POLYTECHNIC OF ŠIBENIK

DEPARTMENT OF MANAGEMENT

SPECIALIST STUDY MANAGEMENT

Erasmus+ Course Catalogue

Academic year 2021-2022

Dean PhD Ljubo Runjić, college professor

Head of department Nikolina Gaćina, M.Eng., s.lec.

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Full Course Curriculums

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	

	Constructive allignement					
	no	**Thematic unit**	**LO of the course**	**Content/teaching methods**	**Evaluation**	**Time**
2.5. Course content according to detailed curriculum schedule	1.	Introduction into the course and detailed plan.	-	Attending lectures. Familiarize with course content, e-learning documents, literature and students' obligations.		1 h
		Data collection. Exploratory analysis. Population, sample, variable, parameters.	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.	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	5h 7h

	No.	Topic		Teaching methods	Learning outcomes	Hours	
	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.	phenomena through colloquia or written/oral exams. 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 variance. Estimating the mean, proportion and standard deviation. Confidence intervals.	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	
	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 solving and discussion. Exam preparation.	Students will set the statistical hypothesis, conduct the statistical test and derive conclusions about the population through colloquia or written/oral exams.	5h 7h	
	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 work 105 hours

4. GRADING SYSTEM

4.1. Grading seminar papers	

	Unsatisfactory	Satisfactory	Above average
4.2. Grading colloquia/ written and oral exam	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

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

1. GENERAL INFORMATION

1.1. Course lecturer	Želimir Mikulić	1.7. Credit score (ECTS)	6
1.2. Course title	**Business simulations**	1.8. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	45 L + 30 PE
1.3. Assistants and/or associates	-	1.9. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st level – learning materials are available online, 10% interactive tools and video lectures
1.4. Study programme (specialist, undergraduate, graduate)	Specialist professional graduate	1.10. Number of course revisions	
1.5. Course status (obligatory, optional)	Obligatory	1.11. Modernization	x
1.6. Year of study	2.	1.12. Percentage estimate of course changes and/or supplements	Less than 20% ☐ More than 20 % ☐

2. COURSE DESCRIPTION

2.1. Course objectives	The course is designed to introduce students with simulation modeling and its application in analyzing and shaping business processes. Simulation modeling allows the creation of dynamic business processes modeling, perform simulation experiments with the model and evaluate the performance of business processes.
2.2. Terms of course entry and required competences	Completed Statistics and Quantitative methods for business decision-making Collegium
2.3. Learning outcomes on the study programme level	To individually and responsibly search relevant literature for reaching solutions and conclusions. Use probabilistic models for various discrete and continuous stochastic phenomena, to estimate population parameters, set up a statistical hypothesis test and implement basic statistical analysis with the support of computer tools. Implement and evaluate the qualitative and quantitative methods for business decision-making in solving economic and managerial problems using software support. Interpret the process and modeling principle, choose discrete simulation from input data, and create and apply a simulation model using Sigma and Arena software packages, and tools such as Excell and ExpertFit. Identify various problems and risks in modern management and management and propose adequate solutions for identified problems and risk management mechanisms based on the analysis of the state of the company.
2.4. Expected learning outcomes on the course level	Students knows and classifies simulation systems as Monte Carlo, discrete, continuous or mixed. Students are able to develop a discrete simulation model for a given process or system and analyze its limitations. For the collected input data using a custom tool (ExpertFit and Excel),student will select appropriate distribution.

	For event driven processes or systems, they will identify system states, variables and events and examine the model in Sigma Programming Tool. They will be able to build a diagram of the system/process in the programming tool Arena and recommend parameters for performing simulations and present outputs. In the program tool Excel, for the purpose of behavioral analysis, will design simulation financial models with Monte Carlo simulations. Using output graphs (Excel) and animation (Arena) will be able to present output results. Analyze output outcomes, identify patterns, predict risks, and suggest optimal choice of parameters / decisions to manage business systems. By designing and implementing simulation models, it will be able to review existing solutions, evaluate proposed alternatives, and propose solutions.					

