

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD**Name in Polish – **Podstawy finansów**Name in English – **Basics of finance**Main field of study – **Management**Specialization: **Organizational Management**Level and form of studies: **1st level, full-time**Type of subject: **obligatory**Subject code **FBZ1150W**Group of courses **No**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	60				
Form of credition	Crediting with grade				
For group of courses mark (X) final course					
Number of ECTS points	2				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Competencies in mathematics confirmed by positive marks on certificate from a high school.
2. Skills of making notes during lectures and studying recommended literature.
3. Social competencies allowing taking part in lectures conducted for big student groups.

SUBJECT OBJECTIVES

- C1. Acquiring by students the essential knowledge components from the area of basic finance, such as:
- C1.1 Notion of finance,
 - C1.2 Development of finance as knowledge/science,
 - C1.3 Fundamental financial categories,
 - C1.4 Role and functioning of money in economy,
 - C1.5 Notion of rate of return (percentage rate), types and components of percentage rates,
 - C1.6 Time value of money,
 - C1.7 Notion of value in finance,
 - C1.8 Notion and measuring of risk in finance,
 - C1.9 The essence, functions and components of financial system of economy (including system in Poland),
 - C1.10 Basic financial instruments.
- C2. Mastering by students:

- C2.1 The skills of correct usage of notions and financial terminology from the scope of fundamentals of finance,
- C2.2 The skills of classification and description of fundamental financial events and processes,
- C2.3 The skills of interpretation and basic analysis and evaluation of financial events and processes.
- C3. Acquiring and developing by students the social competencies, such as:
 - C3.1 Responsible behavior and responsibility for oral and written statements,
 - C3.2 Fairness and truth in conduct in academic environment and in a society,
 - C3.3 Positive influence on functioning of a student group (coherent with subject objectives),
 - C3.4 Tolerance for cultural differences, respect for personal individual choices not limiting freedoms of others, skills of finding areas of agreement and cooperation in a changing, multicultural society.

SUBJECT EDUCATIONAL EFFECTS of students who have got credition

- **from a scope of knowledge – they have basic knowledge in finance, that is they:**
 - PEK_W01 – know etymology of a “finance” term and basic stages of finance development,
 - PEK_W02 – know subject and methods of research of finance and various specific financial disciplines,
 - PEK_W03 – know and understand basic financial categories, such as price, revenue, income, profit, percentage rate, rent, expenditure, cost, amortization, loan, credit, deficit, debt,
 - PEK_W04 – have knowledge on role and functioning of money in economy,
 - PEK_W05 – know a notion of a percentage rate, identify types and components of percentage rates,
 - PEK_W06 – have knowledge on time value of money, inflation and its results, and methods of measuring the time value of money,
 - PEK_W07 – know a notion of value in finance and know methods of financial valuation,
 - PEK_W08 – know a notion of income and various rates of income,
 - PEK_W09 – know a notion of risk and know methods of measuring risk,
 - PEK_W10 – have knowledge on the essence, functions, and components of financial system in economy (particularly in Poland),
 - PEK_W11 – know and characterize basic financial instruments of transfer of capital and transfer of risk.
- **from a scope of skills – they can correctly apply learned notions and methods of finance for classifying, describing, analyzing and evaluating financial events and processes, that is they:**
 - PEK_U01 – can correctly use the notions and financial terminology from the scope of fundamentals of finance,
 - PEK_U02 – can present/describe typical financial events and processes,
 - PEK_U03 – are able to perform a quantitative analysis of financial events and interpret and evaluate results of analysis.
- **from a scope of social competencies – they acquire and develop social competencies, such as:**
 - PEK_K01 – openness on information presented in media on financial topics,
 - PEK_K02 – consciousness of a need of an analytical/critique approach towards financial information received and financial opinions presented ,
 - PEK_K03 – activity in looking for supplementary information and its selection and verification,
 - PEK_K04 – care for developing ability of independent application of acquired knowledge and skills,
 - PEK_K05 – consciousness of influence of applied financial solutions on economy, producers, consumers and social development,
 - PEK_K06 – objectivism in evaluating arguments of others, rational approach in supporting

