Šibenik University of Applied Sciences

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DEPARTMENT OF MANAGEMENT

PROFESSIONAL GRADUATE STUDY MANAGEMENT

Erasmus+ Course Catalogue

Academic year 2024-2025

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Full Course Curricula

1. GENERAL INFORMATION			
1.1. Course lecturer	Ana Perišić	1.8. Course code in ISVU	130477
1.2. Course title	**Statistics**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(45+30+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	Graduate Study Programme Management	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	1st	1.13. Modernization	Yes
1.7. Credit score (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □

2. COURSE DESCRIPTION		
2.1. Course objectives	Provide theoretical and practical knowledge which enables students to develop and apply acquired skills for economic-statistical analysis.	
2.2. Terms of course entry and required competences	4 year secondary education completed; qualification level 4.2 according to the CROQF.	
2.3. Learning outcomes on the study programme level	LO 4: To analyze and interpret key business trends and innovations in the micro and macro business environment and propose innovative solutions and tactics of innovation in business. LO 5: To use probabilistic models for different discrete and continuous stochastic phenomena, assess population parameters, set statistical hypotheses, conduct tests and basic statistical analyses with support of computer tools LO 7: To apply and valorize qualitative and quantitative methods of business decision-making in solving economic and managerial problems through program support LO 10: To select a research method, conduct market research and interpret the results of the research carried out	
2.4. Expected learning outcomes on the course level	**Learning outcomes** according to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering,* *2- understanding,* *3- application,*

		4-analysis, 5-evaluation, 6-synthesis
	1. To independently prepare and carry out basic statistical analysis (exploratory and inferential) for business problems by using MS Excel.	6,4
	2. To explain basic concepts and to solve basic problems in the field of probability theory.	2,3
	3. To select and apply probability models for different discrete and continuous stochastic phenomena	5,3
	4. To estimate population parameters (point and interval estimates) and derive conclusions about the population.	5,4
	5. To set the statistical hypothesis, conduct the statistical test and derive conclusions about the population.	6, 5,3,4
	6. To perform correlation and regression analysis, to comment the results and to draw a conclusion about the relationship between variables	3,5

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
1.	Introduction into the course and detailed plan. Data collection. Exploratory analysis. Population, sample, variable, parameters.	- 1	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations. Attending lectures. Actively involving students through problem solving and discussion.	Students will independently prepare a project where they will have to prepare and carry out basic statistical analysis (exploratory and inferential) for business problems by using MS Excel.	1 h 4h 7 h
2.	Descriptive statistics. Measures of central tendency, measures of dispersion, asymmetry measures, kurtosis, standardized values, Chebyshev's rule.	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will independently prepare a project where they will have to prepare and carry out basic statistical analysis (exploratory and inferential) for business problems by using MS Excel.	5h 7h
3.	Sample space. Probability. Probability space. Conditional probability. The law of total probability	2	Attending lectures. Actively involving students through problem solving and discussion.	Students will explain basic concepts and solve basic problems in the field of probability theory through colloquia or written/oral exams.	5h 7h

4.	Sample space. Probability space. Probability. Conditional probability. The law of total probability	2	Attending lectures. Actively involving students through problem solving and discussion.	Students will explain basic concepts and solve basic problems in the field of probability theory through colloquia or written/oral exams.	5h 7h	
5.	Random variable. Discrete and continuous distributions. Expectation, variance. Discrete random variables and their applications. Binomial, Poisson, hypergeometric and uniform distribution.	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will select and apply probability models for different discrete and continuous stochastic phenomena through colloquia or written/oral exams.	5h 7h	
6.	Continuous distribution. Gaussian distribution.	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will select and apply probability models for different discrete and continuous stochastic phenomena through colloquia or written/oral exams.	5h 7h	
7.	Two-dimensional random variable. Marginal distribution. Independence. Conditional distribution. Covariance. Correlation coefficient. Exam preparation.	2,3,6	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	Students will explain basic concepts and solve basic problems in the field of probability theory, they will select and apply probability models for different discrete and continuous stochastic phenomena through colloquia or written/oral exams. As a part of their practical project, students will perform correlation and regression analysis, comment the results and draw a conclusion about the relationship between variables.	5h 7h	
8.	Sampling. Sampling distribution for the sample mean, proportion and variance.	4	Attending lectures. Actively involving students through problem solving and discussion.	Students will estimate population parameters (point and interval estimates) and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
9.	Sampling. Sampling distribution for the sample mean, proportion and	4	Attending lectures. Actively involving students through	Students will estimate population parameters (point and interval estimates)	5h 7h	

		variance. Estimating the mean, proportion and standard deviation. Confidence intervals.		problem solving and discussion.	and derive conclusions about the population through colloquia or written/oral exams.		
	10.	Hypothesis testing. Sample size, significance level. Hypothesis testing for the mean proportion, variance.	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
	11.	Hypothesis testing. Hypothesis testing for the mean proportion, variance.	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
	12.	Comparing population parameters. Hypothesis testing. Comparing population means, proportions.	4, 5	Attending lectures. Actively involving students through problem solving and discussion.	Students will estimate population parameters (point and interval estimates) and derive conclusions about the population and set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
	13.	Comparing population parameters. Hypothesis testing. Comparing population means, proportions.	4, 5	Attending lectures. Actively involving students through problem solving and discussion.	Students will estimate population parameters (point and interval estimates) and derive conclusions about the population and set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
	14.	Non-parametric tests	5	Attending lectures. Actively involving students through problem solving and discussion. Group problem	Students will set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	

				solving and discussion. Exam preparation.			
	15.	Regression analysis. Final conclusions. Exam preparation.	6	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.	As a part of their practical project or through written/oral exam, students will perform correlation and regression analysis, comment the results and draw a conclusion about the relationship between variables.	5h 7h	

3. EVALUATION OF STUDENTS` WORK

3.1. Students` obligations	In accordance with the Regulations on Studying and the Regulations on Student Assessment and Evaluation: for all full-time students attendance of at least 70%. Part-time students are required to attend classes at least 50%. All students are required to carry calculator and formulae list. Students who have during the course achieved: • from 0 - 24,9% ECTS credits- are rated F (unsuccessful) and cannot obtain ECTS credits, and must re-enroll in the next academic year; • from 25 - 49,9% - are assessed by FX (insufficient) and must pass the written exam (test). Written exam (test) can be held in a regular or extraordinary exam period; • more than 50% - students have the right to take the final exam. Students can take the final exam from the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and through two colloquia); b) by passing the exam (written and oral part of the exam). Students will prepare a project where they will independently carry out statistical analysis for business problems by using MS Excel.					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	0,3	Written exam	3,5 (without colloquia)	Project	1
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0,5
	Colloquium	3,5 (without written exam)	Seminar paper		Other	
	Class activity	0,2	Oral exam	0,5	Other	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 75 hours 2. Preparing colloquia or exams through individual work105 hours					

4. GRADING SYSTEM

4.1. Grading seminar papers	

4.2. Grading colloquia/ written and oral exam

Unsatisfactory	Satisfactory	Above average
Responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supported with examples. Finds solutions that were not originally given. Notes correlations with related material.

