



## RTU Course "Fundamentals of Computer Systems Design"

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### General data

Code	DSP341
Course title	Fundamentals of Computer Systems Design
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Academic
Field of study	Computer Science
Responsible instructor	Jānis Grundspenķis
Academic staff	Mārīte Kirikova
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, EN
Annotation	Systems life cycles and design. Stages of system design. Top down and bottom up design strategies. Traditional and advanced approaches to Subject help to understand tasks of system designing and place in the system development' s process. Students form project team, led by a student. The group consists of subgroups which are also conducted by the students. Students' task is to establish requirements for designed system, design it and realize at least in the prototype' s level. The system has a real customer, and all student activities proceed in natural conditions of the systems designing. Subject also includes the theoretical aspects of the systems designing: upward and downward designing, traditional and modern methods of the system designing, different types of the system designing.
Goals and objectives of the course in terms of competences and skills	The aim of the subject is to give insight into system designing and develop the skills needed to the system designing. Main tasks are following: 1. To introduce students with the theoretical aspects of the system designing. 2. To develop practical skills in system designing. 3. To develop required skills to teamwork and management. 4. To enable develop a real project in almost natural conditions.
Structure and tasks of independent studies	Tasks which are provided in the project' s plan are done within a independent work.
Recommended literature	Systems Approach to Engineering Design Author: Sydenham, Peter Publisher: Artech House, Incorporated Released: 2003
Course prerequisites	Systems Analysis and Knowledge Acquisition, Programming, Database

### Course outline

Theme	Hours
Design role in the life cycle of the system development.	1
Establishment of the project.	1
Origination and management of the project group and team work.	6
Planning of the project.	1
Design types and methods.	4
Development of the project.	16
Presentation of the project.	3

### Learning outcomes and assessment

Learning outcomes	Assessment methods
Student understands the role of design in the system development.	Student's group has to make correct plan of the system development with adequate design tasks. Examination.
Student is able to develop and adjust the plan of the project.	Properly constituted individual, group, and collective project plans.
Student is able to work out agreement of the project development.	Properly constituted individual, group, and project's collective contract.
Student knows how to choose the appropriate design methods to the task.	A group of students show a skill to choose between several possible methods the best one for the project.
Student is able to work in a group and /or manage the project's team.	Reports of the work organisation in the group(s).
Student is able to achieve the aim of the project's task.	Accomplished work which in accordance with the contract and work's plan. Examination.

Student knows how to present the project.	Project presentation to the audience is prepared and executed.
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***Study subject structure***

Part	CP	Hours per Week			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	2.0	1.0	1.0	0.0		*	