



RTU Course "Industrial Programmable Control Systems"

11103 Industriālās elektronikas un elektrotehnol.katedra

General data

Code	EEP430
Course title	Industrial Programmable Control Systems
Course status in the programme	Compulsory/Courses of Limited Choice; Courses of Free Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Power and Electrical Engineering
Responsible instructor	Ivars Raņķis
Academic staff	Aivars Pumpurs
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	Building of programmed control systems, cyclic mode programmable control, its realization on base of processors, programmable control of trajectory of motion, copying - electric-mechanic, photo-electronic, interpolation, systems with step mode motors and ordinary motors
Goals and objectives of the course in terms of competences and skills	To master the general notion of the tasks of programming control systems, their realization, base of elements, types of programmable control and its realization
Structure and tasks of independent studies	The students prepare for tests, make tasks in development of programming control systems.
Recommended literature	J.Greivulis, I.Raņķis Iekārtu vadības elektroniskie elementi un mezgli. Rīga:Avots, 1997, 288 lpp
Course prerequisites	Electronic devices, electric drive, power electronics

Course outline

Theme	Hours
Structure of the programmable control systems	2
Elements of the programmable control systems	4
Structure and elements of the cycle programmable control system	4
Microprocessor based cycle programmable control system	6
Tasks of motion control	2
Realization principles of linear and circular interpolation	4
Interpolation systems with step motors	4
Interpolation systems with uninterrupted sensors of position	4
Final test	2

Learning outcomes and assessment

Learning outcomes	Assessment methods
The students are able to explain basic principles of programmable control	Assessment in principles of programmable control
The students are able to explain importance of different elements application in the systems of programmable control	Assessment in elements application in the systems of programmable control
The students are able to develop simple systems of programmable control	Description of course project is developed and described
The students are able to explain principles of interpolation	Questions on interpolation at the test
The students can compile simple task in programmable control	Test for the task

Study subject structure

Part	CP	ECTS	Hours per Week			Tests			Tests (free choice)		
			Lectures	Practical	Lab.	Test	Exam	Work	Test	Exam	Work
1.	2.0	3.0	2.0	0.0	0.0	*					