

RTU Course "Robot control system development project"

33000 Faculty of Computer Science, Information Technology and Energy

General data

Code	DSP712
Course title	Robot control system development project
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Agris Nikitenko
Volume of the course: parts and credits points	1 part, 3.0 credits
Language of instruction	LV
Annotation	Within the study course, it is planned to develop a control system for a specific robotic system. The project is organized a work in groups.
Goals and objectives of the course in terms of competences and skills	The aim of the study course is to develop students' ability to cooperate in a group, plan their work independently, fulfil the assigned duties, as well as to defend and substantiate the results of their work. The tasks of the study course are: - to provide skills in project task selection and scoping; - to provide skills to cooperate in a group within a joint project; - to provide skills to define project goals, and objectives and formulate technical requirements; - to provide skills and abilities to plan one's work in the context of a common task; - to provide skills in the development and presentation of technical documentation.
Structure and tasks of independent studies	The study course is organized as practical work/ project in groups, where job assignments are planned and assigned within the group. The task accomplishments are controlled within the group as well. The assigned task is being accomplished individually by group members.
Recommended literature	Obligātā/Obligatory: 1) R.Siegrwart, R. Naurbaghsh Introduction to autonomous mobile robots, MIT Press, 2004. 2) S.Russell, P.Norvig Artificial intelligence: a modern approach 4th edition, Pearson Education Inc., 2021. Papildu/Additional: 3) iRobot Roomba tehniskā dokumentācija.
Course prerequisites	Solution algorithmization and programming parts I and II, Electrotehnics and electronics.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
Student group selection.	4	4	0	0
Project task selection, analysis and detailed elaboration.	4	4	0	0
Individual assignments.	4	4	0	0
Project schedule development, implementation and control.	16	16	0	0
Development of technical documentation.	8	8	0	0
Presentation of project results.	4	4	0	0
Total:	40	40	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods
Is able to join the group for a common goal in robotic system design projects.	Individual assessment based on contribution to the group project.
Is able to plan own activities in accordance with the outcomes of other group activities.	Individual assessment based on contribution to the group project.
Is able to elaborate technical documentation typical for robotic system design projects.	Individual assessment based on contribution to the group project.
Is able to present robotic system design project results.	Individual assessment based on contribution to the group project.

Evaluation criteria of study results

Criterion	%
Group work report and presentation	100
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work

1.	3.0	0.0	2.0	0.0			*
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