

Course unit title	Course unit code
E-BANKING TECHNOLOGIES AND SECURITY	

Lecturer (s)	Department where course unit is delivered
Prof. . Dr. Audrius Lopata	Kaunas Faculty, Institute of Applied Informatics

Cycle	Level of course unit	Type of the course unit
Bachelor	1/1	Compulsory

Mode of delivery	Semester or period when the course unit is delivered	Language of instruction
Lectures	5 semester	Lithuanian/ English

Prerequisites and corequisites	
Prerequisites: Information technologies	Corequisites:

Number of ECTS credits allocated	Student's workload	Contact work hours	Individual work hours
5	130	48	82

Purpose of the course unit: programme competences to be developed		
To acquire the fundamental knowledge about the e-banking technologies and electronic fund transfer systems.		
Learning outcomes of course unit	Teaching and learning methods	Assessment methods
Is able to apply theoretical and practical knowledge necessary for the development of electronic payment solutions	Individual project, Laboratory classes, Literature analysis	Colloquium (interview led by lecturer and / or specialist), Examination, Individual work, Laboratory examination
Is able to put in practice methodologies and tools necessary for electronic payment solutions analysis, specification and certification processes.	Individual project, Laboratory classes	Colloquium (interview led by lecturer and / or specialist), Examination, Individual work, Laboratory examination

Course content: breakdown of the topics	Contact work hours							Individual work hours and tasks	
	Lectures	Consultations	Seminars	Practice classes	Laboratory	Practice	All contact work	Individual work	Tasks
1. Introduction to e-banking. History, technology types, their advantages and disadvantages, evolution and future trends..	4						4	5	Practical work Individual practical work
2. Mobile and online banking technology.	4				2		6	10	Practical work

Hardware and software. Review of situation in Lithuania and abroad.								Individual practical work
3. Architecture of electronic payment solutions technologies, their operating principles. Electronic payment transactions processing principles, the most popular protocols and standards.	8			4		14	20	Practical work Individual practical work
4. The security of electronic payment systems. The requirements of Payment Card Industry Data Security Standard (PCI DSS). The examples of its practical implementation.	8			4		12	20	Practical work Individual practical work
5. EMV based hardware and software regulations, specifications and standards, the application in business solutions.	8			4		12	17	Practical work Individual practical work
6. Preparation for exam.							10	Practical work Individual practical work
Total	32			16		48	82	

Assesment strategy	Comparative weight percentage	Date of examination	Assesment criteria
Colloquium	20	9 week.	Includes 1-3 topics material Assessed in grades 1-10 rating scale: 10-9: Excellent knowledge and skills. The evaluation level. 90-100% correct answers. 8-7: Good knowledge and skills may be minor errors. Synthesis level. 70-89% correct answers. 6-5: Average knowledge and skills with errors. Level of analysis. 50-69% correct answers. 4-3: Knowledge and skills is below average, the (material) errors. Knowledge of the level. 20-49% correct answers. 2-1: Dissatisfied with the minimum requirements. 0-19% correct answers.
Lab. No.1	20	10 week.	Assessed in grades 1-10 rating scale: 10-9: Excellent knowledge and skills. The evaluation level. 90-100% correct answers. 8-7: Good knowledge and skills may be minor errors. Synthesis level. 70-89% correct answers. 6-5: Average knowledge and skills with errors. Level of analysis. 50-69% correct answers. 4-3: Knowledge and skills is below average, the (material) errors. Knowledge of the level. 20-49% correct answers. 2-1: Dissatisfied with the minimum requirements. 0-19% correct answers.

Lab. No.2	20	15 week.	Assessed in grades 1-10 rating scale: 10-9: Excellent knowledge and skills. The evaluation level. 90-100% correct answers. 8-7: Good knowledge and skills may be minor errors. Synthesis level. 70-89% correct answers. 6-5: Average knowledge and skills with errors. Level of analysis. 50-69% correct answers. 4-3: Knowledge and skills is below average, the (material) errors. Knowledge of the level. 20-49% correct answers. 2-1: Dissatisfied with the minimum requirements. 0-19% correct answers.
Exam	40	16 week.	Assessed in grades 1-10 rating scale: 10-9: Excellent knowledge and skills. The evaluation level. 90-100% correct answers. 8-7: Good knowledge and skills may be minor errors. Synthesis level. 70-89% correct answers. 6-5: Average knowledge and skills with errors. Level of analysis. 50-69% correct answers. 4-3: Knowledge and skills is below average, the (material) errors. Knowledge of the level. 20-49% correct answers. 2-1: Dissatisfied with the minimum requirements. 0-19% correct answers.

Author	Year	Title	Number of periodical publication or publication Volume	The place of publication and publisher or online link
Required reading				
EMVCo	2017	A Guide to EMV Chip Technology Version 3.0		https://www.emvco.com/wpcontent/uploads/documents/A-Guide-toEMV-ChipTechnologyv3.0.pdf
EMVCo	2016	Software-based Mobile Payment Security Requirements Version 1.0		https://www.emvco.com/wpcontent/plugins/pmprocustomizations/oygetfile.php?url=/wpcontent/uploads/documents/EMVCoSoftwarebasedMobilePaymentSecurityRequirements_V1.0_20161213_20161213093622436.pdf
EMVCo	2016	EMV® Contactless		https://www.

		Mobile Payment – Application Activation User Interface Version 1.0		emvco.com/wpcontent/plugins/pmprocustomizations/oygetfile.php?url=/wpcontent/uploads/documents/EMVCoSoftwarebasedMobilePaymentSecurityRequirements_V1.0_20161213_20161213093622436.pdf
Schatt D., Laplanche R.	2014	Virtual Banking: A Guide to Innovation and Partnering	1 edition	Wiley Finance
Skinner C.	2014	Digital Bank: Strategies to Launch or Become a Digital Bank		Marshall Cavendish International
SCN Education B.V.	2008	Electronic Banking: The Ultimate Guide to Business and Technology of Online Banking		Vieweg+Teubner Verlag
Padsuren Oyungerel	2008	Online Banking– The Effect of Prior Experience on Online Banking Acceptance in Mongolia		VDM Publishing, 2008
LAP Lambert Academic Publishing, 2011	2011	E-Banking Services: A Study of the Computer Based Banking Services		A. K. M. Harun-Ur-Rashid