



## COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
<b>INFORMATION SYSTEMS</b>	

Lecturer(s)	Department(s) where the course unit (module) is delivered
<b>Coordinator: Prof. Dr. Tadas Limba</b> <b>Other(s):</b>	Faculty of Economics and Business Administration Saulėtekio ave. 9, II building, LT 10222 Vilnius

Study cycle	Type of the course unit (module)
First	Elective

Mode of delivery	Period when the course unit (module) is delivered	Language(s) of instruction
Face-to-face / on-line	Autumn semester	English

Requirements for students
<b>Prerequisites: -</b>

Course (module) volume in credits	Total student's workload	Contact hours	Self-study hours
5	130	48	82

Purpose of the course unit (module): programme competences to be developed		
Purpose of the course unit is to introduce the relationship between the development of advanced technologies, the information society and the development of business information systems, to develop information systems modelling skills and competences, to analyse the success cases of the application of information systems in business, to analyse the peculiarities of the development of e-money, e-payment, cryptocurrencies and blockchain systems, the methods and tools, the relevance of cyber-security to information systems development and to apply the acquired knowledge to practical situations.		
Learning outcomes of the course unit (module)	Teaching and learning methods	Assessment methods
- Able to think systematically, analytically and critically, assessing scientific and professional information, its availability and reliability, selecting priorities and using resources efficiently, drawing reasonable conclusions, assessing the impact of decisions on the organisation's activities and the trends in the development of advanced technologies;	Lectures, seminars, discussion, problem-based learning, independent work.	Test (closed type questions), individual or group tasks and projects assignments.
- Through effective communication, they will be able to identify and assess the links between information systems and business decision modelling, the specifics of big data management information systems, and provide solutions and/or recommendations to problems.	Lectures, seminars. Active learning methods (group discussion; case study and analysis in group).	
- Will be able to initiate, design and carry out verification of information systems, implement decision-making using tools of artificial intelligence systems, and analyse data flows to ensure the success of a business organisation;	Lectures, seminars, case study, individual and group (team) project.	
- Will be able to model and manage information systems to improve business performance using data mining techniques and the advanced technologies.	Lectures, seminars, discussion, problem-based learning, independent work.	

Content: breakdown of the topics	Contact hours							Self-study work: time and assignments		
	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/work placement	E-learning	Contact hours	Self-study hours	Assignments
1. The relationship between the information society and advanced technologies. The impact of information society development for business information systems, e-business and e-commerce.	4		2					6	13	Reading of scientific sources (No. 1, according to the list of compulsory reading and 1 according to the list of recommended literature), performance of tasks, case study.
2. The role and place of <i>Disruptive Technologies</i> in the context of information systems development. The relationship between <i>Disruptive Technologies</i> , Internet of Things, Cyber Physical Systems and the <i>Industry 4.0 and 5.0</i> and their impact on business transformation.	6		3					9	14	Reading of scientific sources (No. 2, 3 according to the list of compulsory reading and 1 according to the list of recommended literature), performance of tasks, case study.
3. Information systems development and transformation, development of information systems and improvement in the context of <i>Big Data</i> management.	4		2					6	13	Reading of scientific literature (No. 3 and 4 according to the list of recommended literature), performance of tasks, case study.
4. The impact of WEB 1.0, WEB 2.0, WEB 3.0, WEB 4.0 technologies for business solutions and consumers.	6		3					9	14	Completion of individual or group theoretical-practical tasks related to the analyzed topic, case study (No. 2, 3 according to the list of compulsory reading and 1 according to the list of recommended literature).
5. Development of information systems in the context of cyber security threats' management. Application of information systems to the development of financial technologies ( <i>FinTech</i> ), electronic documentation ( <i>LegalTech</i> ) and e-government solutions ( <i>GovTech</i> ).	6		3					9	14	Completion of individual or group theoretical-practical tasks related to the analyzed topic, case study (No. 3, 4, 7 according to the list of compulsory reading).
6. Fundamental technologies of electronic signature and electronic identification, main principles of operation of the systems and fundamental security aspects, peculiarities of their application in business. Infrastructure of electronic signature, electronic signature trust service providers, types of electronic signatures, electronic signature key technologies ( <i>private</i> and <i>public</i> ), certificates, symmetric and asymmetric encryption of electronic signatures.	6		3					9	14	Completion of individual or group theoretical-practical tasks related to the analyzed topic, case study (No. 5, 6, 7 according to the list of compulsory reading).
Total	32		16					48	82	

