



## RTU Course "Computer System Design Methods (scientific seminar)"

12307 Sistēmu teorijas un projektēšanas katedra

### General data

Code	DSP505
Course title	Computer System Design Methods (scientific seminar)
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Post-graduate Studies
Course type	Academic
Field of study	Computer Science
Responsible instructor	Grundspenķis Jānis
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, EN
Possibility of distance learning	Not planned
Abstract	The important component of scientific work is implementation and experimental verification of defined goals and tasks. Students acquire knowledge about specific character of research and its organization, and generally known and widely used research methods. The course focuses on specific problems and methods of computer science. Students get acquainted with topical directions in computer science, in particular with those, in which active research is carried out at the department. Students improve their analysis skills of scientific publications as well as presentation skills giving a report on results obtained during their work on master thesis, and scientific writing skills by preparing a scientific report or a scientific publication.
Goals and objectives of the course in terms of competences and skills	The goal of the course is to give theoretical knowledge about specific character of scientific work and its organization, about generally known and widely used research methods analysing the specific character of computer science, to introduce students with topical research directions in computer science, in particular those related with research carried out at the department, and to promote skills to verify theoretical conceptions and obtained results.
Structure and tasks of independent studies	Based on the goal and tasks of master thesis students must explain the planned research cycle and justify used research methods. The presentation about research connected with master thesis and achieved results must be prepared and given during the seminar, and the scientific report must be written or the scientific publication prepared.
Recommended literature	Ar maģistra darba tēmu saistītās zinātniskās publikācijas
Course prerequisites	none

### Course outline

Theme	Hours
Notions of science, social, fundamental and applied science, specific character of computer science	2
Advanced research directions in computer science, research cycle and structure of scientific publication	2
Generally known and widely used research methods for information analysis, hypothesis proposal and its verification	2
Examples of methods used in computer science research	2
Topical research directions in database technologies	2
Topical research directions in information system development	2
Topical research directions in introduction in practice and usage of information systems	2
Topical research directions in intelligent agents and knowledge management	2
Topical research directions in multiagent system development	2
Topical research directions in intelligent tutoring system development	2
Topical research directions in autonomous robotic system development	2
Student reports on research results in the chosen topic and development of master thesis	10

### Learning outcomes and assessment

Learning outcomes	Assessment methods
Students know specific character of research and its organization in computer science, research cycle in it and structure of scientific publication	Research organization and research cycle related to master thesis must be explained in the written report
Students know topical research directions in computer science	Characterization of topical research directions related to the topic of master thesis must be given in the written report
Students can develop and design a presentation and prepare a scientific report or a publication about their research	Performed research in the chosen topic must be represented in presentation given at the seminar and described in a scientific report or a publication

### Study subject structure

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