RTU Course "Elements of Automatics"

11103 Industriālās elektronikas un elektrotehnol.katedra

General data

Code	EEP570
Course title	Elements of Automatics
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Post-graduate Studies
Course type	Academic
Field of study	Power and Electrical Engineering
Responsible instructor	Nadežda Kuņicina
Academic staff	Oskars Krievs Aivars Pumpurs Igors Uteševs
Volume of the course: parts and credits points	1 part, 9.0 Credit Points, 13.5 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	Sensors for measurement of electrical and non-electric parameters. Measurements schemes. Synthesis of logical parts of measurement schemes. Functional converters. Characteristics of technical parameters. Indicators of reliability level of the schemes.
Goals and objectives of the course in terms of competences and skills	The goal is to prepare the automatisation project by the students. Main objectives is to create the process automatisation skills by the students.
Structure and tasks of independent studies	Students has to develop switching scheme and to develop automatisation project
Recommended literature	A.Šnīders, R.Leščevics, A.Galiņš. Automātisko sistēmu elementi un ierīces, LLU, Jelgava, 2002, 68 lpp.
Course prerequisites	Fundamentals of electrical engineering, electronics

Course outline

Theme	Hours
Introduction	2
Electrical values sensors	2
Non – electrical values sensors	2
Creation of logical part	2
Measurement schemes	12
Functional converters	12
Characterization of technical parameters of functional converters	12
Safety of functional converters schemes	12
Automatisation of industrial processes, equipment switching	12
Choosing of elements for automatisation schemes	4
Applications of speed and acceleration sensors, switching schemes	12
Usage of automatics elements for control, switching schemes	12
Automatisation of water supply, switching schemes	12
Development of alternative power supply productions, specific of production automatisation	12
Selection of automatic elements for ”smart house”, example of scheme	12
Creation of schemes with video signal translation	12

Learning outcomes and assessment

Learning outcomes	Assessment methods
Students had sufficient knowledge about elements of automatics and its application	Students had acquired a themes, the examination answers are positive.
Students had sufficient knowledge about specific of production automatisation equipment	Students had acquired a themes, the examination answers are positive.
Students are able to choose sufficient elements for schemes	Students had acquired a themes, the examination answers are positive.
Students are able to develop automatisation schemes	Students had acquired a themes, the examination answers are positive.

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work

1.	9.0	13.5	0.0	9.0	0.0		*	