4.3. Final grade according to evaluation elements

During the semester, students have the possibility to partially take written exams through colloquia (twice during the semester). In order to have access to the oral exam, students need to achieve at least 50% on each colloquium. Also, students have a possibility to retake one colloquium. Students who did not pass at least one colloquia (or retaken colloquia) need to take part in the written exam. In this case, in order to have access to the oral exam, students need to achieve at least 50% on written exam. Students will prepare a project where they will independently carry out statistical analysis for business problems by using MS Excel. The final grade is formed after the oral exam by aggregating scores achieved through the written exam/colloquia, oral exam, their project and during classes.

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

5.1. Compulsory literature (available in the library and via other media)

Title	Number of copies in the library	Availability via other media
Šošić I., Primijenjena statistika, Školska knjiga, Zagreb, 2004. (chapters 1-12)	12	No
Patrick R. McMullen, Poslovna statistika za stručne studije [prijevod Devčić,K., Perišić,A.], Veleučilište u Šibeniku, 2017	-	Yes

5.2. Additional literature (at the moment of changes and/or amended of study programme)	Azcel A. Sounderpandian J., Complete Business Statistics, McGraw Hill, 2009. Newbold P., Statistics for Buisness and Economics , Englewood Cliffs: Prentice Hall , 1997 Čižmešija M., Kurnoga Živadinović N., Zbirka riješenih zadataka iz osnova statistike,Mirorad d.o.o., Zagreb,2006 Dumičić K., Bahovec V., Poslovna Statistika, Element, Zagreb, 2011. Excel manuals Teaching materials
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

2. GENERAL INFORMATION			
1.1. Course lecturer	Anita Grubišić	1.8. Course code in ISVU	
1.2. Course title	**Cost managemet**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	Guest lecturers	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	30 P + 15 P
1.4. Study programme (specialist, undergraduate, graduate)	Specialisr graduate	2.10.1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Optional	2.11.1.12. Number of course revisions	2
1.6. Year of study	1	1.13. Modernization	Yes
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □
2. COURSE DESCRIPTION			
2.1. Course objectives	Cost management in enterprises, cost schedule and carriers, and recording costs and expenditures by classic and contemporary methods of calculation.		
2.2. Terms of course entry and required competences	No conditions		
2.3. Learning outcomes on the study programme level	To individually and responsibly search relevant literature for reaching solutions and conclusions in Croatian and foreign languages. To analyze business environment, distinguish the company's competitive advantages and propose different business strategies to achieve the company's goals To analyze and interpret key business trends and innovations in the micro and macro business environment and propose innovative solutions and tactics of innovation in business To apply and valorize qualitative and quantitative methods of business decision-making in solving economic and managerial problems through program support To suggest decisions on production, operations, flows, capacities, costs and processes using analysis and monitoring of achieved indicators and results		

2.4. Expected learning outcomes on the course level	

Learning outcomes accroding to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering, 2- understanding, 3- application, 4-analysis, 5-evaluation, 6-synthesis*
Evaluate how managers use accounting information to create value in organizations.	4,5
Explain how the costs are presented in the financial statements.	4,5
Understand the assumptions and limitations of CVP analysis.	3,4
Understand the reasons for the estimation of fixed and variable costs, and explain how the basic cost system works.	5,6
Understand Ethical Issues in Business Costs.	
Analyze the accounting choice between FIFO, LIFO and weighted average cost.	
Compare the cost of products based on activities with traditional methods.	
Understand the role of the budget in the organization's overall plans.	

2.5. Course content according to detailed curriculum schedule

Number	**Thematic unit**	**LO of the course**	**Content/teaching method**	**Evaluation**	**Duration**
16.	Introductory lecture. Place, role, content, function of managerial accounting.	1,2,3,4	They listen to a lecture and read literature. They work on their own and in team workouts.	On the written and oral exam they define the basis of internal calculation.	8
17.	Education for Accounting Profession.Informatization of internal calculation.	1,2,3,4	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to distinguish between types of expenses.	8
18.	Costs. Cost classification.	1,2,3,4	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to analyze and evaluate the costs and the way of recording and monitoring the costs.	8
19.	Accounting cost tracking.	1,2,3,4	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to apply cost calculation.	8
20.	Costs in internal accounting.	4,5,6	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to evaluate and synthesize the features of classic and modern cost calculations.	8

	21.	Particularities of classical and modern cost accounting.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	On the written and oral exam they know how to evaluate and synthesize the impact of inventory methods on business results.	8
	22.	Influence of inventory conversion method to business result	4,5,6	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to evaluate and synthesize the business plan of the company.	8
	23.	Contents and design of a company's business plan.	4,5,6	They listen to a lecture and read literature. They work on their own and in team workouts.	In both the written and oral exam, they can evaluate and synthesize accountability accounting and flexible budgeting.	8
	24.	Accountability and Flexible Budgeting.	4,5,6	They listen to a lecture and read literature. They work on their own and in team workouts.	They are able to evaluate and synthesize transfer prices and their implications in written and oral examinations.	8
	25.	Accounting standards and reporting harmonization. Transfer prices and their accounting and tax implications.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	.In the written and oral exam they know how to evaluate and synthesize cash flow management as a basis for short-term business decision-making.	8
	26.	nformation base for short-term business decision-making. Cash flow management.	4,5,6	They listen to a lecture and read literature. They work on their own and in team workouts.	On the written and oral exam they know how to evaluate and synthesize strategic accounting instruments.	8
	27.	Strategic Accounting. Instruments of strategic accounting.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to evaluate and synthesize information for long-term business decision-making.	8
	28.	Information base of long-term business decision-making.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to evaluate and synthesize public sector management accounting.	8
	29.	Public sector management accounting.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam they know how to evaluate and synthesize the application of cost management to the overall business of the company.	8
	30.	Repetition. Exam instructions. Signatures.	4,5,6,	They listen to a lecture and read literature. They work on their own and in team workouts.	In the written and oral exam, they know how to synthesize and evaluate - cost	8

					management methods, for example in practice.	

