COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Information Technologies	2022 02 10

Lecturer(s)	Department(s) where the course unit (module) is delivered
Coordinator: A**ssoc. Prof. dr.** Mindaugas Krutinis, **Lecturers:** asst. dr. Michail Kazimianec, lect. Andrej Gavrilov, asst. dr. Gediminas Rumšas	Faculty of Economics and Business Administration Sauletekio ave. 9, II building, LT 10222 Vilnius

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

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

Requirements for students
Prerequisites: Management, Global Marketing

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

The goal of the Information Technologies subject is to make students familiar with modern information and communication technologies and build understanding of their purpose, role and architecture. The subject builds an ability to anticipate and adjust to changing business conditions, especially to those related to the application of information technologies within professional activities. In addition, the subject helps to develop understanding of the business development peculiarities.

Learning outcomes of the course unit (module)	Teaching and learning methods	Evaluation methods
Student will learn classification of information technologies and information systems	Traditional or interactive lecture, discussion, case study, problem-based learning, collaborative learning, mapping of ideas (thoughts) and concepts, role-plays, individual and group (team) project, written paper	Test, problem-solving task (report), test, report (oral illustrated, poster), report (practice, project), individual and project work assessment
Student will be able to analyse data using MS Excel and MS Access software		
Student will learn how to model, query and store data in a database as well as will know main data management principals		
Student will build an understanding of how various types of information systems are applied in modern organizations		

Content: breakdown of the topics	Contact hours							Self-study work: time and assignments	
	Lectures	Tutorials	Seminars	Exercises	Laboratory	Internship/work	Contact hours	Self-study hours	Assignments
Introductory lecture. **Data and information:** definitions, differences and examples. Data processing types. Data management and data management challenges in organization. Data value and lifecycle. Data quality. Role of information in decision making. Decision types and application in organization management. Decision making model. Business rules and business rules application for business processes.	2						**2**	**2**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (1. Information Systems in Global Business Today)
Building of dynamic information reports and summary tables using given datasets.			12				**12**	**8**	Build dynamic reports and summary tables in MS Excel Delivery 1. MS Excel exercise
Information systems (IS) concept. IT investment strategic goals. IS as an interface for organization, technology and management. Information value chain.	2						**2**	**8**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (3. Information Systems, Organizations, and Strategy)
Business processes and types of information systems (transactional, information management, decision support, etc.). Examples of enterprise data management systems. Enterprise software for teamwork and collaboration.	2						**2**	**8**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (3. Information Systems, Organizations, and Strategy)
Business requirements specification for IT tool.			2				**2**	**4**	Gather IT tool business requirements Delivery 2.1 Business and business requirements specification
IT infrastructure (ITI) evolution. Main ITI components. Modern trends for hardware and software platforms: „Green" IT, open-source software, SOA, web services, etc.	2						**2**	**8**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (5. IT Infrastructure and Emerging Technologies)
Databases and information management. File organization concept. Traditional file environment management problems. Database (DB) and database management system (DBMS) concepts. Relational DB. NOSQL DB. DB design and entity-relationship model. Big data and business intelligence infrastructure. Modern analytical technologies and tools. Data and information quality and security improvement policies.	2						**2**	**4**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (6. Foundations of Business Intelligence: Databases and Information Management; 8. Securing Information Systems)
Database building principles, creating entity-relationship diagrams.			4				**4**	**8**	Create E-R diagram and DB relational model Delivery 2.2. E-R diagram
Enterprise data management systems and applications. Supply chain management (SCM) system. Push-based and pull-based SCM models. Internet-based supply chain.	2						**2**	**4**	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (9. Achieving

Topic							Notes
Customer relationship management (CRM) system. Operational and analytical CRM.							Operational Excellence and Customer Intimacy: Enterprise Applications)
User interface development seminar: interface development principals and technics, meeting business requirements and ensuring data quality.		2			2	8	Design and implement user interface within the project work
Simple and complex database query development (without application of programming skills)		12			12	12	Implement DB queries and generate reports Delivery 2.3 Final group DB project
e-Commerce. Unique Internet features as of the commercial platform. Types of e-commerce: B2C, B2B and C2C. e-Commerce business and revenue models. Marketing and data analytics in e-commerce. International data exchange standard. Private industrial network, e-hubs. m-Commerce and geolocation services.	2				4	4	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (10. E-commerce: Digital Markets, Digital Goods)
Global IS development: goals, tasks, technological and management challenges. Global IS development strategy.	2				4	4	Literature study, preparation for lecture: Management Information Systems: Managing the Digital Firm, 17th Edition (15. Managing Global Systems)
Total	16	32			48	82	