	LECTURES			**EXERCISES/LABS**		
	Week	Hour	Theme	Week	Hour	Theme
2.5. Course content according to detailed curriculum schedule	1	3	Introduction lecture, the basic idea of simulation. Construction of simulation models.	1	2	Introduction
	2	3	Construction of simulation models. Types of simulation.	2	2	Case study: Production Management
	3	3	Discrete and continuous simulations	3	2	Probability
	4	3	Strategy of performing simulation models on a computer	4	2	Random variables and their generation
	5	3	Conceptual simulation models, system event graphs	5	2	Input data analysis: estimation of distribution parameters
	6	3	Sigma simulation software	6	2	Use SIGMA to perform simulations on the event graph model
	7	3	Modeling of simple system graphs of events	7	2	Use SIGMA to perform simulations on the event graph model
	8	3	Basic elements of probability and statistics, generation and analysis of input data samples	8	2	Presentation of business simulation team papers
	9	3	Modeling of complex systems graph events. Specialized simulation packages.	9	2	ARENA simulation software
	10	3	Arena simulation software. Using animations.	10	2	ARENA simulation software
	11	3	Modeling of complex systems in the Arena	11	2	Simulations in Excel
	12	3	Ability to use the MS Excel program package to perform simulations.	12	2	Scenario, What-if Analysis, Monte Carlo simulations, Risk Analysis in Excel
	13	3	Ability to use the MS Excel program package to perform simulations.	13	2	Presentation of business simulation team projects
	14	3	Planning of performing and analyzing the output of simulation experiments.	14	2	Presentation of business simulation individual projects

15	3	System dynamics.	15	2	Presentation of business simulation individual projects

2.6. Teaching methods	x lectures □ seminars and workshops □ practical exercises □ distance education □ mixed e-learning □ field teaching	x independent tasks □ multimedia and network x laboratory □ mentoring □ other	2.7. Comments:

2.8. Students` obligations	Minimal attendance for full-time students is 70% of all lectures and exercises. Students who do not satisfy minimal attendance condition will not be allowed to the exam. Part time students can supplement attendance with regular consultations with lecturer on the be-weekly basis. It is strongly recommended that students take active part during lectures (in discussions, readings, rising questions, problem solving etc.) Part time students who will not be able to attend lectures regularly should contact lecturer in advance during consultation hours or via e-mail (zelimir.mikulic@vus.hr). It is duty of a student to inform itself about lectures on the daily basis. Notifications about possible changes will be sent to students via e-mail and posted on the web page of course e-learning site, together with all information about course, learning materials, assignments etc.

2.9. 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	1,5	Written exam		Project	2
	Experimental work		Research	0,5	Practical work	1,5
	Essay		Report		Continuous examination	
	Colloquium		Seminar paper	0,4	Other	
	Class activity		Oral exam	0,1	Other	

2.10. Grading and evaluating students` work during classes and on the exam	Students' activity in lectures are monitored, students team up a seminar (case study) that they represent and defend. In addition, three simulation projects are made. Projects are performed in the Excel program package using Palisade Decision Tools packages and educational versions of Sigma and Arena software packages. Students are performing and presenting the projects with their team, and individually defending them on the oral exam. Additionally, an oral exam tests the knowledge of using the MS Excel to create and analyze simulation studies.

2.11. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	LAW, Averill M., Simulation Modeling and Analysis, 4th ad., McGrow Hill, 2007	1	Yes
	VERSCHUUREN, Gerard, Excel Simulations, Holy Macro, 2014	1	Yes

	ČERIĆ, Vlatko, Simulacijsko modeliranje, Školska knjiga, Zagreb 1993.	5	No
	KELTON, D.W., SADOWSKY R.P., SADOWSKY, D., Simulation with Arena, 2nd McGrow Hill 2003	1	Yes
2.12. Additional litearature (at the moment of changes and/or amended of study programme)	LAGUNA, M., MARKLUND, J., Business Process Modelling, Simulation and Design, Prentice Hall, 2004. ROSS, Sheldon m., Simulation, 4th ed., Elsevier, 2006	1 1	No No
2.13. 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.		

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

	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*

2.4. Expected learning outcomes on the course level

	Level of LO
Evaluate how managers use accounting information to create value in organizations. Explain how the costs are presented in the financial statements. Understand the assumptions and limitations of CVP analysis. Understand the reasons for the estimation of fixed and variable costs, and explain how the basic cost system works. 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.	4,5 4,5 3,4 5,6

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

No.	Topic		Learning method	Assessment / Exam	
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 management methods, for example in practice.	8

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

5.1. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability 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).		

