manufacturers, construction companies and research centres working with membrane systems and lightweight structures.

Opportunities include design, project management, BIM, technical consulting and material innovation, as well as applications in temporary architecture, sports facilities, urban regeneration, mobility and exhibition design.

LEARNING JOURNEY



online
kickoff



intensive
working
weeks



online
monthly
lessons



proof of concept
technical visits
specialists' reviews



master
ceremony

DIDACTIC CONTENTS



01 MEMBRANE BASIC KNOWLEDGE

Legacy of membranes, materials and techniques
Form finding and architectural shapes of tensile structures
Structural logic and basic systems of membranes
Design to construction overview, Life cycle thinking approach
Shaping & calculating: physical vs computational approaches
Fundamentals of mathematic, Physics and mechanics for membranes



02 DESIGNING

Architectural design, Structural design, Static Analysis
Data driven design for unconventional materials and structures
Building physics: Thermal, optical, acoustic performances
Detail design, Construction and installation
Temporary buildings vs permanent buildings
Sustainability, comfort and LCA



03 MANUFACTURING

Technical visits and site visits: on coated membrane, ETFE cushion, temporary lightweight structure
Cutting-pattern generation
Details and connections design, Packaging and delivering issues
Maintenance, monitoring, repairing



04 PRACTICE

EU standards, Eurocodes, building codes
Advanced computational design, part 1: Hybrid systems, cable nets
Advanced computational design, part 2: Pneumatics
BIM: approaches & tools
Specifications and tendering
Management of the work flow: from design to construction
End-of-life: dismantle, reuse, recycle, upcycle



05 INNOVATION

Material and chemistry advancements
Industrial symbiosis between Fashion and Architecture
Knitting technology, climatic sheltering
Nature-based solutions and bio-based materials
Natural fibers and temporary structures



OUTPUT

FIND your TOPIC
PLAN your PROOF OF CONCEPT
MASTER your MIND

KEY INFORMATION AND DATES



Application period
6 July - 09 October 2026



Enrollment completion period
10 September - 9 November 2026



10 November 2026
online Kickoff Meeting



FOUR INTENSIVE SESSIONS:

01

27 Jan - 3 Feb 2027
8 days of working session,
Politecnico di Milano, Milan

02

19 Apr - 26 Apr 2027
(MILAN DESIGN WEEK) in Milan

03

3 Oct - 17 Oct 2027
week 40 at Politecnico di Milano, Milan (ARCH WEEK)
week 41 at University of Vienna

04

week 15 and 16 of 2027
proof of concept development and exhibition
(MILAN DESIGN WEEK) in Milan



CONTINUOUS TEACHING

Online lesson, per month, on **Wednesday**,
from 4 pm to 6 pm



TECHNICAL VISITS

manufacturing and work site visits
in Italy, Austria and Germany
reviewing your proof of concept with specialists



End of the Master Ceremony
5 May 2028, Politecnico di Milano, Milan