

Industrial Automation and Drives

Subject area: Electrical Engineering

University: TalTech
Level: MA all years
Teaching mode: hybrid: some students participate online, other students attend real-life
Instructor(s): Anton Rassölkin

Short description

The industrial automation part aims to introduce industrial and building automation technologies, automation, devices programming languages, and data communication interfaces and protocols. The Drives part aims to introduce the development, contemporary problems, and motor control principles of today's industry. The goal of the course is to develop necessary analysis abilities to plan industrial automation and overview of ac machines modelling and realization of vector control in industry.

Full description

<http://ois.ttu.ee/subject/EEV5040>

Learning outcomes

The student:

- is acquainted with production technologies and industrial technical systems of different industries, including hardware and software resources of industrial automation (pneumatic systems, drives, controllers, SCADA, servers), industrial data communication and standards;
- is acquainted with standardized programming languages (IEC 61311-3, IEC 61499, DIN 66312) for industrial controllers and robots;
- is acquainted with contemporary problems of electrical drives and dynamics of ac electrical drives, principles of vector control and direct torque control;
- knows how to program industrial automation devices, data communication and condition monitoring systems, including implementation of controllers for the control of production processes;
- has experience in motor dynamics modelling, including vector control of ac electrical machines and transformation of vector coordinates.

General information

Contact hours per week: 4

Total workload: 156 (in student hours for the whole course)
ECTS credits: 6
Language: English

Course start date: 04 September 2022

Course end date: 20 January 2023

Add. info about start date:

Weekly teaching day/time:

Time zone: CET +1 (Estonia, Israel)

Further information:

Prerequisites: Basic course of industrial automation and electrical drives

Activities and methods: Lectures, Lab-work, Self-study, Practices

Presence on campus: on agreement

Final examination

Form: written exam or online evaluation if conditions met

Date:

Location/format:

Re-sit possibility:

Transcript available: end of semester

Add. info/requirements:

Registration

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

Administration

Number of places: 10

Minimum participants:

Internal course code: EEV5040

Contact: anton.rassolkin@taltech.ee

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. 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 or get in touch with the above-mentioned point of contact.