own points of view with application of knowledge of basics of finance,
PEK_K07 – conforming to good habits and rules of behavior obligatory in academic
environment and in society.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Organizational matters. Notion of finance, finance development and disciplines of finance.	2
Lec 2	Basic financial categories.	2
Lec 3	Role and functions of money in economy.	5
Lec 4	Notion of percentage rate, types and components of percentage rates.	2
Lec 5	Time value of money. Intermediate written knowledge and skills verification.	5
Lec 6	Notion of value in finance, topic of valuation and of income rate.	2
Lec 7	Notion and measure of risk.	2
Lec 8	The essence, functions and components of financial system in economy (particularly in Poland).	5
Lec 9	Basic financial instruments. Final written knowledge and skills verification	5
	Total hours	30
Form of classes - class		Number of hours
Cl 1		
Cl 2		
...		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
...		
	Total hours	
Form of classes - seminar		Number of hours

Sem 1		
Sem 2		
...		
	Total hours	

TEACHING TOOLS USED

- N1. Traditional lecture
 N2. Lecture with application of slides (projector and computer)
 N3. Written knowledge and skills verification
 N4. Consultations
 N5. Individual work – studying and preparation for knowledge and skills verification.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	W01÷W06, U01÷U03, K01, K02, K04÷K07	Written knowledge and skills verification
F2 = P	W01÷W11, U01÷U03, K01, K02, K04÷K07	Written knowledge and skills verification

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Ritter L.S., Silber W.L., Udell G.F., Principles of Money, Banking and Financial Markets, Prentice Hall, 1997.
 [2] Shao S.P., Shao S.P. Jr., Mathematics for management and finance, South-Western Publishing Co., 1986.

SECONDARY LITERATURE:

- [1] Jajuga K., Elementy nauki o finansach, PWE, Warszawa 2007.
 [2] Owsiak S., Podstawy nauki finansów, PWE, Warszawa 2002.

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Basics of finance
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W01, K1_ZARZ_W02	C1.1	Wy1	N1÷N5
PEK_W02	K1_ZARZ_W01, K1_ZARZ_W02	C1.2	Wy1	N1÷N5
PEK_W03	K1_ZARZ_W03	C1.3	Wy2	N1÷N5
PEK_W04	K1_ZARZ_W02, K1_ZARZ_W03	C1.4	Wy3	N1÷N5
PEK_W05	K1_ZARZ_W03	C1.5	Wy4	N1÷N5
PEK_W06	K1_ZARZ_W02, K1_ZARZ_W03	C1.6	Wy5	N1÷N5
PEK_W07	K1_ZARZ_W02, K1_ZARZ_W03	C1.7	Wy6	N1÷N5
PEK_W08	K1_ZARZ_W03	C1.7	Wy6	N1÷N5
PEK_W09	K1_ZARZ_W02, K1_ZARZ_W03	C1.8	Wy7	N1÷N5
PEK_W10	K1_ZARZ_W02, K1_ZARZ_W03, K1_ZARZ_W04, K1_ZARZ_W11	C1.9	Wy8	N1÷N5
PEK_W11	K1_ZARZ_W03, K1_ZARZ_W04, K1_ZARZ_W11	C1.10	Wy9	N1÷N5
PEK_U01 (skills)	K1_ZARZ_U01, K1_ZARZ_U02, K1_ZARZ_U14, K1_ZARZ_U17, K1_ZARZ_U18	C2.1	Wy1, Wy2, Wy4, Wy6, Wy7, Wy9	N1÷N5
PEK_U02	K1_ZARZ_U14, K1_ZARZ_U17, K1_ZARZ_U18	C2.2	Wy2÷Wy9	N1÷N5
PEK_U03	K1_ZARZ_U02, K1_ZARZ_U03, K1_ZARZ_U14, K1_ZARZ_U17	C2.3	Wy2÷Wy9	N1÷N5
PEK_K01 (competences)	K1_ZARZ__K01, K1_ZARZ__K08	C3	Wy1÷Wy9	N1÷N5
PEK_K02	K1_ZARZ__K01, K1_ZARZ__K04 K1_ZARZ__K06, K1_ZARZ__K08	C3	Wy1÷Wy9	N1÷N5
PEK_K03	K1_ZARZ__K01, K1_ZARZ__K04 K1_ZARZ__K05, K1_ZARZ__K08	C3	Wy1÷Wy9	N1÷N5
PEK_K04	K1_ZARZ__K01, K1_ZARZ__K04 K1_ZARZ__K06, K1_ZARZ__K07	C3	Wy1÷Wy9	N1÷N5