Assessment strategy	Weight, %	Deadline	Assessment criteria
Test	40%	End of semester	Evaluated in proportion of test points collected. The test consists 20 closed questions. The test is solved using closed book method. A 10-point scale is used for evaluation: 90-100% or 10 (excellent); 80-89% or 9 (very good); 70-79% or 8 (good); 60-69 percent or 7 (average); 50-59% or 6 (satisfactory); 45-49% or 5 (weak). Less than 44 percent. (unsatisfactory) when the minimum requirements are not met: 4, 3, 2, 1.
Delivery 1. MS Excel exercise	20%	Mid-semester	Performance of MS Excel tasks without errors is evaluated (100% of tasks performed without errors equals the highest grade - 10), tasks and their weights are evaluated: - Business financial model task (50% weight); - Dynamic reports (20% by weight); - Summary tables (10% by weight); - Goal formulas (10% weight); - Other formulas (10%). If the work is not submitted by the deadline set during the introductory lecture, the evaluation of the work is reduced by 2 points. For delays of more than a week, the grade is reduced by an additional 2 points for each additional week of delay.
Delivery 2. Group DB project	25 %	Till end of semester, according to timetable agreed on first lecture	The work result - database is evaluated (100% is equal to the highest evaluation - 10), according to the following criteria: - Business description and needs specification (7.5%). The chosen topic must be clearly described: the activities computerized, the purpose of the IT tool being developed set, at least 5 queries specified and at least 2 reports specified. - Preparation of the ER scheme (15%): all entities required to implement the needs in specification must be provided; correctly established connections according to the needs and specifics of the business problem solved; selected appropriate attributes, primary keys;

			- Implementation of the relational model of the database (7.5%): the model must comply with the ER scheme; relations should be implemented correctly using foreign keys; - Implementation of the user interface (15%): the user interface must be sufficient to enter all needed data, the interface must be as user-friendly as possible and correspond to the processes IT tool servers; the user interface must minimize the need for manual entry; - Execution of queries (22.5%): specified queries must be implemented, they must return correctly processed data, be as detailed as described in the business needs specification; - Realization of reports (7.5%): the design of the report must comply with the needs in specification; the reports must be as detailed as described in the business needs specification, the data for the reports must be processed correctly; - Presentation of the work (25%): clarity and consistency of the presentation: selected topic, business needs specification, ER scheme and completed project work. The evaluation of the group work is distributed to the group members according to the evaluations of the group members' contributions (performed by the group members and the lecturer). Individual assessment does not differ by more than 20% from the overall assessment of group work. If the work is submitted late (or a part of it) within the deadline set during the introductory lecture, the evaluation of the work is reduced by 2 points. For delays of more than a week, the grade is reduced by an additional 2 points for each additional week of delay.
Delivery 3 Individual DB project	15%	End of semester	Personal skills developed during group work are assessed. A minimal database solution is prepared according to the given conditions. Evaluation criteria (100% equal to the highest evaluation - 10) are awarded according to the exact tasks performed in the terms of reference according to the following topics: - Database structure (9%): tables created, primary keys defined, relationships established. - User interface (30%): forms created, backgrounds set, buttons implemented, automatic data entry, select lists and subforms used. - Query Creation (35%): Created queries that calculate amounts, calculate averages, and filter data. - Reporting (26%): report compiled, filtering, grouping, sorting and summarizing data.
The assessment strategy for an external exam	**Weight, %**	**Deadline**	**Assessment criteria**
Test	50%	End of semester	Evaluated in proportion of test points collected. The test consists 20 closed questions. The test is solved using closed book method. A 10-point scale is used for evaluation: 90-100% or 10 (excellent); 80-89% or 9 (very good); 70-79% or 8 (good); 60-69 percent or 7 (average); 50-59% or 6 (satisfactory); 45-49% or 5 (weak). Less than 44 percent. (unsatisfactory) when the minimum requirements are not met: 4, 3, 2, 1.
Delivery 1. MS Excel exercise	20%	End of semester	Performance of MS Excel tasks without errors is evaluated (100% of tasks performed without errors equals the highest grade - 10), tasks and their weights are evaluated: - Business financial model task (50% weight); - Dynamic reports (20% by weight); - Summary tables (10% by weight); - Goal formulas (10% weight); - Other formulas (10%).

			If the work is not submitted by the deadline set during the introductory lecture, the evaluation of the work is reduced by 2 points. For delays of more than a week, the grade is reduced by an additional 2 points for each additional week of delay.
Individual project No 3	30%	End of semester	Personal skills are assessed. A minimal database solution is prepared according to the given conditions. Evaluation criteria (100% equal to the highest evaluation - 10) are awarded according to the exact tasks performed in the terms of reference according to the following topics: - Database structure (9%): tables created, primary keys defined, relationships established. - User interface (30%): forms created, backgrounds set, buttons implemented, automatic data entry, select lists and subforms used. - Query Creation (35%): Created queries that calculate amounts, calculate averages, and filter data. - Reporting (26%): report compiled, filtering, grouping, sorting and summarizing data.

Author	Year of publication	Title	Issue of a periodical or volume of a publication	Publishing place and house or web link
Compulsory reading				
Laudon, K.C.; Laudon, J.P.	2022	Management Information Systems: Managing the Digital Firm (17th Edition) 17th Edition	ISBN-13: 9780136971542	Pearson
Frick, E.	2019	Information Technology Essentials Volume 1: Introduction to Information System	ISBN-10: 1708175148	Amazon Digital Services LLC - KDP Print US
Supplementary reading				
Hush, John	2020	Computer Networking for Beginners: The Complete Guide to Wireless Technology, Network Security, Computer Architecture and Communications Systems.	9798616306913	Independently Published
Rob, P.; Coronel C.; Crockett K.	2010	Database Systems: Design, Implementation & Management		London, UK: Cengage Learning, 2010
Bendoley, E.	2013	Excel Basics to Blackbelt. An Accelerated Guide to Decision Support Designs.		New York, NY: Cambridge University Press