3. GENERAL INFORMATION

1.1. Course lecturer	doc. dr.sc. Dragan Zlatović, prof..v. š. dr. sc. Frane Urem, prof. v. š.	1.8. Course code in ISVU	
1.2. Course title	**Intellectual property and information systems**	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+0+15+0)
1.4. Study programme (specialist, undergraduate, graduate)	Specialist Professional Study	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	1.12. Number of course revisions	4
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	Students are trained for the self-use of industrial property law (Patent Law, Trade Marks Law, Industrial Design Law, Law on Geographical Designation , Law on the Protection of Topography of Semiconductor Products, Obligatory Relationship Act - provisions regulating the contract about a license). Students gain knowledge about the protection and disposal of industrial property rights. Further, students are trained to be able to independently present and explain the underlying criteria for distinguishing copyright and related rights, defining basic copyright institutions, describing and explaining the course of the copyright protection process. Students are trained to assess the violation of intellectual property rights in the contemporary intellectual capital of entrepreneurs and to link these rights to modalities and the advertising and marketing strategy. Students are trained to select the optimal model of software licensing in a business organization and realize the importance of ethical behavior in the use of information systems.
2.2. Terms of course entry and required competences	General conditions required for enrollment in II. semester. Understanding of fundamental concepts in the area of intellectual property and digital society.
2.3. Learning outcomes on the study programme level	➢ To organize and lead team work, and critically judge the opinions and attitudes of team members ➢ To individually and responsibly search relevant literature for reaching solutions and conclusions, ➢ 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 valorize and apply basic legal institutions in business environment

	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*
2.4. Expected learning outcomes on the course level	1.Interpret and analyze the intellectual property right, and the relationship with other branches of law.	4
	2.Categorize individual forms of industrial property (patent, trademark, industrial design, geographic origin, topography, trade name, unfair competition, know-how) and distinguish author's works by type and copyright and related rights	4
	3.Use different databases on legal sources, jurisprudence and relevant legal literature when preparing a decision on various legal issues	4
	4.Composition of submissions in industrial property rights protection procedures and drafting of individual contracts on the use of industrial property rights and copyrights and related rights, in particular contracts applicable to the information society	5
	5.Identify basic forms of computer piracy	6
	6.Categorize and use the terms of the electronic signature and the certificate	5
	7.Synthesize and showcase practical licensing software issues	5

Constructive allignement

	no	Thematic unit	LO of the course	Content/teaching methods	Evaluation	Time
2.5. Course content according to detailed curriculum schedule	31.	Introduction to the course and detailed curriculum	-	Listen to a lecture and get to know the course content and documents on the e-learning course page by working independently on a computer.	-	3 h
		Introduction to Intellectual Property Rights (concept, development, legal sources)	1, 2	Listen to a lecture and read literature.	At the colloquium or the written / oral examination students can define the basic concepts of IPR law.	5 h
	32.	Industrial property rights - signs of distinction (trademark, industrial design)	1-5	Listen to a lecture and read literature.	At the colloquium or the written / oral exam students can show the protection of trademarks and industrial design.	1 0 h

	33.	Industrial property rights - signs of distinction (trade name, geographic origin, semiconductor product topography, unfair competition	1-5	Listen to a lecture and read literature.	At the colloquium or the written / oral exam, students can identify and classify sources of the other sign of distinction and their protection	8 h	
	34.	Industrial property rights - patent law	1-5	Listen to a lecture and read literature. At the exercises on practical examples students analyze registration forms for IPR	At the colloquium or the written / oral examination, students can shaw registration of patent under national law and international and EU law	10 h	
	35.	Industrial property rights - trade secrets and know-how	1-5	Listen to a lecture and read literature. At the exercises students deal with the protection of trade secret under TRIPS Agreement and EU directive.	At the colloquium or written / oral exam know show and explain the „soft law" of IPR	10 h	
	36.	Industrial Property Rights - merchanidising, sponsorship, GDPR	1-5	Lsten to a lecture and read literature. At the exercises students analyze the different types of merchandising (character, personal etc.) and GDPR.	At the colloquium or the written / oral exam students can distinguish and explain the „soft law" of IPR	10 h	
	37.	Copyright and Related Rights - copypright, content, restrictions, collective and individual protection, copyright contracts	1-5	Lsten to a lecture and read literature. At the exercises students analyze the copypright protection under international, EU and national level	At he colloquium or written / oral exam students know show and explain the specific position of copyright under IPR	10 h	
	38.	Assignment and Protection of Intellectual Property Rights - licenses, franchises, cases, civil and criminal protection	1-5	Lsten to a lecture and read literature. At the exercises students analyze protection of IPR. At the excercise students address the relevant case law of national courts	At he colloquium or written / oral exam students know show and explain the different models of assignment of IPR. At the colloquium or the written / oral examination, students can explain the direct effect and substantiate this with relevant examples from the case law of the national courts.	10 h	
	39.	Licensing Software	1, 2, 7	Listen to a lecture and read literature. At the exercises students address the relevant case law of the Eanalyze different kind of software licences..	At the colloquium or the written / oral examination, students can show and write some software licence sin practical area.	10 h	
	40.	Trademarks and patent rights for software products	1-7	Listen to a lecture and read literature. At the exercises analyze examples of state liability for damages in EU law.	At the colloquium or the written / oral exam, students can identify and enumerate cases where the state is liable for damages under EU law.	10 h	
	41.	Copyright for software products	1-7	Listen to a lecture and read literature. At the exercises students discuss the reasons for establishing an EU common market.	At the colloquium or the written / oral examination, students can explain the reasons for establishing the EU Common Market and define the concepts of positive and negative integration.	10 h	
	42.	Software piracy	3, 5-7	Listen to a lecture and read literature. At the exercises students address the relevant case law of the European Court of Justice regarding the protection of IPR	At the colloquium or the written / oral examination, students can explain the direct effect and superiority of European law and substantiate this with relevant examples from the case law of the European Court of Justice.	8 h	
	43.	Code of professional ethics and the rules in using licensed software	5-7	Listen to a lecture and read literature. At the exercises students analyze	At the colloquium or the written / oral examination, students can explain specific rules of ethical using licensed products	8 h	

