

DESCRIPTION OF THE STUDY SUBJECT

Title

INFORMATION SYSTEMS ENGINEERING
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Scope of subject

Semester	Moe of study	Structure*					Total number of hours	Number of credits	Group and type of subjects
		L	Lw	C	TP	S			
V	Full-time	13	38	14	26	93	184	7	Compulsory subjects of the study field
VI	Part-time	5	7	21	6	40	184	7	
VII		6	12	28	6	53			

*L – lectures, PS – practical activities, seminars, LW – laboratory work, PR – practice, CP – course paper, C – consultations, S – self-study

Aim of the subject

To get familiarised with basics of methods of designing information systems, unified modelling language, project management using computer tools and their practical application, models of life cycles of the software system, programming paradigms, specification of requirements, designing of software, implementation, testing and maintenance of software. To analyze principles of project creation, planning, implementation and assessment.

Necessary background knowledge for studying the subject

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Content of the subject

Title of the topic and description of the content	Number of contact hours				S	Total number of hours
	L	Lw	C	TP		
1. The concept of the system as a unit. Classification of information systems. Infrastructure, methods of creation of systems.	1	-	-	-	5	6
2. Project initiation processes. The analysis of customer needs.	2	-	-	-	6	8
Laboratory works: • Planning of the project. • Description of project aims and needs. • Specification of technical architecture.	-	7	2	-	6	15
3. Specification of the system. Life cycle models of the system.	1	-	-	-	-	1
Laboratory works: • Preparation of the specification of the system • Preparation of lifecycle models of the system	-	4	3	-	6	13
4. Basics of UML. Diagrams of UML.	2	-	-	-	-	2
Laboratory works: • Use cases diagram. • Sequence diagram. • Class diagram. • Activity diagram.	-	10	4	-	15	29
5. Assurance of the quality of the system.	1	-	-	-	-	1
6. Implementation of the strategy of amendment and adjustment of systems. Assurance of protection of systems, testing.	4	-	-	-	-	4
Laboratory works: • Sketch design of the system. • The plan of testing of the system. • Assurance of quality of project processes. • Testing of the system.	-	16	4	-	20	40
Audit of information systems.	2	-	-	-	-	2
Laboratory work. Audit.	-	1	1	-	2	4
Preparation of the term paper and its defence					26	46
Total number of hours	13	38	14	26	93	184

Assessment of learning outcomes

Ten-point criteria-based assessment system as well as cumulative assessment using individual cumulative index (ICI) are applied. The overall grade is the sum of grades for the intermediate accountings multiplied by weighted coefficients. $ICI = 0,4 Lw + 0,6 CP$, where CP – course paper, Lw – laboratory works

Recommended literature

Key literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house	Number of copies and/or internet link		
				ŠSC library	Other premises	Other libraries *
1.	2011	Ian Sommerville, Software engineering	Pearson	1	-	-
2.	2008	Saulis A., Vasilecas O, Informacinių sistemų projektavimo metodai	Technika	1	-	3
3.	2015	UML Course		https://www.vtc.com/products/UML_tutorials.htm		
Additional literature						
No.	Year of publishing	Author(s) and title of the publication	Publishing house and/or internet link			
1.	2016	Daugirdas D. Nuotolinis kursas – „Informacinių sistemų inžinerija“	https://moodle.svako.lt/course/view.php?id=173			
2.	2000	Simanauskas L Informacinės sistemos	VU leidykla			
3.	1998	Saulis A., Vasilecas O. Informacinių sistemų pagrindai	Technika			
4.	1997	Simanauskas L. Informacinių sistemų analizė	VU leidykla			
5.		Structuring Specification of Business Systems with UML	http://jeffsutherland.org/ooops/la98/pavel.html			
6.		The Unified Modeling Language	http://www.uml-diagrams.org/			

* ŠAVB – Šiauliai Region Povilas Višinskis Public Library, ŠU – library of Šiauliai University

Required material resources and their short description

<ul style="list-style-type: none"> • Equipment (devices): a computers (16 units), computers connected to the local network and connected to the Internet, multimedia projector, printer. • Software: MS Office 2013 or later, or OpenOffice.org 4.1 or later, MS Windows 7 or later, CASE tool – Magic Draw, Umbrello UML Modeller or another, MS Visio, DIA or another.
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The description prepared by:

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