3. EVALUATION OF STUDENTS` WORK						
3.1. Students` obligations	Attendance (in accordance with the Rulebook on Studying) and the preparation of homework assignments are required for signature.					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	1	Written exam		Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	1
	Colloquium		Seminar paper	1	Other	
	Class activity	0,5	Oral exam	1	Otheer	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 3. Attending classes and exercises 45 hours 4. Preparing colloquia or exams through individual work 75 hours					

4. GRADING SYSTEM			
4.1. Grading seminar papers	-		
4.2. Grading colloquia/ written and oral exam	**Unsatisfactory**	**Satisfactory**	**Above average**
	Responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supported with examples. Finds solutions that were not originally given. Notes correlations with related material.

4.3. Final grade according to evaluation elements					
	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance	Max. Points
		4 points	7 points	10points	20 points
	Seminar paper				

Colloquia/ Written exam	2	3	4	5
	50-64,9%	65-79,9%	80-89,9%	90-100%
	41points	53 points	65 points	72 points
Oral exam	2	3	4	5
	9 points	12 points	15 points	18 points

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (satisfactory)	D
50 – 59,9%	2 (satisfactory)	E

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	1. grupa autora: Upravljačko računovodstvo, RIF, Zagreb, 2011.		YES
5.2. . Additional literature (at the moment of changes and/or amended of study programme)	1. Lanen, W.N. & Anderson, S.W. & Maher, M.W., Fundamentals of cost accounting, Third Edition, 2014, by The McGraw-Hill – PPP 2. Belak, V., Menadžersko računovodstvo, RRIF, Zagreb, 1995. 3. Grubišić, A.; Analiza poslovanja, skripta, Veleučilište u Šibeniku, 2010.	2	

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**Economics of information systems and software**	1.8. ISVU course code	
1.2. Lecturer	Frane Urem PhD prof	1.9. MOZVAG course code	
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+15+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	**specialist**	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	3rd – materials available On-line, 0%
1.5. Course status (obligatory, optional)	optional	1.12. Number of course revisions	1.
1.6. Study year	2	1.13. Modernization	■ yes □ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ■ More than 20 % □

2. COURSE DESCRIPTION	
2.1. Course objectives	Acquisition of knowledge from methodologies of development and economics of information systems
2.2. Terms of course entry and required competences	

2.3. Learning outcomes on the study programme level	LO1 To organize and lead team work, and critically judge the opinions and attitudes of team members	
	LO2 To individually and responsibly search relevant literature for reaching solutions and conclusions,	
	LO4 To analyze and interpret key business trends and innovations in the micro and macro business environment and propose innovative solutions and tactics of innovation in business	
	LO7 To apply and valorize qualitative and quantitative methods of business decision-making in solving economic and managerial problems through program support	
	LO17 To assess acceptability of an investment project based on economic-financial analysis made with the help of modern tools and techniques	
2.4. Expected learning outcomes on the course level	**Learning outcomes** towards Bloom's taxonomy: (up to two verbs per LO)	**LO Level:** *1. Recapture,* *2. Understanding,* *3. Application,* *4. Analysis,* *5. Evaluation,* 6. *Synthesis*
	1. Understand and be able to analyze the economic fundamentals of software	1,2
	2. Illustrate the software life cycle based on the available practical example	2,3,4,5,6
	3. Apply the concepts of risk and uncertainty related to the project in the field of information systems	2,3,4,5,6
	4. Implement methods of economic analysis of the introduction or change of the information system using best known practice	2,3,4,5,6
	5. Connect and interpret the engineering ("best possible") approach to problem solving	2,3,4,5,6

2.5. Course content according to detailed curriculum schedule	**Constructive alignment**					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**
	31.	Introduction to the course and detailed curriculum.	-			2 hours
		Introduction to information systems	2, 3, 4, 5, 6	Listening to lectures, working on a computer, reading literature.	At the midterm or the written and oral exam they define the basic concepts in object oriented programming. They describe the role of the information systems	6 hours
	32.	Preparation and content of the proposal for the execution of the	1,2,3	Students listen to lectures, work on the computer, read literature.	Interpret the concept of business information system. Identify the main	8 hours

		project in the field of information systems			parts of the information system proposal .	
	33.	Cash flow in the project, time value of money	1,2,3,4	Students listen to lectures, work on the computer, read literature	Define cash flow in the project . Identify sources of project funding . Identify project costs . Calculate project cash flow based on a case study .	8 hours
	34.	Comparison of different proposals for information systems that meet the technical specification	1,2,3,4	Students listen to lectures, work on the computer, read literature	Understand and be able to analyze the proposals for information system. Identify an proposals that meets the technical specification . Explain the importance of eco mic best proposals.	8 hours
	35.	Making a business decision regarding the procurement of an information system for a business organization	1,2,3,4	Students listen to lectures, work on the computer, read literature	Identify information resources in business. Identify the reasons that lead to the decision to procure an information system.	8 hours
	36.	Profit analysis for the acquisition or development of an information system	1,2,3,4	Students listen to lectures, work on the computer, read literature	Understand the feasibility analysis of a project in a for-profit environment. Interpret the basic concepts in the project budget (BAC, ETC, EAC). Calculate MAAR. Calculate the NPV for the procurement of the information system from the case study .	8 hours
	37.	Loss of information system value	1,2,3,4,5	Students listen to lectures, work on the computer, read literature	Calculate the loss of value for the information system.	8 hours
	38.	Non-profit analysis of the costs and benefits for the acquisition or development an information system	1,2,3,4,5	Students listen to lectures, work on the computer, read literature	Interpret the cost-benefit analysis in an information system project intended for a non-profit environment.	8 hours
	39.	Development and content of the offer for performing a software project	3,4,5	Students listen to lectures, work on the computer, read literature	Understand the content of the offer to perform a software project.	8 hours
	40.	Using risk assessment techniques	3,4,5	Students listen to lectures, work on the computer, read literature	Understand the concept of risk. Identify and quantify risks in a given information system project.	8 hours
	41.	Using uncertainty estimation techniques	3,4,5	Students listen to lectures, work on the computer, read literature	Understand the notion of uncertainty . Recognize uncertainties in a given information system project.	8 hours

	42.	Determining functional requirements for software . Determining non-functional software requirements	3,4,5	Students listen to lectures, work on the computer, read literature.	Define functional requirements for software. Determine the functional requirements for the software based on the given business problem. Define non-functional requirements for software. Determine non-functional software requirements based on a given business problem.	8 hours
	43.	Performance of information systems	3,4,5	Students listen to lectures, work on the computer, read literature	Assess the performance of a given information system.	8 hours
	44.	Multicriteria decision making in a software project	3,4,5	Students listen to lectures, work on the computer, read literature	Understand multicriteria decision making in a software project. Apply compensatory and non-compensatory decision-making methods in a given software project.	8 hours
	45.	Software maintenance	3,4,5	Students listen to lectures, work on the computer, read literature	Understand the importance of software maintenance. Define basic types of software maintenance. Estimate software maintenance costs from a given case study.	8 hours

