

Control, Robotics and Autonomous Systems

Basic information

Biämne på svenska: Reglerteknik, robotik och autonomiska system

Minor in Finnish: Sääntötekniikka, robotiikka ja autonomiset järjestelmät

Code: ELEC3028

Responsible professors: Quan Zhou, Valeriy Vyatkin

Extent: 20 credits

Language: English

Prerequisites: Minor in Automation and Control Engineering in the BSc degree or equivalent knowledge.

Content and structure of the minor

The minor extends the bachelor-level minor of Automation and Control Engineering. It offers deeper understanding of modelling, estimation and control of dynamical systems. In addition students will study the development of distributed automation systems.

Learning objectives:

A student

- Is able to develop software for distributed automation systems
- Is able to model dynamical systems
- Is be able to design controllers for dynamical systems

The minor consists of 20 credits in total. Students may either choose to complete all compulsory courses or three compulsory courses and one elective course as given in the list below.

Code	Name	Credits	Teaching Period
Compulsory courses - Choose a minimum of 3 courses (15 credits) from the list below		15	
ELEC-E8101	Digital and Optimal Control	5	I-II
ELEC-E8102	Distributed and Intelligent Automation Systems P	5	I-II
ELEC-E8103	Modelling, Estimation and Dynamic Systems	5	I-II
ELEC-E8104	Stochastic Models and Estimation	5	I
Optional courses - Choose 1 course (5 credits) from the list below			
ELEC-E8110	Automation Software Synthesis and Analysis P	5	I-V-V

ELEC-E8111	Autonomous Mobile Robotics	5	IV
ELEC-E8001	Embedded Real-Time Systems	5	I- II
ELEC-E8113	Information Systems in Industry	5	I- II
ELEC-E8115	Micro and Nano Robotics P	5	III - IV
ELEC-E8116	Model-Based Control Systems	5	I- II
ELEC-E8125	Reinforcement Learning	5	I- II
ELEC-E8126	Robotic Manipulation	5	III - IV
CS-E4850	Computer Vision	5	I- II