44.	Registration and urgent infringement procedure, how to apply to the national bodies, courts and European Court of Justice	1-7	Listen to a lecture and read literature. At the exercises students analyze relevant examples from the case law of the national bodies and courts European Court of Justice and practice preparing applications to the European Court of Justice.	At the colloquium or the written / oral exam students can explain the purpose of the registration and infringement procedure and show the course of the procedure.	8 h
45.	Application of EU law in the legal order of the Republic of Croatia	1-7	Listen to a lecture and prepare individually for the exam. At the exercises students study the constitutional and legal norms that apply to the application of EU law in the field of IPR in the legal order of the Republic of Croatia.	At the colloquium or the written / oral examination, students can define the obligations of the Member States as well as the regulatory authorities regarding the application of EU IPR law in the legal order of the Republic of Croatia.	20 h

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 three colloquia); b) by passing the exam (written and oral part of the 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		Written exam	2,5 (without colloquia)	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	
	Colloquium	5,5 (without written exam)	Seminar paper		Other	
	Class activity	0,5	Oral exam	3 (without colloquia)	Other	

3.3. Student workload	Student workload on all bases for 1 ECTS credit is 30 hours in a semester and is estimated as: 5. Attending classes and exercises 60 hours 6. Preparing colloquia or exams through individual work 90 hours

4. GRADING SYSTEM

	The evaluation element	Unsatisfactory	Satisfactory	Above average
4.1. Grading seminar papers	Organization	The paper is not organized in a logical order and lacks structure.	The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion.	The paper is well structured with a clear distinction between the introduction, the main body of the text and the conclusion, which are logically interconnected.
	Terminology, writing style	Words and expressions low in line with official terminology. The writing style is not appropriate, the sentences are too long, of a modest vocabulary and with frequent and repeated grammatical errors.	Words and expressions are in line with official terminology. The writing style is appropriate, the sentence structure is clear, the vocabulary is appropriate and there are few grammatical errors.	Words and expressions 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.
	Citing and referencing references	The sources are not listed at all. The references do not fit the topic and show a cursory approach to exploring the topic.	The sources are listed but incomplete and with errors. The references are relevant to the topic and show a satisfactory research attitude.	The sources are accurately, completely and consistently listed. The references are appropriate, their list is "rich" and comprehensive and shows a detailed research approach.

	Unsatisfactory	Satisfactory	Above average
4.2. Grading colloquia/ written and oral exam	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.

	Active course attendance	70-75% of attendance	76-86% of attendance	87-100% of attendance	
4.3. Final grade according to evaluation elements		3 points	5 points	10 points	
	Colloquia/ Written exam	2	3	4	5
		50-64,9%	65-79,9%	80-89,9%	90-100%

		27 points	33 points	39 points	45 points
	Oral exam	2	3	5	5
		27 points	33 points	39 points	45 points

4.4. 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
	CORNISH, William / LLEWELYN, David, Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights, London, Sweet & Maxwell, 2019, 9. ed.		

| 5.2. Additional literature (at the moment of changes and/or amended of study programme) | TRITTON, Guy / DAVIS, Richard / QUINTIN, Thomas St., Intellectual Property in Europe, London, 5.ed, 2020. GRUNEN, Richard S., Intellectual Property and Digital Content, Vol.1., EE Publishing, 2013. | | |

