



## COURSE UNIT DESCRIPTION

Course unit title	Course unit code
Electronic signature infrastructure and electronic documents	PSEP7134

Lecturer(s)	Department
<b>Coordinator:</b> Adomas Birštunas <b>Other lecturers:</b> Saulius Ragaišis	Institute of Computer Science Faculty of Mathematics and Informatics Vilnius University

Cycle	Type of the course unit
Second	Optional

Mode of delivery	Semester or period when the course unit is delivered	Language of instruction
Face-to-face	Autumn semester, first year of study	Lithuanian, English

Prerequisites
<b>Prerequisites:</b> Requirements Engineering Software Systems Architecture and Design

Number of credits allocated	Student's workload	Contact hours	Individual work
5	135	48	87

Purpose of the course unit: programme competences to be developed		
To deepen one's knowledge of electronic data protection, methods of protection, electronic signature and Public Key Infrastructure (PKI). To form abilities of students to develop and use information systems based on electronic documents in public and private sectors.		
Learning outcomes of the course unit: students will be able to	Teaching and learning methods	Assessment methods
Substantiate electronic data protection against unauthorized exchange or disclosure to unauthorized persons, verification identity of persons.	Problem-oriented teaching, case studies, information search, literature reading, individual work, consultations, making a presentation ready, discussions, oral presentation of results	Laboratory works, documentation, and oral presentation of their results, participation in discussions, take an exam (written)
Deal with public key infrastructure (PKI) implementation issues and use electronic signature technology in electronic commerce, public procurement, internet voting, etc.		

Course content: breakdown of the topics	Contact hours						Individual work: time and assignments		
	Lectures	Tutorials	Seminars	Practice	Laboratory work (LW)	<i>Tutorial during Practice</i>	Contact hours	Individual work	Assignments
Structure of the course and requirements. Essentials of the el. signatures and el. documents	2						2		
Law aspects of the el. signature	2						2	7	
Public key infrastructure and digital signature	2						44	50	
Types of the signing with el. signature: stacionary, mobile, remote (server-side) signing	4								
Signature certification services, signature certification service providers	4								
El. signature creation	2								
El. signature validation and el. signature validity	4							20	
El. signature classification and el. signature formats	2								
El. documents and their applications	4								
Specifications of the el. documents	4								
Tools for el. document management	2							10	
Total	32		16				48	87	

Assessment strategy	Weight %	Deadline	Assessment criteria
Seminars	15 %	During year of study	Assessment of the prepared presentation, participation in discussion (up to 1,5 point)
Laboratory work	30 %	Till 14-th week of the year of study	Assessment of the ability to perform case study analysis and reasoned presentation of possible solutions (up to 3 points)
Exam (written)	55 %	January	Student can take part in the examination only if both of the following conditions are satisfied: - student made a presentation, - student's laboratory work was assessed at least by 1,5 points (from 3). The exam consists of open, semi-open and closed types of questions having varying degree of difficulty

#### Requirements for taking an exam externally:

Is it possible to take an exam externally: Yes

VU MIF student can take the exam externally if in some previous year the student has made a presentation on a given topic and its laboratory work was assessed at least by 1,5 points (from 3).

The assessment of the externally exam is the same as the regular exam.

Author	Publis hing year	Title	Number or volume	Publisher or URL
<b>Required reading</b>				
Adomas Birštunas	2018	Electronic signature infrastructure and electronic documents. Teaching material		<a href="https://klevas.mif.vu.lt/~adomas">https://klevas.mif.vu.lt/~adomas</a>
European Parliament and the Council of the European Union	2014	Regulation (EU) No 910/2014 of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC		<a href="http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0910&amp;from=EN">http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0910&amp;from=EN</a>
<b>Recommended reading</b>				
CEN Workshop Agreement	2004	CWA 14170 Security requirements for signature creation applications		
CEN Workshop Agreement	2004	CWA 14171 General guidelines for electronic signature verification		
Director General of the Lithuanian Archives Department Under the Government of the Republic of Lithuania	2009	Specification ADOC-V1.0 of the Electronic Document Signed by the Electronic Signature		<a href="https://www.e-tar.lt/portal/lt/legalAct/TAR.11EFBB8DA962">https://www.e-tar.lt/portal/lt/legalAct/TAR.11EFBB8DA962</a>
Office of the Chief Archivist of Lithuania	2014	Electronic document specification PDF-LT-V1.0		<a href="https://www.e-tar.lt/portal/lt/legalAct/31a319e02f7111e4a83cb4f588d2ac1a">https://www.e-tar.lt/portal/lt/legalAct/31a319e02f7111e4a83cb4f588d2ac1a</a>