International
Elite Summer School Est. 2021
in Robotics & Entrepreneurship

Requirements for attendance

Aug. 4th to Aug. 22nd 2026
Odense - Denmark

Application deadline:
March 15th, 2026 (12:00 noon CET)

Requirements must be met at the time of participation, not at the time of registration.

The formal requirements for attendance are:

→ At least 4 years (equivalent to 240 ECTS) passed on a university education within robotics or nearby scientific fields and current enrollment in a master's degree or graduate program (PhD)

→ Proficiency in English

→ You can find the formal course description here

By the time of participation, students are expected to have sufficient knowledge about the following academic concepts to work proficiently during the course.

Mathematics for Robotics and Computer Vision:
→ Homogeneous coordinates and transformation matrices
→ Distance metrics in N-dimensional vector spaces
→ Covariance matrices for distributions
→ Singular Value Decomposition
→ Linear and Cubic Interpolation
→ Optimization using iterative numerical methods
→ Some knowledge of Neural Networks and how they are trained

Kinematics for Robotic Manipulators:
→ Cartesian Space and Configuration Space for manipulators
→ Direct/Forward kinematics for Manipulators
→ Manipulator Jacobians

Image Representations and Processing:
→ An image described as an intensity function $f(x,y)$. Tesselation by pixels
→ 2D Convolution
→ 3D Point Clouds with or without colours and surface normals

Modeling and Control of Robots:
→ Basic understanding of dynamical systems described by ODEs
→ Feedback control
→ Stability Analysis for Dynamical Systems (linear case)

Programming:
→ General programming capabilities in Python, C++ or Matlab
→ Knowledge of how to turn a mathematical description into a program

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