Assessment strategy	Weight, %	Deadline	Assessment criteria
Case study	50%	During the semester	10 tasks, for each attested task students receive 10%. 100%: 10 tasks attested; 90%: 9 tasks attested; 80%: 8 tasks attested; 70%: 7 tasks attested; 60%: 6 tasks attested, 50%: tasks attested, 40%: 4 tasks attested, 30%: 3 tasks attested, 20%: 2 tasks attested, 10%: 1 task attested.
Test	50%	Examination Session	The test consists of 20 closed-ended questions of different complexity, each correct answer is evaluated by 0.5 points. Evaluated as follows: 10: Excellent knowledge and skills: 19-20 correct answers. 9: Very good knowledge and skills: 17-18 correct answers. 8: Good knowledge and skills: 15-16 correct answers. 7: Average knowledge and skills: 13-14 correct answers. 6: Satisfactory knowledge and skills: 11-12 correct answers. 5: Weak knowledge and skills: 9-10 correct answers. 4: Unsatisfactory assessment of knowledge and skills, poor understanding of the essence of the taught discipline after the course: 7-8 correct answers. 3: Poor assessment of knowledge and skills, after listening to the course the student does not understand the essence of the taught discipline: 5-6 correct answers. 2: Very poor assessment of knowledge and skills, after listening to the course the student does not understand the essence of the taught discipline: 3-4 correct answers. 1: Completely poor assessment of knowledge and skills, after listening to the course the student does not fully understand the essence of the taught discipline: 1-2 correct answers.
Exam evaluation by extern: case study (50%) (10 tasks performed individually), test (50%).			

Author	Year of publication	Title	Issue of a periodical or volume of a publication	Publishing place and house or web link
<b>Compulsory reading</b>				
Cataldo, A., Astudillo, A. C., et al.	2020	Towards an Integrated Maturity Model of System and E-Business Applications in an Emerging Economy	Volume 15, No. 2	Elsevier, internet website: <a href="http://dx.doi.org/10.4067/S0718-18762020000200102">http://dx.doi.org/10.4067/S0718-18762020000200102</a>
Limba, T., Stankevičius, A., Andrulevičius, A.	2019	Industry 4.0 And National Security: The Phenomenon Of Disruptive Technology.	Volume 6, No. 3	Entrepreneurship and Sustainability Issues, internet website: 1528-1535. <a href="https://doi.org/10.9770/jesi.2019.6.3(33)">https://doi.org/10.9770/jesi.2019.6.3(33)</a>
Singh, S., Singh, N.	2015	Internet of Things (IoT): Security Challenges, Business Opportunities & Reference Architecture for E-commerce	-	IEEE, internet site: <a href="https://doi.org/10.1109/ICGCIoT.2015.7380718">https://doi.org/10.1109/ICGCIoT.2015.7380718</a>
Sepashvili, E.	2020	Digital Chain of Contemporary Global Economy: E-Commerce through E-Banking and E-Signature	Volume 11, No. 3.	Business and Management Sciences International Quarterly Review, internet website: DOI: 10.13132/2038-5498/11.3.239-249
Fang, W., Chen, W., et al.	2020	Digital Signature Scheme for Information Non-repudiation in	-	Springer, internet website:

		Blockchain: a state of the art review		<a href="https://doi.org/10.1186/s13638-020-01665-w">https://doi.org/10.1186/s13638-020-01665-w</a>
Bralic, V., Stancic, H.	2020	A Blockchain Approach to Digital Archiving: Digital Signature Certification chain preservation	-	Emerald, internet wesite: DOI 10.1108/RMJ-08-2019-0043
Limba, T., Driaunys, K., Sidlauskas, A.	2021	Use of Cookies after GDPR: a Case Study of Top Lithuanian Websites	Vol. 20, No. 3	Transformations in Business & Economics, internet wesite: <a href="https://www.lituanistika.lt/content/97969">https://www.lituanistika.lt/content/97969</a>
<b>Supplementary reading</b>				
Sigfusson, T., Chetty S.	2013	Building International Entrepreneurial Virtual Networks in Cyberspace	Volume 48, Issue 2	Elsevier, internet wesite: <a href="https://doi.org/10.1016/j.jwb.2012.07.011">https://doi.org/10.1016/j.jwb.2012.07.011</a>