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

	Constructive alignment					
	No:	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**
2.5. Course content according to detailed curriculum schedule	46.	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
	47.	Preparation and content of the proposal for the execution of the project in the field of information systems	1,2,3	Students listen to lectures, work on the computer, read literature.	Interpret the concept of business information system. Identify the main parts of the information system proposal .	8 hours
	48.	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

	49.	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
	50.	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
	51.	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
	52.	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
	53.	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
	54.	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
	55.	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
	56.	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
	57.	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

	58.	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
	59.	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
	60.	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 for each activity so that the total number of ECTS points corresponds to the credit score of the course)	Attendance	1	Written exam	1 (by submitting both colloquiums the student is relieved of an written examination)	Project	
	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	Numerous grade	ECTS grade	

competences (teaching + final exam)		
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).		

PK-SP-2. Description of a new course an amended and/or changed or modernized course.

1. GENERAL INFORMATION ABOUT THE SUBJECT			
1.1. Title	**Market research**	1.8. ISVU course code	187558
1.2. Lecturer	**Jelena Šišara, univ.spec.oec.**	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

		LO Level: 7. *Recapture,* 8. *Understanding,* 9. *Application,* 10. *Analysis,* 11. *Evaluation,* 12. *Synthesis*
2.4. Expected learning outcomes on the course level	**Learning outcomes** towards Bloom's taxonomy: (up to two verbs per LO)	
	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.	

	Constructive alignment				
2.5. Course content according to detailed curriculum schedule	**No:**	**Thematic ensemble / Lecture Topic**	**Course LO**	**Content / Teaching Method**	**Evaluation**	**Time needed**
	61.	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

62.	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
63.	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
64.	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
65.	TYPES OF MARKET RESEARCH	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
66.	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
67.	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
68.	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
69.	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

	70.	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
	71.	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
	72.	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
	73.	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
	74.	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 problem and propose a solution to the same problem.	4 hours
	75.	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 is relieved of an oral examination)	Other (inscribe)	

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

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

	Valuation Element	Poor	Satisfying	Above average
4.1. Seminar paper grading	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	Sources are accurate, complete and consistent. The references are appropriate,

		the subject and show a satisfactory research attitude.	their list is "rich" and comprehensive and shows a robust research approach.

		Poor	Satisfying	Above average
4.2. Colloquium / exam grading		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

1.1. Course lecturer	Želimir Mikulić	1.7. Credit score (ECTS)	6
1.2. Course title	**Quantitative methods for business decision-making**	1.8. Forms of teaching (number of hours Lecturing +Practical exercises + Seminars + e learning)	45 L + 30 PE
1.3. Assistants and/or associates		1.9. Level of e- learning application (1st, 2nd, 3rd level), percentage of on line course performance (max. 20%)	1st level – learning materials are available online, 10% interactive tools
1.4. Study programme (specialist, undergraduate, graduate)	Specialist professional graduate	1.10. Number of course revisions	
1.5. Course status (obligatory, optional)	Obligatory	1.11. Modernization	x
1.6. Year of study	2.	1.12. Percentage estimate of course changes and/or supplements	Less than 20% □ More than 20 % □

2. COURSE DESCRIPTION

2.1. Course objectives	To introduce students to various types of problems that occur in business decision making. Get to know and learn to use the methods that are used to solve certain problems in business decision making and learn methods to optimize such problems.
2.2. Terms of course entry and required competences	Completed Statistics Collegium
2.3. Learning outcomes on the study programme level	To individually and responsibly search relevant literature for reaching solutions and conclusions. To analyse the business environment, distinguish the company's competitive advantages, and propose different business strategies to achieve the company's goals. Implement and evaluate the qualitative and quantitative methods for business decision-making in solving economic and managerial problems using software support. To propose decisions on production, operations, flows, capacities, costs and processes by analysing and tracking achieved indicators and results. To evaluate the eligibility of the investment project on the basis of economic and financial analysis made with the help of modern tools and techniques.
2.4. Expected learning outcomes on the course level	Students will: Plan the conduct of an operational research, evaluate the required resources and time, and lead an operational research team. Identify and classify problems: linear programming, nonlinear programming, integer and mixed programming, transport, network, deterministic and stochastic dynamic programming problems. To build a mathematical model of linear optimization problems. Using the program support to solve the problems of linear optimization and evaluate the reliability of the results based on the sensitivity analysis. Develop transport and assignment problem models, review their validity, and choose when it is more convenient to deal with other methods.