PEK_K05	K1_ZARZ__K04, K1_ZARZ__K05 K1_ZARZ__K06, K1_ZARZ__K08	C3	Wy1÷Wy9	N1÷N5
PEK_K06	K1_ZARZ__K02, K1_ZARZ__K6, K1_ZARZ__K08, K1_ZARZ__K09	C3	Wy1÷Wy9	N1÷N5
PEK_K07	K1_ZARZ__K02, K1_ZARZ__K04 K1_ZARZ__K08, K1_ZARZ__K09	C3	Wy1÷Wy9	N1÷N5

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish Rachunkowość finansowa****Name in English Financial accounting****Main field of study (if applicable): Management****Specialization (if applicable): Company management****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code FBZ1151****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	60	60			
Form of crediting	crediting with grade*	crediting with grade*			
For group of courses mark (X) final course					
Number of ECTS points	2	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES*The student should have a basic knowledge in microeconomics.***SUBJECT OBJECTIVES**

C1 Possessing the basic knowledge about the principles, methods and ways of transaction entering in accounts and about formal and legal conditions according to Accounting Law and requirements of financial reporting.

C2 Possessing the ability to enter transactions in the accounts, closing accounting periods and preparing financial statements.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 has an ordered knowledge about the object, scope and principles of accounting, about economic operations (accounting transactions included) and the principles of their documentation and registering

PEK_W02 characterizes elements of the accounting organization (documentation and application) and knows foundations of financial reporting (balance sheet, loss and profit statement and cash flow statement)

relating to skills:

PEK_U01 is able to list and present the legal requirements with respect to the documentation of the principles of the (policy of) accounting adopted by the entity as well as the subject scope of the obligation to run full accounting plus the compulsory elements of the accounting documentation

PEK_U02 is able to apply in practice the principles of entering typical transactions, to close and open accounting periods and to prepare financial statements (balance sheet, loss and profit statement).

relating to social competences:

PEK_K01 has the consciousness of the significance of accounting in the economic practice.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Fundations and legal principles of accounting.	4
Lec 2	Functioning principles of accounts and types of transactions.	4
Lec 3	Recording and evaluating of balance sheet elements	4
Lec 4	Chart of accounts	2
Lec 5	Revenues and expenditures	5
Lec 6	Loss and profit statement	5
Lec 7	Other elements of financial reporting	4
Lec 8	Final test	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Classification of balance sheet elements	
Cl 2	Economic transactions and their consequences	
Cl 3	Balance sheet accounts – principles of functioning, trial balance	
Cl 4	Profit accounts -principles of functioning and entering	
Cl 6	Financial reporting	
Cl 7	Final test	
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		

	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. Information lecture N2. Multimedia presentation N3. Practical exercises		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W01, PEK_W02	Final test
F ¹	PEK_U01, PEK_U02	Test nb 1 Test nb 2

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Zaawansowana rachunkowość finansowa /Teresa Martyniuk, Danuta Małkowska. Warszawa : Polskie Wydawnictwo Ekonomiczne, 2010.
- [2] Rachunkowość finansowa od podstaw /Józef Aleszczyk. Poznań : Zysk i S-ka Wydawnictwo, 2011
- [3] Rachunkowość finansowa :ujęcie sprawozdawcze i ewidencyjne : podręcznik /pod red. Ewy Walińskiej ; [aut.] Ewa Walińska [et al.]. Warszawa : Oficyna a Wolters Kluwer business, 2010.
- [4] Rachunkowość finansowa /Maria Gmytrasiewicz, Anna Karmańska. Warszawa : Difin, 2006.