3. EVALUATION OF STUDENT WORK

3.1. Students` obligations	In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper. Students who have during the course achieved: • From 0 – 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year; • From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; • More than 50% ECTS credits - students have the right to access the final exam of the subject. Students can take the final exam in the course in two ways: a) during the course of teaching through continuous monitoring of students (active participation in classes and exercises and two exams); b) during class (active participation in classes and exercises) and passing exams (written and oral examinations).					
3.2. Monitoring student work (enter the share of ECTS credits	Attendance	1	Written exam	1 (by submitting both colloquiums the student	Project	

for each activity so that the total number of ECTS points corresponds to the credit score of the course)				is relieved of an written examination)		
	Experimental work		Research		Practical work	1
	Essay		Report		Continuous examination	
	Colloquium	2 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper		Other (inscribe)	
	Class activities		Oral exam	1 (by submitting both colloquiums the student is relieved of an oral examination)	Other (inscribe)	

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

Commitment	***Hours (estimate)***
1. Attending classes	60
2. Practical work	30
3. Preparation for the Colloquium / exam through self-study	30

4. GRADING

4.1. Seminar paper grading

Valuation Element	**Poor**	**Satisfying**	**Above average**

4.2. Colloquium / exam grading

Poor	**Satisfying**	**Above average**
Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains the terms and concepts that it encapsulates.

				Find solutions that are not originally given. There is a correlation with correlative subjects.	
4.3. Creating a final grade according to evaluation elements	Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Created mental map. Solved case study.
		4 points	7 points	10 points	3 points
	Seminar paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Colloquium / written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Creating a final grade according to absolute allocation	Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT THE COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and through other media)	1. Peer-reviewed teaching materials on the e-learning system of VUŠ for the course: Software Engineering 2. F. Urem, IS Design and Analysis, Šibenik Polytechnic, 2016, ISBN: 978-953-7566-30-2 3. IEEE Software Engineering Body of Knowledge (SWEBOK)		Available online at e-learning system
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Bidgoli H.: Management Information Systems6, 4LTR Press,Cengage Learning, 2016. 2. J.O'Brien, G.Marakas: Menagement Information Systems, 7th ed., McGraw Hill, 2016.		Available online at e-learning system

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. information on the course and contact with the teacher	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no later than five working days from the receipt of e-mail).

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**Market research**	1.8. ISVU course code	187558
1.2. Lecturer	**Jelena Šišara,Ph.D**	1.9. MOZVAG course code	
1.3. Assistants and/or associates	None	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	**Specialist Study of Management**	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1.
1.6. Study year	1st	1.13. Modernization	■ yes □ no
1.7. Credit score (ECTS)	4	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ■ More than 20 % □

2. COURSE DESCRIPTION	
2.1. Course objectives	• Understanding the importance and necessity of market research when making business decisions. • Acquiring basic knowledge of market research methods and techniques. • Understanding the market research process. • Design of data collection instruments.

	• Applying the learned skills to a specific research project.	
2.2. Terms of course entry and required competences	Admission requirements for 1st year of study	
2.3. Learning outcomes on the study programme level	LO1:To organize and lead team work, and critically judge the opinions and attitudes of team members	
	LO2:To individually and responsibly search relevant literature for reaching solutions and conclusions,	
	LO3:To analyze business environment, distinguish the company's competitive advantages and propose different business strategies to achieve the company's goals	
	LO4:To analyze and interpret key business trends and innovations in the micro and macro business environment and propose innovative solutions and tactics of innovation in business	
	LO9:To select a research method, conduct market research and interpret the results of the research carried out	
2.4. Expected learning outcomes on the course level	**Learning outcomes** towards Bloom's taxonomy: (up to two verbs per LO)	**LO Level:** *7. Recapture,* *8. Understanding,* *9. Application,* *10. Analysis,* *11. Evaluation,* 12. *Synthesis*
	LO1:To explain and to comment basic concepts related to market research.	2, 4
	LO2:To define the research goal, problem and hypotheses, to select the types and sources of data and to design a research problem based on it.	1, 5, 6
	LO3:To propose appropriate market research methods and, on this basis, to construct a suitable data collection instrument addressed to a specific research problem.	6, 6
	LO4:To conduct market research addressed to a specific research problem, to interpret the results of the research conducted, and to propose a solution based on that.	3, 3, 6
	LO5: To present the results of the research	6
	1.	
	2.	
	3.	
	4.	

2.5. Course content according to detailed curriculum schedule	**Constructive alignment**					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**
	46.	Introduction to the course and a detailed performance plan	-	Listen to the lecture. On seminary teaching, by independent work on the computer students get acquainted with course content and documents on the e-learning course page.	-	5 hours
	47.	INTRODUCTION TO MARKET RESEARCH: THE TERM AND DEFINITION OF MARKET RESEARCH; THE ROLE AND IMPORTANCE OF MARKET RESEARCH IN BUSINESS RESEARCH	1, 2	They listen to lectures, solve case studies, discuss, problem papers, presentations of seminar work	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	7 hours
	48.	SCIENTIFIC METHOD AND ETHICS IN MARKET RESEARCH; ORGANIZERS AND BENEFICIARIES OF MARKET RESEARCH	1, 2	They listen to lectures, solve case studies, discuss, problem papers, presentations of seminar work	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	7 hours
	49.	MARKET RESEARCH PROCESS AND PROJECT	1, 2 ,3	They listen to lectures, solve case studies, discuss, problem papers, presentations of seminar work	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	8 hours
	50.	TYPES OF MARKET RESEARCH	1, 2, 3	They listen to lectures, solve case studies, discuss, problem	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit,	8 hours

				papers, presentations of seminar work	then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	
	51.	PRIMARY AND SECONDARY DATA, SAMPLES AND SAMPLING	1, 2, 3, 4	They listen to lectures, solve case studies, discuss, problem papers, presentations of seminar work	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	52.	DATA ANALYSIS AND INTERPRETATION, Colloquium I.	1, 2, 3, 4	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	53.	APPLICATION OF MARKET RESEARCH, RESEARCH FOR MARKET SEGMENTATION NEEDS	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	54.	APPLICATION OF MARKET RESEARCH, RESEARCH FOR PRODUCT DEVELOPMENT NEEDS	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours

