

RTU Course "Computer Science (basic course)"**22000 Faculty of Engineering Economics and Management****General data**

Code	IV0070
Course title	Computer Science (basic course)
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Jana Eriņa
Academic staff	Leonards Budņiks Aleksandrs Filipovs Vladislavs Minkevičs Marija Dobkeviča Jeļena Jevsjukova Eduards Rēns Lāsma Lēruma
Volume of the course: parts and credits points	1 part, 4.0 credits
Language of instruction	LV, EN
Annotation	Fundamental concepts of information. Computers and their types. Text editors. Program Word. Logical functions. Concept and structural scheme of an algorithm. Use of algorithms in problem solving. Program MathCad. Mathematical calculations - statistical processing of data. Approximation, assessment of errors, forecast, optimization. Resolution of problems by applying MathCad. Presentation of the laboratory work using Powerpoint.
Goals and objectives of the course in terms of competences and skills	The goal of the subject is to teach students to use MS Office (MS Excel, MS Word, MS PowerPoint) in document creation and its formatting, processing and visualization, as well as its presentation.
Structure and tasks of independent studies	12 laboratory works and 3 tests must be performed
Recommended literature	Alexander, M., Kusleika, D.. Excel 2016 formulas John Wiley & Sons, Incorporated, 2016 Alexander M., Walkenbach J.. Excel Dashboards and Reports John Wiley & Sons, Incorporated, 2013 Knaflig, C. N.. A Data Visualization Guide for Business Professionals John Wiley & Sons, Incorporated, 2015 Richard J. Roiger. Data Mining : A Tutorial-Based Primer Second Edition CRC Press LLC, 2016 Han J., Kamber M., Pei J.. Data Mining: Concepts and Techniques Elsevier Science & Technology, 2011 Gary B. Shelly, Misty E. Vermaat.. Microsoft Office 2007: Introductory Concepts and Techniques 2nd international edition South-Western, Division of Thomson Learning, 2009. Verschuuren, Gerard. Excel 2013 for scientists FL : Holy Macro! Books, 2014 Winston, Wayne L.. Microsoft Excel 2010 : data analysis and business modeling Indianapolis, IN : Wiley, 2013
Course prerequisites	Mathematics and informatics at the secondary school level.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
MS Word tools, FEEM formatting guidelines for study and graduate papers (theory)	4	4	2	8
MS Word tools, FEEM formatting guidelines for study and graduate papers (1st test)	4	4	2	8
Data input in tables, formulas (lab. work)	3	3	1	4
Charts and data visualization (lab. work)	3	3	1	4
Work with mathematical functions (lab. work)	3	3	1	4
Work with logical functions (lab. work)	3	3	1	4
Work with text, date and time functions (lab. work)	3	3	1	4
2nd test	3	3	1	4
Excel tables and basic lookup (lab. work)	3	3	1	4
Data lookup with INDEX, MATCH functions (lab. work)	3	3	1	4
Pivot Table tool. Basics (lab. work)	3	3	1	4
Pivot Table tool. Advanced reports (lab. work)	3	3	1	4
Programming in MS Excel environment I (lab.)	3	3	1	4
Programming in MS Excel environment II (lab.)	3	3	1	4
3rd Test	2	2	1	4
Data processing, data role in entrepreneurship, theoretical classes	14	14	7	28
Total:	60	60	24	96

Learning outcomes and assessment

Learning outcomes	Assessment methods
Can use MS Word capabilities, are informed and understands FEEM formatting guidelines for study and graduate papers	1st Test
Understands and can use basic Ms Excel features and functions - cell formatting, data types, mathematical, logical, date, time, text functions	1st Test 2nd test Laboratory works 1 till 7
Understands and can build different reports using Ms Excel tools and functions - lookup functions, Pivot table tool. Can record a macro, edit macro, build user defined function and form	3rd test Laboratory works 8 till 12

Evaluation criteria of study results

Criterion	%
Laboratory works 1-12	40
Tests 1-3	60
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	4.0	20.0	0.0	40.0		*	