SECONDARY LITERATURE:

- [1] Zaawansowana rachunkowość finansowa :przykłady, zadania, testy /red. nauk.

¹ The final Mark will be the weighted average: 0,3 * test 1 mark + 0,7 test 2 mark

Kazimiera Winiarska ; aut. Anna Buczkowska [et al.]. Warszawa : Wydawnictwo C. H. Beck, 2012.

[2] Rachunkowość finansowa : ujęcie sprawozdawcze i ewidencyjne : zbiór zadań /pod red. Ewy Walińskiej ; [aut.] Ewa Walińska [et al.]. Warszawa : Oficyna a Wolters Kluwer business, 2010.

[3] Rachunkowość finansowa od podstaw.2,Zadania z rozwiązaniami /Anna Zysnarska. Gdańsk : Ośrodek Doradztwa i Doskonalenia Kadr, 2011

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Financial Accounting
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Company management

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W02	C1	Lec 1	N1
	K1_ZARZ_W03		Lec 2	N2
	K1_ZARZ_W04		Lec 3	
			Lec 4	
PEK_W02	K1_ZARZ_W11	C2	Lec 5	N1
	K1_ZARZ_W16		Lec 6	N2
	K1_ZARZ_W24		Lec 7	
			Lec 8	
PEK_U01 (skills)	K1_ZARZ_U04	C1	CI 1	N3
	K1_ZARZ_U06		CI 2	
			CI 3	
PEK_U02	K1_ZARZ_U05	C2	CI 4	N3
	K1_ZARZ_U07		CI 5	
	K1_ZARZ_U11		CI 6	
			CI 7	
PEK_K01 (competences)	K1_ZARZ_K01	C1+C1	W1-W8 CI 1-CI 7	N1-N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT					
SUBJECT CARD					
Name in Polish Finanse przedsiębiorstw					
Name in English Corporate finance					
Main field of study (if applicable): Management					
Specialization (if applicable): Organizational Management					
Level and form of studies: 1 st level, full-time					
Kind of subject: obligatory /					
Subject code FBZ1152					
Group of courses YES / NO*					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	90	60			
Form of crediting	Examination	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	3	2			
including number of ECTS points for practical (P) classes	-	2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basics of Economics
2. Basics of Accounting

SUBJECT OBJECTIVES

- C1. to familiarize students with the most important financial mechanisms operating in the company
 C2. to familiarize students with the main sources of company financing and their characteristics
 C3. to familiarize students with the methods used to evaluate company's financial condition

SUBJECT EDUCATIONAL EFFECTS**relating to knowledge:**

Students receiving credition:

- PEK_W01 – know basic financial categories and know differences between accounting and economic models of economic information,
 PEK_W02 – have knowledge about main sources of company financing – their types, features, functions and costs,
 PEK_W03 – know basic efficiency model of corporation,
 PEK_W04 – are familiar with mechanism of operational, financial and total leverage, know factors (decisions) that influence leverage and risk associated with a given level of leverage (operational, financial and total leverage)
 PEK_W05 – know methods of company's financial situation evaluation, have knowledge about

introductory evaluation of a company on the basis of its financial reports and methods of ratio analysis.

relating to skills:

Students receiving credit:

PEK_U01 – are able to see dependencies and cause-effect relationships between events taking place in the company,

PEK_U02 – have skills of searching for and applying information from various sources in the financial decision making process,

PEK_U03 – are able to apply learned tools and methods of corporation's financial situation evaluation in economic practice.

relating to social competences:

Students receiving credit:

PEK_K01 – are able to identify and supplement a lacking knowledge that allows to solve financial problems,

PEK_K02 – are able to identify opportunities and threats to the company's financial situation in an external environment,

PEK_K03 – are prepared for taking part in projects aiming at changes in management of company's resources,

PEK_K04 – understand a need for permanent education and skills development and know the possibilities and ways of development of their skills.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	The basic financial categories	2
Lec 2	Overview of assets - their characteristics and functions	2
Lec 3	Types and functions of capital	2
Lec 4	Cost of capital	2
Lec 5	Financial concepts of profit	2
Lec 6	Transition from cash to accrual accounting principle	2
Lec 7	Cost-volume-profit analysis	4
Lec 8	Financial leverage	2
Lec 9	Operating leverage	2
Lec 10	Total leverage	2
Lec 11	Profitability analysis	4
Lec 12	Liquidity and working capital management	2
Lec 13	Methods of company's financial statement evaluation	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Transition from cash to accrual accounting principle	2
Cl 2	Cost-volume-profit analysis	3
Cl 3	Operating leverage	2

Cl 4	Financial leverage	2
Cl 5	Total leverage	2
Cl 6	Profitability analysis	2
Cl 7	Test	2
	Total hours	15

Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	

Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	

Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED
N1. Lecture with multimedia presentation and discussion
N2. Exercises solving and discussion
N3. Individual work – preparation for classes and exam

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F	PEK_W01, PEK_W02, PEK_W03, PEK_W04, PEK_W05	Test
P	PEK_W01, PEK_W02, PEK_W03, PEK_W04, PEK_W05	Examination

C

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Brealey R.A., Myers S.C., Allen F., *Corporate Finance*, McGraw-Hill, Irwin, Boston 2006.
[2] Brigham E.F., Gapenski L.C., Ehrhardt M.C., *Financial Management, Theory and Practice*, The Dryden Press, Rort Worth 1999.

SECONDARY LITERATURE:

- [1] Damodaran A., *Corporate Finance, Theory and Practice*, John Wiley & Sons, New York 2001
[2] Ross S.T., Westerfield R.W., Jaffe J.F., *Corporate Finance*, McGraw-Hill, Irwin, Boston 2005

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Corporate Finance
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W02 K1_ZARZ_W03 K1_ZARZ_W11	C1, C2	Wy1, Wy2, Wy3, Wy4, Wy5	N1, N2, N3
PEK_W02	K1_ZARZ_W11	C2	Wy3, Wy4, Wy6	N1, N2, N3
PEK_W03	K1_ZARZ_W11	C3	Wy7, Wy8, Wy9, Wy10, Wy11, Wy12, Wy13	N1, N2, N3
PEK_W04	K1_ZARZ_W11	C1	Wy7, Wy8, Wy9, Wy10, Wy11	N1, N2, N3
PEK_W05	K1_ZARZ_W11	C3	Wy11, Wy12, Wy13	N1, N2, N3
PEK_U01 (skills)	K1_ZARZ_U03 K1_ZARZ_U05	C1, C2, C3	Wy2, Wy6, Wy7, Wy8, Wy9, Wy10, Wy11, Wy12	N1, N2, N3
PEK_U02	K1_ZARZ_U04 K1_ZARZ_U15	C2, C3	Wy1, Wy2, Wy3, Wy4, Wy5	N1, N2, N3
PEK_U03	K1_ZARZ_U05 K1_ZARZ_U07 K1_ZARZ_U08 K1_ZARZ_U11	C1, C3	Wy7, Wy11, Wy12, Wy13	N1, N2, N3
PEK_K01 (competences)	K1_ZARZ_K01 K1_ZARZ_K04	C3	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7, Wy8, Wy9, Wy10, Wy11, Wy12, Wy13	N1, N2, N3
PEK_K02	K1_ZARZ_K05	C1, C2, C3	Wy7, Wy8, Wy9, Wy10, Wy11, Wy12, Wy13	N1, N2, N3
PEK_K03	K1_ZARZ_K02 K1_ZARZ_K07 K1_ZARZ_K08	C1, C2, C3	Wy6, Wy7, Wy11, Wy12, Wy13	N1, N2, N3
PEK_K04	K1_ZARZ_K01	C1, C3	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7, Wy8, Wy9, Wy10, Wy11, Wy12, Wy13	N1, N2, N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY of Computer Science and Management