	55.	RESEARCH FOR ADVERTISING AND SELLING NEEDS	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	56.	RESEARCH FOR PRICING AND SATISFACTION NEEDS	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	57.	MARK VALUE RESEARCH	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	10 hours
	58.	APPLICATION OF RESEARCH IN MAIN TOURISM AREAS	1, 2, 3, 4, 5	They listen to lectures, solve case studies, design and develop a research project.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	8 hours
	59.	PRESENTATIONS OF THE RESEARCH PROJECT	6	Present research projects, discussion.	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented	4 hours

					problem and propose a solution to the same problem.	
	60.	FINAL CONSIDERATIONS AND SIGNATURES, II. Colloquium		They listen to lectures, make conclusions, discuss	At the colloquium or the written and oral exam they define and explain the concepts that occur in this thematic unit, then they should present and analyze the same on a concrete example, critically judge on the basis of the presented problem and propose a solution to the same problem.	3 hours

3. EVALUATION OF STUDENT WORK

3.1. Students` obligations	In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper. Students who have during the course achieved: • From 0 – 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year; • From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period; • More than 50% ECTS credits - students have the right to access the final exam of the subject. Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, solving case studies, making and presenting the seminar paper and project, passing two colloquia); b) during the course (active participation in the lessons, solving case studies, creating and presenting the seminar paper and project) and passing the exam (written and oral exam).					
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	0,5	Written exam	0,5 (by submitting both colloquiums the student is relieved of an written examination)	Project	2
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	1 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper	0,5	Other (inscribe)	
	Class activities		Oral exam	0,5 (by submitting both colloquiums the student	Other (inscribe)	

				is relieved of an oral examination)		

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

Commitment	***Hours (estimate)***
4. Attending classes	60
5. Creating and Presenting seminar paper/project	30
6. Preparation for the Colloquium / exam through self-study	30

4. GRADING

4.1. Seminar paper grading

Valuation Element	**Poor**	**Satisfying**	**Above average**
Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another
Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical mistakes.	Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.	Sources are listed, but incomplete and with errors. The references are appropriate for the subject and show a satisfactory research attitude.	Sources are accurate, complete and consistent. The references are appropriate, their list is "rich" and comprehensive and shows a robust research approach.

4.2. Colloquium / exam grading

Poor	**Satisfying**	**Above average**
Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains the terms and concepts that it encapsulates.

				Find solutions that are not originally given. There is a correlation with correlative subjects.	
4.3. Creating a final grade according to evaluation elements	Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Seminal paper.
		2 points	4 points	7 points	3 points
	Research paper	2	3	4	5
		5 points	7 points	8 points	10 points
	Colloquium / written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Creating a final grade according to absolute allocation	Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
	90 – 100%	5 (excellent)	A
	80 – 89,9%	4 (very good)	B
	65 – 79,9%	3 (good)	C
	60 – 64,9%	2 (sufficient)	D
	50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT THE COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and through other media)	1. Marušić, M., Vranešević, T. (2001). *Istraživanje tržišta*. ADECO, Zagreb	1	
	2. Marušić, M., Prebežac, D. (2004). *Istraživanje turističkih tržišta*. ADECO, Zagreb	1	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	3. Meler, M. (2005). *Istraživanje tržišta*. Ekonomski fakultet u Osijeku, Osijek	0	

5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.
5.4. information on the course and contact with the teacher	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no later than five working days from the receipt of e-mail).

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**Financial Management**	1.8. ISVU course code	141499
1.2. Lecturer	Jelena Žaja, mag.oec., s. lec.	1.9. MOZVAG course code	
1.3. Assistants and/or associates		1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+0+0)
1.4. Study programme (specialist, undergraduate, graduate)	**Professional Graduate Study of Management**	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st – materials available On-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	2.
1.6. Study year	1st	1.13. Modernization	■ yes □ no
1.7. Credit score (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% ■ More than 20 % □

2. COURSE DESCRIPTION	
2.1. Course objectives	Introduce students with basic concepts of modern financial management through lectures, classroom discussions, business cases and project task solving so that after completing the course each student knows how to approach basic financial management issues and where to look for additional information to solve complex issues that appear in practice in everyday business. To introduce students to the concept of corporate finance, its role in the company's business and to expand their basic knowledge in the field of:

	• time preferences of money; • measurement of financial risk in function of capital cost; • money markets and capital markets, flows of funds in business processes and the interdependence of property and liabilities management and ways of financing them; • analysis of financial operations of business entities; • elements of financial and investment planning; • basis of financial efficiency of investment projects; • financing securities transactions with a special focus on bonds and shares and assessing the justification for investing in financial instruments in the money and capital market; • financing business with own capital; • fundamental laws of debt utilization, capital structure and dividend policy.	
2.2. Terms of course entry and required competences	No conditions.	
2.3. Learning outcomes on the study programme level	LO1. To apply and link economic terms in more complex written and oral communication.	
	LO2. To organize and lead team work, and critically judge the opinions and attitudes of team members.	
	LO3. To individually and responsibly search relevant literature for reaching solutions and conclusions.	
	LO6. To analyse and link basic concepts and apply content related to the area of economics, management, accounting, and finance.	
	LO7. To interpret business and financial reports and propose solutions to improve financial performance and profitability.	
2.4. Expected learning outcomes on the course level	**Learning outcomes** towards Bloom's taxonomy: (up to two verbs per LO)	**LO Level:** *13. Recapture,* *14. Understanding,* *15. Application,* *16. Analysis,* *17. Evaluation,* 18. *Synthesis*
	5. to define and categorize basic concepts and tasks of financial management,	1,4
	6. to measure the return and financial risk of the securities portfolio and analyse the relation between risk and return,	3,4
	7. to interpret the financial relations of the enterprise with the environment: population, state, foreign countries, financial institutions and the financial market,	4
	8. to explain the fundamental features and specifics of financial management in business entities,	4
	9. to evaluate the impact of financial leverage and on the profitability of business entities,	5

	10. to prepare an analysis of financial statements on the example of a business entity by performing horizontal and vertical analysis and analysis by financial indicators,	6
	11. to apply methods of net present value, return period, internal rate of return, profitability index, and assess the eligibility of investment in a project,	3,5
	12. to propose the application of appropriate models and evaluate the value of equity and debt securities,	6,5
	13. use materials and tools to search scientific and professional literature in Croatian and in English, and present accepted knowledge, ideas, problems and solutions independently and in the team.	3,6

