

## Advanced Robotics

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**Subject area:** Industrial Engineering

<b>University:</b>	TalTech
<b>Level:</b>	MA all years
<b>Teaching mode:</b>	blended: mostly online, but presence on campus required in certain period
<b>Instructor(s):</b>	Valery Vodovozov

### Short description

The course gains knowledge of advanced robotics, respective equipment and software used to maintain and control robots. It masters practical skills in utilising robotic systems for solving real industrial and everyday problems. The students acquire ability in developing intelligent algorithms and programs to manage autonomous robots and cobots. They get a sense of integrating advanced robots into production and everyday processes and orienting in robotics future trends.

### Full description

<http://ois2.ttu.ee/uusois/subject/EEM0080>

### Learning outcomes

At the end of the course, the learner will be able to:

- maintain and control robots;
- utilize robotic systems for solving real industrial and everyday problems;
- develop intelligent algorithms and programs to manage autonomous robots and cobots.

### Recommended in particular for students of the following study programmes

Robotics, mechatronics, electrical engineering, mechanical engineering, industrial engineering.

### General information

<b>Contact hours per week:</b>	4
<b>Total workload:</b>	156 (in student hours for the whole course)
<b>ECTS credits:</b>	6

**Language:** English

**Course start date:** 01 February 2023  
**Course end date:** 31 May 2023  
**Add. info about start date:**  
**Weekly teaching day/time:**  
**Time zone:** CET +1 (Estonia, Israel)  
**Further information:**

**Prerequisites:** basic knowledge of algebra, geometry, differential, vector and matrix calculus, mechanics, electricity, optics, programming and computer proficiency and at the level of a qualified end user.

**Activities and methods:** Lectures, Lab-work, Self-study, Exercises  
**Presence on campus:** Lab works - 1 week in May

## Final examination

**Form:** assignment  
**Date:**  
**Location/format:** online  
**Re-sit possibility:** yes  
**Transcript available:** end of semester  
**Add. info/requirements:** Exam grade is equal to the sum of online quiz scores, exercise options, lecture activities, and presentation grades.

## Registration

To register for this course, follow the registration requirements of your **home university** as specified here: [www.euroteq.eu/courses-registration](http://www.euroteq.eu/courses-registration).

## Administration

**Number of places:** 10  
**Minimum participants:** 2  
**Internal course code:** EEM0080  
**Contact:** valery.vodovozov@taltech.ee

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*This course is part of the EuroTeQ Engineering University joint course catalogue 2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit [www.euroteq.eu](http://www.euroteq.eu) or get in touch with the above-mentioned point of contact.*