COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Business Intelligence	

Lecturer(s)	Department(s) where the course unit (module) is delivered
Coordinator: prof. dr. Dalia Krikščiūnienė **Other(s):**	Vilnius University Institute of Mathematics and Informatics Akademijos str. 4 LT-08663 Vilnius

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

Mode of delivery	Period when the course unit (module) is delivered	Language(s) of instruction
face-to-face	4th semester	Lithuanian / English

Requirements for students	
Prerequisites: Statistical Data Analysis Methods	**Additional requirements (if any): -**

Course (module) volume in credits	Total student's workload	Contact hours	Self-study hours
5	133	50	83

Purpose of the course unit (module): programme competences to be developed		
The purpose of the course unit is to develop fundamental knowledge, skills and techniques for analyzing business data, applying statistical and management science models to gain insights for more precise business decisions. The concepts learned should help to think critically about data and the analyses based on those data, as well as, to identify opportunities in which business analytics can be used to improve performance and support important decisions.		
Learning outcomes of the course unit (module)	**Teaching and learning methods**	**Assessment methods**
Ability to perform tasks (to choose and apply appropriate techniques, methods and IT tools for business data analysis to support decision making, critically asses data and analysis with that data) independently and in a team, to find and to present solutions related with business needs of information for decision support.	Lectures (problem-based teaching), active teaching methods (case studies, brainstorming, group discussions, and simulations), research methods (search for information, empirical analysis, and preparation for presentation), individual and group work.	Evaluation of final exam, participation in discussions, individual and group assignments and their presentation.
Ability to give an opinion related with business analytics and decision support in enterprises reasonably, logically and smoothly; will be able to present ideas in a critical, logical and constructive way while dealing with the technology community and non-IT experts.		
Ability to analyse domain factors, collect and ethically asses information.		
Ability to adapt methods and best practices for solving problems related with data analysis for supporting business solutions, to organize and schedule work activities.		
Ability to decide on design of structures and databases needed for business analytics, execute management tasks and consider improvements.		

Content: breakdown of the topics	Contact hours							Self-study work: time and assignments	
	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/work	**Contact hours**	**Self-study hours**	**Assignments**
1. **Introduction to Business Analytics**. Concept of business analytics. Value creation. The stages of analytics lifecycle of a company. Types of business analytics. Domains of Business analytics. Developing of business analytics model.	2		1				**3**	**6**	Literature study, participation in discussions, individual and group tasks and presentation of results.
2. **Business Data Management and Data issues.** Big Data features. Data Warehouse. Multivariate Data Analysis. Online analytical processing. Data mining process.	4		2				**6**	**10**	Study of related material, analysis of case studies, individual and group tasks and presentation of results
3. **Business Analytics at Strategic Level.** Link Between Strategy and the Deployment of business analytics. Strategy and Business analytics. Scenarios. Prioritizing of Information.	4		2				**6**	**8**	Literature study, analysis of case studies, individual and group tasks, presentation of results, and participation in discussions.
4. **Customer Relationship Analytics**. Customer Analytics. Marketing and Sales Analytics. Customer Service Analytics. Interaction Channel Analytics.	4		2				**6**	**8**	Literature study, analysis of case studies, individual and group tasks, presentation of results, and participation in discussions.
5. **Accounting and Financial Analytics.** Financial statement data and non-financial metrics. Working Capital Management**.** Cost Management Analytics**.** Resource Planning. Future financial scenarios.	4		2				**6**	**8**	Study of related literature and practical examples, analysis of case studies, individual and group tasks, presentation of results and participation in discussions.
6. **Product Lifecycle Analytics.** Product Structuring**.** Concurrent Costing**.** Target Costing**.** Lifecycle Profitability Analytics**.** Product Change Analytics.	4		2				**6**	**10**	Literature study, analysis of case studies, individual and group tasks, presentation of results, and participation in discussions.
7. **Operation Analytics**. Supply Chain Analytics. Future demand uncertainties. Outcomes of competing policy choices. Risk analysis.	4		2				**6**	**8**	Literature study, analysis of case studies, individual and group tasks, presentation of results, and participation in discussions.
8. **Human Resource Analytics**. Personnel Planning. Employee Turnover Analytics. HR Benchmarking. HR Balanced Scorecard. Target Monitoring in Management by Objectives.	4		2				**6**	**10**	Study of recommended literature and practical examples, individual and group tasks, presentation of results, participation in discussion.
9. **Communicating Business Analytics Results.** Presentation techniques of qualitative information. Data visualization. Context, insight, and interpretation.	2		1				**3**	**5**	Literature study, analysis of case studies, individual and group tasks, presentation of results, and participation in discussions.
Exam		2					**2**	**10**	Literature review
Total	**32**	**2**	**16**				**50**	**83**	

Assessment strategy	Weight,%	Deadline	Assessment criteria
Active participation during the course	10	During the semester	1 point: actively participates in discussions, formulates questions to colleagues, provides a critical approach to the cases and questions analysed, presents and gives reasonable

			explanations of given solutions and proposals during all the course. If actively participates in a part of the course, the score is reduced respectively. 0 points: no active participation in the discussions during the course.
Assessment of individual and group tasks	30	During the semester	3 points - presents all individual and group tasks, is able to properly adapt and explain the methods of analysis, respond to the problematic issues and questions, make reasoned proposals. The final evaluation is the average mark of students' executed tasks. Each task is assessed in the system of 10 points.
Exam	60	During exam session	The exam consists of various complexity open and closed questions to assess students' abilities to analyse, present and adopt the study materials. During the exam the student must obtain at least 5 points out of 10 to meet the minimum requirements.

Author	**Year of publication**	**Title**	**Issue of a periodical or volume of a publication**	**Publishing place and house or web link**
Compulsory reading				
Sharda R., Delen D., Turban E.	2013	Business Intelligence: A Managerial Perspective on Analytics	3rd ed.	Harlow: Pearson Education
Gert H.N. Laursen, Jesper Thorlund	2010	Business analytics for managers: taking business intelligence beyond reporting		Wiley
D. Loshin	2013	Business intelligence: the savvy manager's guide	2nd ed.	Science Direct
Optional reading				
L. Maisel, G.Cokins	2013	Predictive Business Analytics: Forward Looking Capabilities to Improve Business Performance		SAS, Wiley
R.Sharda et al.	2014	Business intelligence: a managerial perspective on analytics	3rd ed.	Pearson
Rimvydas Skyrius	2016	Business information: needs and satisfaction		Santa Rosa: Informing Science Press
Kimberly Nelson	2015	Business Intelligence, Strategies and Ethics		Nova Science Publishers
Jean Paul Isson, Jesse S. Harriott.	2016	People analytics in the era of big data: changing the way you attract, acquire, develop, and retain talent		Wiley
Gert H.N. Laursen	2011	Business analytics for Sales and Marketing Managers: How to Compete in the Information Age		Wiley
E. Siege	2013	Prediction Effect: How Predictive Analytics		Wiley

		Revolutionizes the Business World		
Frank Buytendijk	2010	Dealing with Dilemmas: Where Business Analytics Fall Short		Wiley
Marco Meier, Werner Sinzig, Peter Mertens	2005	Enterprise Management with SAP SEM™/ Business Analytics	2nd ed.	Springer
J. Ledolter	2013	Data mining and business analytics with R		Wiley