	Constructive alignment					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**
2.5. Course content according to detailed curriculum schedule		Introduction to the course and a detailed performance plan.	-	Listen to the lecture. In the exercise classes, by independent work on computer students get acquainted with course content and documents on the e-learning course page.	-	2 hours
	61.	Introductory lecture - basic concepts and determinants of financial management.	1, 3, 9	Listen to the lecture and read the literature.	At the colloquium or the written and oral exam define the basic concepts of financial management. They know how to list and explain basic financial activities, sources of company assets and tasks of financial function in the company. They know how to explain the concept of time value of money and identify the basic variables in calculations of time value of money. Describe the basic characteristics of the financial market.	8 hours
	62.	Risk and financial management. Balance as a source of financial information.	1, 2,3, 9	Listen to the lecture and read literature. In the exercise classes, they calculate the yield and financial risk of the securities portfolio	At the colloquium or the written and oral exam they can explain the concepts of investment portfolio, financial risk and ways of managing risk. They know how to calculate the expected return, the	8 hours

				independently or in a team, and draw conclusions about the risk-return relationship.	standard deviation and the coefficient of variation for an individual security or a portfolio of securities and to evaluate the risk of investing on the basis of the relationship between risk and return. They know how to interpret the relationship between security yields and market returns. They know how to explain the concept of a balance sheet, its properties and indicate users of financial information.	
	63.	Financial reports.	1, 3, 9	Listen to the lecture and read the literature.	At the colloquium or the written and oral exam they can state the types of basic financial statements and explain their basic components. Know what can all be a source of cash in a business.	8 hours
	64.	Objectives, purpose and methods of analysis of financial reports.	1, 3, 6, 9	They listen to a lecture and read literature. In the exercise classes, independently on a computer, they perform horizontal and vertical analysis of financial statements on the example of a business entity's financial statements. They research the content of this thematic area and make a project assignment that presents the knowledge they have acquired and their ideas, and ways to solve problems.	At the colloquium or the written and oral exam they can explain the term financial analysis and specify and explain the methods of analysis of financial statements. They know how to explain horizontal and vertical analysis procedures and apply them to financial statement analysis. Created and presented project assignment (using computer programs).	12 hours
	65.	Indicators of financial analysis, examples and interpretations.	1, 5, 6, 9	They listen to a lecture and read literature. In the exercise classes, they calculate financial indicators and interpret the obtained results independently on a computer based on the financial statement of a business entity.	At the colloquium or the written and oral exam they can define and describe the types / groups of financial indicators and apply them in the analysis of financial statements (in the exam and in the preparation of the project assignment). They know how to sketch and interpret	14 hours

				They research the content of this thematic area and make a project assignment that presents the knowledge they have acquired and their ideas, and ways to solve problems.	Du Pont's indicator system and explain synthetic indicators. Created and presented project assignment (using computer programs).	
	66.	Rules and principles of financing, liquidity and solvency.	1, 5, 6, 9	They listen to a lecture and read literature. In the exercise classes, independently on a computer, they calculate financial indicators and interpret the obtained results based on the financial statements of a business entity.	At the colloquium or the written and oral exam they can define and describe the basic principles and rules of financing. They know how to explain the difference between the concepts of liquidity and solvency, explain the term financial leverage and judge when it is opportune to use it. They are able to identify internal and external causes of insolvency and propose measures to improve the solvency of companies. Created and presented project assignment (using computer programs).	10 hours
	67.	Short-term asset management.	1, 4, 9	They listen to a lecture and read literature. In the exercise classes, they calculate the value of working capital needed in the company.	At the colloquium or the written and oral exam they can define and describe the notion of working capital, permanent working capital, circular movement of working capital, factors on which the amount of working capital depends, management of working capital, inventory management and receivables management. They know how to analyze the structure of working capital and recommend the optimal size and structure of working capital in a particular company.	8 hours
	68.	Financial planning and methods of assessing the profitability of capital investments.	1, 7, 9	They listen to a lecture and read literature. In the exercise classes, independently on a computer, they apply the methods of capital investment assessment on an example of a financial	At the colloquium or the written and oral exam they can explain the term financial planning, cash control instruments. They know how to define the term investment and classify investments, identify the common characteristics of all investment projects and explain why the sensitivity	14 hours

				statement of a business entity and interpret the results obtained. They research the content of this thematic area and develop a project assignment that presents the knowledge they have acquired and their ideas, and ways to solve problems.	analysis of an investment project is done. They know how to explain commonly used methods of evaluating investment projects, apply them on an example, and make a decision on the profitability of investing in a particular project. Created and presented project assignment (using computer programs).	
	69.	Business banking and estimating creditworthiness of an enterprise.	1, 3, 9	They listen to a lecture and read literature, solve a case study.	At the colloquium or the written and oral exam they can determine the differences between the nominal, real and effective interest rates. They know how to predict the factors that influence interest rate formation in commercial banking. They can explain what the reference interest rates are. They know how to recommend criteria for determining a company's creditworthiness. They can explain what a 5C method is in determining creditworthiness.	8 hours
	70.	Securities, promissory notes and checks.	1, 3, 9	They listen to a lecture and read literature.	At the colloquium or the written and oral exam they know how to define and describe the basic securities that circulate in the money market. They know how to explain ways of transferring securities. They can explain the terms compensation, cession, assignment, debt assumption.	8 hours
	71.	Financial insurance and short term financing.	1, 3, 5, 9	They listen to a lecture and read literature.	At the colloquium or the written and oral exam they can state the types and forms of financing of the company according to the availability of sources, identify differences between credit and equity financing. They know how to explain the four methods and techniques of short-term bank lending, the relative advantages and disadvantages of bank loans, and the factors that determine the	8 hours

					amount of trade credit from the point of view of the debtor and creditor.	
	72.	Mid-term and long-term financing - concepts and practical application.	1, 3, 5, 9	They listen to lectures and read literature, handle case studies.	At the colloquium or the written and oral exam they can define and describe the characteristics of medium and long-term credit. They can explain what leasing financing is (the concept and types of leasing, the advantages and disadvantages of leasing financing); identify differences between operating and financial leasing and recommend when to use what type of leasing.	8 hours
	73.	Characteristics and specifics of financial management in hotel business entities.	1, 4, 9	They listen to a lecture and read literature. A case study is handled in the exercise classes.	At the colloquium or the written and oral exam they know how to define and describe the specifics of the hotel service and the hotel business and how these special features of the hotel business affect its financing. They know how to identify the particularities of the analysis of financial indicators in the hotel industry and explain the indicators that measure the efficiency of utilization of available capacity in the hotel industry.	8 hours
	74.	Equity financing.	1, 5, 9	They listen to a lecture and read literature.	At the colloquium or the written and oral exam they can determine the structure of the financial capital of a joint stock company, they can indicate their own and external sources of equity of a joint stock company and explain the way of financing a business with own funds. They know how to explain the notion of non-nominal and nominal capital of a joint stock company, and evaluate the benefits of financing with own capital.	8 hours
	75.	Securities financing.	1, 2, 8, 9	They read the literature and prepare individually for the exam.		8 hours

		Concluding Considerations / Repeating and Preparing for Exam.				40 hours

3. EVALUATION OF STUDENT WORK

3.1. Students` obligations

In accordance with the Book of Rules and the Rulebook on Student Assessment and Evaluation: for all regular students attend at least 70% attendance. Part-time students have the obligation to attend at least 50% of lectures. All students must create, present and positively colloquy seminar paper.