	Identify network optimisation models: Apply basic algorithms and methods to resolve network optimisation problems. Design a model for process control and to select the optimal savings by cutting in cases of breaking deadlines. Recommend optimal business decision choices using deterministic and stochastic dynamic programming methods. Design decision trees for evaluating decisions and calculate the value of information. Critically evaluate decision modelling settings and get results to avoid bias and standard error.

			LECTURES				EXERCISES/LABS
	Week	Hour	Theme	Week	Hour		Theme
2.5. Course content according to detailed curriculum schedule	1	3	Introduction to Quantitative Methods.	1	2		Setting up a mathematical model
	2	3	Linear problems, mathematical model and geometric visualization.	2	2		Setting up a mathematical model. Solving using simplex method
	3	3	Introduction to Simplex Method	3	2		Solving the optimization problem
	4	3	Theoretical basis of simplex methods	4	2		Simplex Method. Post-optimal analysis.
	5	3	Post-optimal analysis, sensitivity and shadow price	5	2		Post-optimal analysis.
	6	3	Special cases of linear problems, transport problems	6	2		Transport problems
	7	3	Directed simplex method for transport problems. Problem of assignation.	7	2		Assignation problems.
	8	3	Network Models: Minimum Tree Problem, Shortest Way, Maximum Flow	8	2		Solving linear problems.
	9	3	Network Modelss for Project Management.	9	2		Repetition.
	10	3	Dynamic Programming	10	2		Applying Networks to Solve Linear Problems: Minimum Tree, Shortest Path,
	11	3	Stochastic Dynamic Programming.	11	2		maximum flow, minimum cost flow. Critical path method
	12	3	Decision-Making Theory: Decisions Tree.	12	2		Dynamic programming
	13	3	Decision-Making Theory: The value of information	13	2		Stochastic Dynamic Programming,
	14	3	Behavioural economics. Prejudices and misconceptions of using quantitative methods.	14	2		Decision-Making Theory
	15	3	Problem analysis, model selection and solving methods.	15	2		Decision-Making Theory. Repetition.

2.6. Teaching methods	x lectures □ seminars and workshops x practical exercises □ distance education □ mixed e-learning □ field teaching	x independent tasks □ multimedia and network □ laboratory □ mentoring □ other	2.7. Comments:

2.8. Students` obligations	Minimal attendance for full-time students is 70% of all lectures and exercises. Students who do not satisfy minimal attendance condition will not be allowed to the exam. Part time students can supplement attendance with regular consultations with lecturer on the be-weekly basis. It is strongly recommended that students take active part during lectures (in discussions, readings, rising questions, problem solving etc.) Part time students who will not be able to attend lectures regularly should contact lecturer in advance during consultation hours or via e-mail (zelimir.mikulic@vus.hr, sisak@vus.hr). It is duty of a student to inform itself about lectures on the daily basis. Notifications about possible changes will be sent to students via e-mail and posted on the web page of course e-learning site, together with all information about course, learning materials, assignments etc.

2.9. 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	1,5	Written exam	2,5	Project	
	Experimental work		Research		Practical work	
	Essay		Report		Continuous examination	0,5
	Colloquium		Seminar paper		Other	
	Class activity	0,5	Oral exam	1	Other	

2.10. Grading and evaluating students` work during classes and on the exam	Student's attendance is regularly registered as is activity in class during lectures and exercises. Three colloquiums are organized during semester (not obligatory for students) and student who scores over 50% points on each of them can go directly to oral exam. Total score from all three colloquiums is then used instead of written exam score. If student passes only two out of three colloquiums, he can repeat one he has missed at the end of semester. Students who do not pass all three colloquiums have to approach to the written exam. On the written exam student has to score minimum of 50% points to be allowed to the oral exam. Final grade is based on the following criteria: 10% based on attendance, 15% on activity during lectures and exercises, 25% based on results of written exam and 50% based on results of oral exam.

2.11. Compulsory literature (available in the library and via other media)	Title	Number of copies in the library	Availability via other media
	Kalpić D., Mornar V., Operacijska istraživanja, DRIP, Zagreb 1996.	5	
	Hillier F., Lieberman G. : Introduction to operations Research, McGraw Hill 8th ed. 2005, 8th Ed.	1	Pdf form
	Swift L., Piff S.: Quantitative Methods for Business, Menagement and Finance, Palgrave, 3rd Ed.	5	
	Winston W.: Microsoft Excel 2013: Dana Analysis and Business Modeling	5	

2.12. Additional litearature (at the moment of changes and/or amended of study programme)	Babić Z., Linearno programiranje, Sveučilište u Splitu , Split 1991. Bradley, Hax, and Magnanti : Applied Mathematical Programming, Addisson-Wesley, 1977	1 1	Pdf form
2.13. 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.		

