

# Lightweight Membrane Structures

## Target group

> Target Group are Individuals working in the field of Lightweight Membrane Structures and related fields ranging from Design and Architecture, Engineering, Business Administration, Manufacturing, Installation, Textile Industry and also Related Sciences.

## Admission requirements

- > University degree in architecture or building related engineering sciences (Bachelor, Master)
- > Relevant non-university degree together with a minimum of 4 years of building related professional experience in a leading role
- > Minimum of 8 years in building related professional experience in a leading position



## Language

English

## Venue

Danube University Krems, Krems (A)

## Certificate

Master of Engineering (MEng)

## Duration

2 Year Part-time, 4 Modules plus one Master's Thesis Module, each approx. 10 days

## ECTS-Points

90 ECTS

## Course fee

EUR 16.900,-

[www.donau-uni.ac.at/dbu/membrane](http://www.donau-uni.ac.at/dbu/membrane)



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Danube University Krems. The University for Continuing Education.

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## Program Director

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MEng

# Lightweight Membrane Structures

Postgraduate Master's Program  
Master of Engineering (MEng)  
4 Semester, Part-time

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## Recognize the Future

A historic building or epic landscape, natural feature or contemporary man-made structure are all capable of inspiring a "moment of recognition". For most observers, this moment is temporary and transient, creating perhaps a sense of wonder and curiosity.

For others, including building and design professionals, such moments offer unique opportunities. Increasingly, the challenge is to rapidly develop these inspirational moments into creative designs and architectural realities which are economically viable, environmentally sustainable, as well as aesthetically attractive.

## Curriculum

### 1 Guiding Principles

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History and Early Applications of Membrane Structures; Fundamental Concepts of Material and Shape

### 2 Architecture and Engineering

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Design Strategies and Visual Expressions; Material and Geometry; Psychology and Sociology of Space Management; Climate and Environmental Design; Relevant Standards and Building Codes; Structure Planning, Load Analysis and Dynamics

### 3 Tools for Design

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Software tools for Architects and Engineers; Comprehensive Building Information Modelling, Production Planning and Life Cycle Engineering

### 4 Material and Details

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Material Properties and Advantages; Light Transmission; Energy and Solar Gain; Building Physics, Detail Development; Testing and Monitoring

### 5 Management, Production Process and Assembly

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Multi-disciplinary Team Building; Project Management (Commercial, Technical and Regulative Aspects); Quality Management; Cost Determination; Contract Procedures (Tender Development); Production and Handling; On-site Assembly and Control; Sustainability, Maintenance and Recycling

### 6 Master's Thesis

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Thesis development will focus on topics that strengthen overall knowledge and skills management, scientific research, innovation, product development, patents, publications and identify areas for further studies

## Learning Concept

> Through continuing advances in technology, materials and design approaches, Lightweight Membrane Structures (LMS) offer immense opportunities to translate moments of recognition and inspiration into creative, functional designs.

> These flexible, non-rigid materials are increasingly used worldwide in structures ranging from shade sails, facades up to stadium roofs. While this innovative technology effectively manages and incorporates multi-dimensional spaces, it also unleashes the boundless creativity and vision required to rapidly make design - a physical reality.

> In the pioneering spirit of visionaries like Frei Otto or Antoni Gaudí, we are proud to offer a Master's Program in Lightweight Membrane Structures.

> The knowledge and skills acquired in this unique program will build upon early work and core principles integrating the most recent advances in both new materials and building technologies.

> The world leading experts and practitioners offer unique knowledge and insights into the latest fabrication technologies as well as practical application skills from the evolving global sector of Lightweight Membrane Structures.

## Benefits and Outcomes

**Participants graduating from the course will achieve the following goals:**

1. Join the leading professional global network of experts and practitioners exchanging ideas and experiences acquired from state of the art Lightweight Membrane Structures
2. To be prepared for a rapidly changing and challenging future with new skill-sets and professional experience
3. Acquire skills and applied knowledge translating these elements into creative designs and actual project implementation  
Recognize and exploit the full commercial and environmental potential of Lightweight Membrane Structures