Students who have during the course achieved:

- From 0 – 24,9% ECTS credits- is rated F (unsuccessful) and cannot get ECTS credits and must re-enrol the subject in the next academic year;
- From 25 – 49,9% ECTS credits - is rated FX (inadequate) and has to come out and pass the test (exam). A written exam can be held in a regular or extraordinary exam period;
- More than 50% ECTS credits - students have the right to access the final exam of the subject.

Students can pass the final exam in two ways: a) during the course through continuous student attendance (active participation in the lessons, solving case studies, making and presenting the project and passing two colloquia); b) during the course (active participation in the lessons, solving case studies, creating and presenting the project) and passing the exam (written and oral exam).

3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)

Attendance	1	Written exam	2,5 (by submitting both colloquiums the student is relieved of an written examination)	Project	
Experimental work		Research		Practical work	
Essay		Report		Continuous examination	
Colloquium	4,5 (by submitting both colloquiums the student is relieved of a written and oral examination)	Seminar paper	0,5	Other (inscribe)	
Class activities		Oral exam	2 (by submitting both colloquiums the student is relieved of an oral examination)	Other (inscribe)	

3.3. Student workload

The student's workload on all bases amounts to 1 ECTS point for 30 hours of work per semester and is estimated as:

Commitment	***Hours (estimate)***
7. Attending classes	60
8. Seminar paper	15
9. Preparation for the Colloquium / exam through self-study	105

4. GRADING

4.1. Seminar paper grading

Valuation Element	Poor	Satisfying	Above average
Organization	The paper is not organized in a logical order and its structure is lacking.	The paper is well structured with a clear distinction between the introduction, the main part of the text and the conclusion.	The paper is well-structured with a clear distinction between the introduction, the main part of the text and the conclusions that are perfectly logically linked to one another
Terminology, writing style	Words and phrases are low harmonized with official terminology. Writing style is not appropriate, sentences are too long, modest vocabulary, and frequent and repeated grammatical mistakes.	Words and phrases are aligned with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and has little grammatical errors.	Words and phrases are aligned with official terminology and show an understanding of their meaning. The writing style is excellent, the sentences are clear and concise, the vocabulary is rich and there are no grammatical errors.
Quoting and referencing	Sources are not specified at all. The references do not match the topic and show a superficial approach to the research topic.	Sources are listed, but incomplete and with errors. The references are appropriate for the subject and show a satisfactory research attitude.	Sources are accurate, complete and consistent. The references are appropriate, their list is "rich" and comprehensive and shows a robust research approach.

4.2. Colloquium / exam grading

Poor	Satisfying	Above average
Give answer by memory, no deeper understanding. Does not know and does not apply the basic terms and concepts. Cannot apply or explain the contents of the course.	Reproduces basic terms, without difficulty transfers new knowledge, understands subject matter, explains the terms and the notions that substantiate by examples.	Knowledge is at the level of analysis, synthesis and evaluation. It observes legitimacy, accurately and thoroughly explains the content of the subject, and logically links and explains the terms and concepts that it encapsulates. Find solutions that are not originally given. There is a correlation with correlative subjects.

4.3. Creating a final grade according to evaluation elements

Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Solved case study.
	2 points	4 points	7 points	3 points
Project	2	3	4	5
	5 points	7 points	8 points	10 points
	2	3	4	5

	Colloquium / written exam	50-64,9%	65-79,9%	80-89,9%	90-100%
		25 points	30 points	35 points	40 points
	Oral exam	2	3	5	5
		25 points	30 points	35 points	40 points

4.4. Creating a final grade according to absolute allocation

Percentage of adopted knowledge, skills and competences (teaching + final exam)	Numerous grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
60 – 64,9%	2 (sufficient)	D
50 – 59,9%	2 (sufficient)	E

5. ADDITIONAL INFORMATION ABOUT THE COURSE

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and through other media)	1. Van Horne, J. C., Wachowicz, J.M. (2002). Fundamentals of Financial Management, Prentice Hall, Financial Times.		Available on-line
	2. Brealley, R., Myers, S., Marcus, A. (2008). Fundamentals of Corporate Finance. McGraw Hill, New York.		Available on-line
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Foerster, S. (2014). *Financial Management: Concepts and Applications*. Pearson, Boston.		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		

5.4. information on the course and contact with the teacher	It is obligatory for every student to regularly inform about the course, teaching and teaching activities. All information about teaching or any delay in teaching will be published on the e-learning pages of the course and on the web pages of the Polytechnic. Students can contact the teachers during the consultation term (at least one hour per week), while brief questions and explanations can be addressed during classes. It is possible to ask questions by e-mail (from the official e-mail address from the domain @ vus.hr) that will be answered in a short time (no later than five working days from the receipt of e-mail).

3. GENERAL INFORMATION			
1.1. Course lecturer	**Ivana Beljo dipl. ing. mat., univ. spec. oec.,**	1.8. Course code in ISVU	129870, 202133
1.2. Course title	**Quantitative methods for business decision-making**	1.9. Course code in MOZVAG	
1.3. Assistants and/or associates	dr.sc. Ana Perišić	1.10. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	(30+0+30+0)
1.4. Study programme (specialist, undergraduate, graduate)	Graduate Study Programme Management	1.11. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st, course materials are on-line, 0%
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	3.
1.6. Year of study	2nd	1.14. Modernization	Yes
1.7. Credit score (ECTS)	6	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X□ More than 20 % □

