RTU Course "Enterprise Architecture and Requirements Engineering"

33000 Datorzinātnes, informācijas tehnoloģijas un enerģētikas fakultāte

General data

Code	DE0747
Course title	Enterprise Architecture and Requirements Engineering
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Mārīte Kirikova
Academic staff	Pēteris Rudzājs
Volume of the course: parts and credits points	1 part6.0 ECTS credits
Language of instruction	LV, EN
Abstract	The study course presents basic approaches to requirements engineering. Students learn to identify and design enterprise/business architectures and specify requirements for organisational information systems viewing people and computer systems as nodes of information processing. They learn to analyse and evaluate information logistics in organizations. Acquired knowledge is beneficial not only for requirements identification for information and communication technology solutions; it is applicable also for the design of products and services in general.
Goals and objectives of the course in terms of competences and skills	The goal of the study course is to provide knowledge, understanding and skills in the identification, representation and management of requirements while respecting the enterprise architecture of organizations. The tasks of the study course: 1. To provide an understanding of business architecture and requirements engineering standards and their evolvement dynamics. 2. To provide awareness of the range of methods used in requirements engineering. 3. To develop the ability to reflect and evaluate enterprise architecture and its changes. 4. To develop the ability to use different requirements engineering methods and evaluate their usefulness in specific situations.
Structure and tasks of independent studies	In the independent studies, the topics discussed in the study course are studied in depth, including preparation for the exam. Correspond to each course topic, there also are Individual tasks where the student independently develops and evaluates business models for a problem domain of his own choice.
Recommended literature	Obligātā/Obligatory: 1. Pohl, Klaus. Requirements engineering / Klaus Pohl. Heidelberg [etc.]: Springer, 2010., xvii, 813 lpp.: il. (specified sections/ atsevišķas nodaļas) 2. Enterprise Modeling: Tackling Business Challenges with the 4EM Method / ed. by K.Sandkuhl, J.Stirna, A.Persson, M.Wißotzki. Heidelberg [etc.]: Springer, 2014., XIV, 309 p.: ill., tab. 3. ArchiMate Specification, https://www.opengroup.org/archimate-forum/archimate-overview Papildu/Additional: 1. Robertson, Suzanne. Mastering the requirements process: getting requirements right /Suzanne Robertson, James Robertson. Upper Saddle River (N.J.) [etc.]: Addison-Wesley,2013., xxvi, 541 lpp.: il. 2. Evernden, Roger. 101 lessons from enterprise architecture / Roger Evernden. Lielbritānija: 2015., 208 lpp.: ilustrācijas. 3. Evernden, Roger. Enterprise architecture: the eight fundamental factors / Roger Evernden, Elaine Evernden. Lielbritānija: 2015., 301 lpp.: ilustrācijas. 4. Desfray, Philippe. Modeling enterprise architecture with TOGAF: a practical guide using UML and BPMN /Philippe Desfray, Gilbert Raymond. Amsterdam; Boston: Morgan Kaufmann, 2014., xvi, 288 lpp.: il.
Course prerequisites	Suggested: systems analysis, database basics.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
The scope of advanced requirements engineering. Standards in requirements engineering. Cognitive psychological and ethical issues in requirements engineering.	8	14	0	0
Problem oriented requirements engineering.	8	12	0	0
Enterprise modeling and requirements engineering.	8	8	0	0
Information logistics.	4	12	0	0
Enterprise architecture: the frameworks and description language.	16	20	0	0
Other approaches in requirements engineering (value based and agent based requirements engineering).	8	12	0	0
Variability management in requirements engineering.	4	6	0	0
Decision model and notation.	4	6	0	0
Requirements management and continuous requirements engineering.	4	6	0	0
Total:	64	96	0	0

Learning outcomes and assessment

Learning outcomes	Learning outcomes assessment methods and assessment criteria
Understands the goals, scope and problems of enterprise architecture and requirements engineering.	Demonstrate this understanding by solving tasks in the exam.
Is able to acquire requirements without overstepping ethical principles of business, systems analysis, and information systems design.	Correct answers in individual or group assignments and/or the exam.
Is able to use and evaluate requirements engineering methods and tools.	Correct answers in individual or group assignments and/or the exam.
Is able to represent and evaluate the As-Is and To-Be states of an enterprise architecture.	Enterprise architecture models developed and evaluated in individual and/or group assignments and the exam.
Is able to suggest systemic information technology solution according to the business needs.	Defines requirements for information technology solution systemically for the business needs of the case chosen in individual assignment and the case given in the exam.

Course tests

Tests	% of final assessment
The results of individual and group assignments (at least 40% of the maximum of points should be achieved)	50
Exam (at least 40% of the maximum of points should be achieved)	50
Total:	100

Course planning

Part	Semester			CP	Academic hours			Tests		
	Autumn	Spring	Summer		Lectures	Practical	Lab.	Test	Exam	Work
1.	*			6.0	32.0	0.0	32.0		*	