1. GENERAL INFORMATION ABOUT THE SUBJECT

1.1. Title	**Psychology for managers**	1.8. ISVU course code	129875
1.2. Lecturer	MA Gina Lugović, s. lecturer	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)	30L+15S
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% performance courses on line
1.5. Course status (obligatory, optional)	Obligatory	1.12. Number of course revisions	1
1.6. Study year	1st	1.13. Modernization	x yes ☐ no
1.7. Credit score (ECTS)	5	1.14. Percentage estimate of course changes and/or supplements	Less than 20% X More than 20 % ☐

2. COURSE DESCRIPTION

2.1. Course objectives	- Introduction to the basic concepts of psychology underlying relationships.
	- Adoption of the basic concepts of human relations:
	  - the nature of human relationships, social perception,
	  - components of interpersonal relationships,
	  - the attitudes and importance of behavioural attitudes,

	- stereotypes and prejudices, - forms of social behaviour, - development of morality, - social skills as the foundation of interpersonal relationships, - Conflict and non-violent conflict resolution. - Understanding interpersonal relationships and social skills. - Identifying the causes of conflict and ways of reducing and preventing conflicts.
2.2. Terms of course entry and required competences	No input competence.
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
	LO6. To critically evaluate existing marketing communications and suggest improvements on the concrete business case and develop basic skills of forming integrated marketing communications

	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
2.4. Expected learning outcomes on the course level	5. **Analyse** the quality of communication and create an atmosphere of successful communication in their social / work environment	4
	6. **Manage** verbal and non-verbal expression and behaviour - assertive and prosocial	6
	7. **Propose** social skills in human relations and reduce conflict	6
	8. **Organize** and manage work in a team, and critically weigh the opinions and attitudes of stakeholder team	6
	9. **Suggest** ways to resolve conflicts in your social environment	6
	10. **Manage** the social skills and social / communication competencies required of a manager	6
	11.	
	12.	
	13.	
	14.	

2.5. Course content according to detailed curriculum schedule	**Constructive alignment**

No:	Thematic ensemble / Lecture Topic	Course LO	Content / Teaching Method	Evaluation	Time needed
	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.	-	2 hours
76.	Introduction lecture, Concept and content of psychology for managers, Differences between needs and desires, Abandonment and active participation.	1, 2, 3	Listen to the lecture and read the literature.	In the written exam they define the basic concept and content of psychology for managers, to distinguish between needs and desires, the meaning of giving up and active participation, in the work environment.	4 hours
77.	Interpersonal relationships (the nature of interpersonal relationships, the importance of social perception in the realization of interpersonal relationships).	1, 2, 3	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they know how to define the nature of interpersonal relationships, and the importance of social perception in achieving interpersonal relationships, in the work environment. Seminar paper created and presented (using computer programs independently).	4 hours
78.	Interpersonal relationships (components of interpersonal relationships - verbal and nonverbal expression).	1, 2, 3	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they can define and explain the components of interpersonal relationships: verbal and non-verbal expression, in a work environment. Seminar paper created and presented (using computer programs independently).	4 hours
79.	Interpersonal relationships (self-expression, assertiveness, active listening, empathy, rules of communication).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they can define and explain the components of interpersonal relationships: verbal and non-verbal expression, in a work environment. Seminar paper created and presented (using computer programs independently).	10 hours
80.	The attitudes and importance of behavioral attitudes (formation and attitude component and behavioral role)..	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they know how to define and explain the formation and components of attitude and role in behaviour, and the importance of attitudes to behaviour, in the work environment. Seminar paper created and presented (using computer programs independently).	10 hours
81.	Attitudes and Importance of Behavioral Attitudes (Mechanisms that Affect the Change of Attitude).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and	In the written exam, they are able to define and describe the mechanisms that influence attitude change in the work environment. Seminar paper created and presented (using computer programs independently).	8 hours