2. COURSE DESCRIPTION		
2.1. Course objectives	The objective of the course is for students, based on theoretical knowledge and case studies, to be trained to understand, recognize and apply various quantitative methods that are used as support in business decision-making.	
2.2. Terms of course entry and required competences	No conditions.	
2.3. Learning outcomes on the study programme level	LO2. To organize and lead team work, and critically judge the opinions and attitudes of team members. LO 5: To use probabilistic models for different discrete and continuous stochastic phenomena, assess population parameters, set statistical hypotheses, conduct tests and basic statistical analyses with support of computer tools LO6. To analyse and link basic concepts and apply content related to the area of economics, management, accounting, and finance. LO7: To apply and valorize qualitative and quantitative methods of business decision-making in solving economic and managerial problems through program support LO9. To interpret business and financial reports and propose solutions to improve financial performance and profitability.	
2.4. Expected learning outcomes on the course level	**Learning outcomes** according to the Bloom`s taxonomy: (up to two verbs per LO)	**Level of LO:** *1- remembering,* *2- understanding,* *3- application,*

		4-analysis, 5-evaluation, 6-synthesis
	1. Formulate a mathematical model for linear optimization problems.	6
	2. Apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	3, 5
	3. Choose the appropriate algorithm and solve the problem on network.	3, 4
	4. Design a model for project management and recommend optimal savings by cutting the duration of activities.	6, 5
	5. Propose optimal business decisions using dynamic programming methods.	5
	6. Design decision trees for decision evaluations and calculate information values.	6

2.5. Course content according to detailed curriculum schedule

Constructive allignement

no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
1	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.		2 h
2.	Formulate a mathematical model	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model.	4 h
3.	Linear and nonlinear programming	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model.	4 h
4.	Solving linear programming problems: The Simplex method	1	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model.	4 h
5.	Solving linear programming problems: The Excel Solver	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model using the excel solver.	4 h
6.	Postoptimality analysis	1, 2	Attending lectures. Actively involving students through	Students will formulate a mathematical model and apply computer tools in	4 h

			problem solving and discussion.	solving linear programming problems and recommend and valorize the solution through postoptimality analysis.		
7.	The Transportation problem.	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	4 h	
8.	The Assignment Problem	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	4 h	
9.	An Overview of Various Applications of Linear Programming Methods in Practical Examples. Exam preparation	1, 2	Attending lectures. Actively involving students through problem solving and discussion.	Students will formulate a mathematical model, apply computer tools in solving linear programming problems and recommend and valorize the solution through postoptimality analysis.	4 h	
10.	Network Optimization Models. The shortest-path problem. The minimum spanning tree problem. The maximum flow problem. The minimum cost flow problem.	3	Attending lectures. Actively involving students through problem solving and discussion.	Students will choose the appropriate algorithm and solve the problem on network.	4 h	
11.	Project Management with PERT/CPM	4	Attending lectures. Actively involving students through problem solving and discussion.	Students will design a model for project management and recommend optimal savings by cutting the duration of activities.	4 h	
12.	Dynamic Programming	5	Attending lectures. Actively involving students through problem solving and discussion.	Students will propose optimal business decisions using dynamic programming methods.	4 h	
13.	Decision Analysis. The Decision Tree	6	Attending lectures. Actively involving students through problem solving and discussion.	Students will design decision trees for decision evaluations and calculate information values.	4 h	
14.	Decision Analysis. Behavioral economics.	6	Attending lectures. Actively involving students through problem solving and discussion.	Students will design decision trees for decision evaluations and calculate information values.	4 h	

	15.	Final conclusions. Exam preparation.	1 - 6	Attending lectures. Actively involving students through problem solving and discussion. Group problem solving and discussion. Exam preparation.		4 h

3. EVALUATION OF STUDENTS` WORK						
3.1. Students` obligations						
3.2. Monitoring student work (enter the share of ECTS credits for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	0,5	Written exam	3,5 (without colloquium)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0,5
	Colloquium	4,5 (without written and oral exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	1 (without colloquium)	Other	
3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 1. Attending classes and exercises 60 hours 2. Preparing colloquia or exams through individual work120 hours					
4. GRADING SYSTEM						
4.1. Grading seminar papers						

4.2. Grading colloquia/ written and oral exam	**Unsatisfactory**	**Satisfactory**	**Above average**
	Responds by memory, without a deeper understanding. Does not know or apply basic terms and concepts. Does not know how to apply or explain the contents of the course with examples.	Reproduces the basic concepts and without difficulty imparts new knowledge, understands the material, explains the terms and concepts supported with examples.	Knowledge is at the level of analysis, synthesis and evaluation. Observes the principles, accurately and thoroughly explains the content of the material, and logically connects and explains the terms and concepts supported with examples. Finds solutions that were not originally given. Notes correlations with related material.

4.3. Final grade according to evaluation elements	Activities in class	Preparation for teaching units; Understanding previous content; Participation in solving tasks together 0 – 20 points
	Seminar papers	-
	Colloquium/written exam	Preparation/learning; Scoring and grading according to correct answers in the test. 0 – 80 points (min 40 points)
	Oral exam	Preparation/learning; additional verification of unachieved learning outcomes

4.3. Final grade according to absolute division

Percentage of acquired knowledge, skills and competences (teaching + final exam)	Numerical grade	ECTS grade
90 – 100%	5 (excellent)	A
80 – 89,9%	4 (very good)	B
65 – 79,9%	3 (good)	C
50 – 64,9%	2 (satisfactory)	D

5. ADDITIONAL COURSE INFORMATION

	Title	**Number of copies in the library**	**Availability via other media**
5.1. Compulsory literature (available in the library and via other media)	Neralić, L.: Uvod u matematičko programiranje 1, Zagreb, 2012. Hillier F., Lieberman G.: Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.	3	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	Lukač Z., Neralić L.: Operacijska istraživanja, Element 2013. Babić Z., Linearno programiranje, Sveučilište u Splitu , Split 2010.		
5.3. Quality assurance methods that ensure the acquisition of knowledge, skills and competences	The control of students' work quality and the acquisition of necessary knowledge and skills will be ensured through interactive work. By keeping track of attendance and student activity during classes and provided information on students` progress through short colloquiums and homework, information for further guidance to students will be provided in order to increase the efficiency of their work. Students will be informed about their rights and obligations as well as the methods of work and the required literature. Indicators of quality assurance system: Student survey, monitoring of annual data from the Croatian employment service on the annual state of student employment, surveys from employers and Alumni association.		
5.4. Informing about the course and contacting the teacher	It is the responsibility of each student to be regularly informed about the course, the coursework, and the classroom activities. All notices of classes or possible adjournment will be published in a timely manner on the e-learning site of the course and on the website of the Polytechnic. Students can contact teachers during the consultation period (at least one hour per week), while for short questions and explanations they can be contacted during		

	class. It is also possible to ask questions by e-mail (from the official e-mail address at @ vus.hr), which will be answered as soon as possible (no later than five working days after receiving the e-mail).