RTU Course "Business Intelligence Technologies II"

22000 Faculty of Engineering Economics and Management

General data

Code	IVZ883
Course title	Business Intelligence Technologies II
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Leonards Budņiks
Academic staff	Tatjana Celmiņa
Volume of the course: parts and credits points	1 part, 6.0 credits
Language of instruction	LV, EN
Annotation	This course helps to gain all needed skills and competencies for analysis and consolidation of a company data. After this course students will be able to use MS Excel and Power BI tools for analysis of business processes, develop data models for business and build visualizations on top of them. Will better understand the role of data and information in optimization and automation of internal and external business processes. Course paper is written on a topic proposed by a student, based on a guideline prepared by the teaching stuff. Course paper is aimed to consolidate knowledge that was acquired in previous course “Business intelligence technologies I” and “Business intelligence technologies II”.
Goals and objectives of the course in terms of competences and skills	The goal of the subject is to teach students to use MS Excel and Power BI tools for solving various data analysis challenges. After the course students are - raise awareness of the data sources of the enterprise; - develop capacity to consolidate multiple data sources. - develop capacity of algorithmising companies processes; - develop capacity to create a data model from available data sources - develop capacity to apply the capabilities provided by MS Excel and Power BI to visualize calculations - develop capacity to make proposals based on the results of the developed data model.
Structure and tasks of independent studies	During the course students will participate in 12 laboratory works that are divided in three blocks, after each block there is a test, parallel to class activities they write a course paper. For those who are not satisfied with semester results there is an option of taking exam.
Recommended literature	Rob Collie. DAX Formulas for PowerPivot : A Simple Guide to the Excel Revolution Holy Macro! Books, 2012 Kasper de Jonge. Dashboarding and Reporting with Power Pivot and Excel : How to Design and Create a Financial Dashboard with PowerPivot – End to End Holy Macro! Books, 2014 Puls K., Escobal M.. M is fo (Data) Monkey FL : Holy Macro! Books, 2015 Cole Nussbaumer Knaflic. Storytelling with Data : A Data Visualization Guide for Business Professionals John Wiley & Sons, Incorporated, 2015 Sherman, Rick. Business intelligence guidebook : from data integration to analytics /Rick Sherman ; foreword by Claudia Imhoff. Amsterdam : Elsevier, ©2015., xxiii, 525 lpp. : il. Sabherwal, Rajiv. Business intelligence : practices, technologies, and management /Rajiv Sabherwal, Irma Becerra-Fernandez. Hoboken, NJ : Wiley, ©2011., vii, 295 lpp. : il. ; 23 cm. Vercellis, Carlo.. Business intelligence : data mining and optimization for decision making /Carlo Vercellis. Chichester, U.K. : Wiley, 2009., xviii, 417 lpp. : il. ; 24 cm.
Course prerequisites	Students need to understand business economics, have to have knowledge in higher math and statistics

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
Extraction, Transfomation and Loading of a data (Theory)	8	10	2	8
Extraction, Transfomation and Loading of a data (Practice)	8	12	8	22
Testing	6	9	3	12
Data models and visualization in Power BI (Theory)	16	10	2	8
Data models and visualization in Power BI (Practice)	16	24	8	22
Preparation to the course paper	10	31	9	56
Total:	64	96	32	128

Learning outcomes and assessment

Learning outcomes	Assessment methods
Students are able to use data sets for business analysis	Laboratory work in computer class 1st through 4th 1st Test

Students are able to analyze data sets using MS Excel Pivot Table tool	Laboratory work in computer class 5th through 8th 2nd Test
Students are able to perform data mining using MS Excel BI tools	Laboratory work in computer class 9th through 12th 3rd Test
Students are able to use acquired knowledge	Course paper

Evaluation criteria of study results

Criterion	%
12 laboratory works in computer class	28
3 Tests	42
Course paper	30
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	6.0	2.0	2.0	0.0		*	