				present the acquired knowledge and ideas, discuss problems.	
82.	Stereotypes and prejudices, stereotypical influence, and prejudice in interpersonal interaction.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they are able to define and describe stereotypes and prejudices, and the impact of stereotypes and prejudices on interpersonal interaction, in a work environment. Seminar paper created and presented (using computer programs independently).	10 hours
83.	Forms of social behavior (prosocial behavior, aggressive behavior).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam they can define and describe forms of social behaviour (prosocial and aggressive behaviour), in a work environment. Seminar paper created and presented (using computer programs independently).	4 hours
84.	Forms of social behavior (social inhibition, formation and role in interpersonal relationships).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they can define and describe forms of social behaviour (social inhibition and the formation and role of social inhibition in interpersonal relationships), in the work environment. Seminar paper created and presented (using computer programs independently).	6 hours
85.	Morale (theory).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they can define and describe theories of moral development in the work environment. Seminar paper created and presented (using computer programs independently).	8 hours
86.	Moral (tolerance).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they are able to define and describe morale in relation to tolerance in the work environment. Seminar paper created and presented (using computer programs independently).	8 hours
87.	Social skills: the foundation of human relationships (formation of social skills and their role in communication).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they are able to define and explain social skills as the basis for interpersonal relationships (the way social skills are formed and their role in communication, in the work environment. Seminar paper created and presented (using computer programs independently).	10 hours
88.	Social skills: the foundation of human relationships (social competence).	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of	In the written exam, they are able to define and describe social competence as a social skill. Seminar paper created and presented (using computer programs independently).	6 hours

				previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	
89.	The conflict and peaceful conflict resolution.	1, 2, 3, 4, 5, 6	They listen to a lecture and read literature. In seminar classes, individually, in pairs or groups, they demonstrate the acquisition of previously acquired knowledge and present the acquired knowledge and ideas, discuss problems.	In the written exam, they can define and describe conflict and non-violent conflict resolution, for example from a work environment. Seminar paper created and presented (using computer programs independently).	6 s hours
90.	Repetition. Instructions for exam. Signatures.	6	Listen to the lecture and individual preparation for the exam.		20 hours

3. EVALUATION OF STUDENT WORK

3.1. Students` obligations	Full-time students are required to attend a minimum of 70% of lectures and a part-time minimum of 30% of lectures. All students are required to select topics, create, present and defend two seminar papers (one with Croatian and the other with English used literature; submit in text and present; seminar paper consists of a minimum of 10 pages: cover, content, introduction, paper, conclusion Seminars cover the theoretical content of the course as preparation for the written examination Seminar papers are sent for review by e-mail (gina@vus.hr) Students are advised to attend the consultation at the time of the consultation or for some the second term. Teaching information and teaching materials are available on the website of the Polytechnic (http://www.vus.hr).

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	3	Project	/
	Experimental work	/	Research	/	Practical work	/
	Essay	/	Report	/	Continuous examination	/
	Colloquium	/	Seminar paper	1	Other (inscribe)	/
	Class activities	/	Oral exam	/	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	45
8.	Creating and Presenting seminar paper	20
9.	Preparation for the Colloquium / exam through self-study	85

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

Element				
Active participation in the lessons	70-75% of attendance	76-86% of attendance	87-100% of attendance	Created mental map. Solved case study.
	2 points	4 points	7 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. Penington, D. (1997). Osnove socijalne psihologije, Poglavlje 3: Socijalizacija II, str. 57-81, Poglavlje 4. Stavovi i promjena stava, str. 82-107; Poglavlje 5: Predrasude i sukobi, str. 108-133; Poglavlje 6. Socijalna spoznaja I, str. 134-162; Poglavlje 7: Atribucijski pristup, str. 163-185; Poglavlje 10: Društveni utjecaj, str. 244-271; Poglavlje 11: Grupe i grupni uradak, str. 272-302. Jastrebarsko: Naklada Slap.	5	
	2. Knapp, M. L., Hall, J. A. (2010). Neverbalna komunikacija u ljudskoj interakciji, Prvi dio, str. 1-3, 5-17; str. 71-96; Drugi dio: str. 143-167. Jastrebarsko: Naklada Slap.	5	
5.2. Additional literature (at the moment of changes and/or amended of study programme)	1. Yukl, G. (2008). Rukovođenje u organizacijama, 2. poglavlje: priroda rukovoditeljskog posla, str. 23-50; 7. poglavlje: Osobine, sposobnosti i vještine rukovoditelja, str. 179-212; 13. poglavlje: Razvoj rukovoditeljskih sposobnosti i vještina, str. 382-412. Jastrebarsko: Naklada Slap. 2. Bhagoria, A. (2012). Managing Business Through Human Psychology. http://www.free-ebooks.net/ebook/Managing-Business-Through-Human-Psychology-A-Handbook-for-Entrepreneur/pdf/view	5 pdf	Available On-line
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).		