SUBJECT CARD**Name in Polish ...Zarządzanie finansami****Name in English Financial Management****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st/ level, full-time****Kind of subject: obligatory university-wide*****Subject code FBZ1153****Group of courses NO ***

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	60	30			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	2	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge of basic organizational and legal forms of organization
2. Basic knowledge of financial reporting
3. The ability to make simple mathematical calculations

SUBJECT OBJECTIVES

C1 Understanding the sources of funding of the organization

C2 Knowing valuation methods chosen forms of financing

C3 Knowledge of methods for estimating the efficiency of investment decisions

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows the subject of time value of money

PEK_W02 Knows financial sources of the organization

PEK_W03 Understands the subject of cost capital valuation models

relating to skills:

PEK_U01 Can calculate the future and present value of money

PEK_U02 Can use cost capital valuation models

PEK_U03 Can evaluate financial performance of investments

relating to social competences:

PEK_K01 Is aware of influence of time value of money, cost of capital and risk on management decisions

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction. The concept of financial management and value for the organization	2
Lec 2	Introduction to the modeling of time value of money	2
Lec 3	Models of the present and the future value of money	2
Lec 4	Models of the present and the future value of annuity	2
Lec 5	Classification of financial sources of the organization	2
Lec 6	Cost and risk of debt and equity financing	2
Lec 7	Share pricing models- dividend models	2
Lec 8	Share pricing models – models of stable profit growth	2
Lec 9	Bond pricing models	2
Lec 10	Cost of capital valuation model of organization	2
Lec 11	The risk of some forms of financing and its measurement	2
Lec 12	Introduction to the market valuation of the risk - CML model	2
Lec 13	Real investments in the company	2
Lec 14	Introduction to assessing financial performance of investments	2
Lec 15	Test	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Introduction. Interest rates on loans.	2
Cl 2	Calculation of the future and the present value of money. Cost-effectiveness study of deposits and credit costs	
Cl 3	Calculation of the annuity. Repayment of loans by the classical method and	2

	equal payments	
CI 4	Calculation of share price-dividend method	2
CI 5	Calculation of the share price - constant growth dividend method	2
CI 6	Bond price calculation	2
CI 7	WACC calculation	2
CI 8	Test	1
	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1.Multimedial lecture N2.Problems resolving N3.Calculation exercises		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P –	Educational effect number	Way of evaluating educational effect achievement
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concluding (at semester end)		
P1	PEK_W01 ÷ PEK_W03, PEK_U01, PEK_U02, PEK_K01	Test
P2	PEK_W01 ÷ PEK_W03, PEK_U01, PEK_U02, PEK_K01	Test

C

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] FINANCIAL Management : Theory and Practice / Eugene F. Brigham, Michael C. Ehrhardt. - 11 ed.. - Mason : Thomson : South-Western Cengage Learning, 2005
- [1] CONTEMPORARY Corporate Finance / James R. McGuigan, William J. Kretlow, R. Charles Moyer. - 11 ed., internat. student ed.. - Mason : South-Western Cengage Learning : Thomson, 2009.
- [3] INTERMEDIATE Financial Management / Eugene F. Brigham, Louis C. Gapenski. - 5 ed.. - Fort Worth : The Dryden Press : Harcourt Brace College Publishers, c. 1996

SECONDARY LITERATURE:

- [1] CAPITAL budgeting and investment analysis / Alan C. Shapiro. - Upper Saddle River : Pearson Education, c. 2005..
- [2] Levy H., Sarnat M., *Capital investment and Financial Decisions*, Prentice Hall, Hertsforshire, 1994
- [3] LUMBY S., *Investment Appraisal and Financial Decisions*, London, Chapman & Hall, 1996
- [4] WILIMOWSKA Z., WILIMOWSKI M., *Sztuka zarządzanie finansami.*, Bydgoszcz, TNOiK OPO, 2001

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Financial Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W11	C1, C2, C3	Lec1+Lec4, C11+C13	N1, N2, N3
PEK_W02 (knowledge)	K1_ZARZ_W11	C1, C2, C3	Lec5+Lec9, C14+C6	N1, N2, N3
PEK_W03 (knowledge)	K1_ZARZ_W11	C1, C2, C3	Lec10+Lec15, C7	N1, N2, N3
PEK_U01 (skills)	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2, C3	Lec1+Lec4, C11+C13	N1, N2, N3
PEK_U02 (skills)	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2, C3	Lec5+Lec9, C14+C6	N1, N2, N3
PEK_U03 (skills)	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2, C3	Lec10+Lec15, C7	N1, N2, N3
PEK_K01 (competences)	K1_ZARZ_K01	C1, C2, C3	Lec1+Lec15, C11+C17	N1, N2, N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

Faculty of Computer Science and Management					
SUBJECT CARD					
Name in Polish Analiza finansowa wspomagana komputerem					
Name in English Financial analysis supported by computer					
Main field of study (if applicable): MANAGEMENT					
Specialization (if applicable): ORGANIZATIONAL MANAGEMENT					
Level and form of studies: 1st level, full-time					
Kind of subject: obligatory					
Subject code FBZ1154					
Group of courses NO					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15		15		
Number of hours of total student workload (CNPS)	60		60		
Form of crediting	Crediting with grade	*	Crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	2		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	0,5		0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. None

SUBJECT OBJECTIVES

- C1. Introducing to core concepts of financial analysis.
 C2. Provide an overview of computer software and systems useful in financial analysis.
 C3. Developing analytical skills necessary to perform comprehensive financial statement analysis supported by computer.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 – Understand the basic principles, objectives and problems of financial analysis.**PEK_W02 – Familiarize with computer software and systems useful in financial analysis.**

Relating to skills:

PEK_U01 – Be able to perform comprehensive financial statement analysis**PEK_U02 – Be able to evaluate the financial standing of an enterprise using computer software.**

Relating to social competences:

PEK_K01 – Be aware of constantly changing legal, economic and social determinants of financial standing of enterprises.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	The role of financial management	1
Lec 2	Financial statements	2
Lec 3	Financial statement analysis	2
Lec 4	Ratios analysis	2
Lec 5	Modelling and forecasting	2
Lec 6	TPS, MIS and DSS in financial analysis	2
Lec 7	ESS, ERP and corporate platforms	2
Lec 8	Final test	2
	Total hours	15
Form of classes - class		Number of hours
Cl 1		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1	Horizontal and vertical analysis	1
Lab 2	Profitability ratios	2
Lab 3	Liquidity ratios	2
Lab 4	Activity ratios	2
Lab 5	Leverage ratios	2
Lab 6	Value ratios	2
Lab 7	DuPont Financial Analysis Model	2
Lab 8	Bankruptcy Prediction Models	2
	Total hours	15
Form of classes - project		Number of hours
Proj 1		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
	Total hours	
TEACHING TOOLS USED		
N1. Informative lectures		
N2. Discussion-based lectures		

N3. Multimedia presentation
 N4. Assignments
 N5. Computations
 N6. Reports

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P1 (lecture)	PEK_W01, PEK_W02, PEK_K01	Test
P2 (laboratory)	PEK_U01 PEK_U02 PEK_K01	Report

C

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Aileen M. Ormiston, Lyn M. Fraser, Understanding Financial Statements: International Edition, Pearson, 2012
- [2] J. Van Horne, John M Wachowicz, Fundamentals of Financial Management, Pearson, 2009
- [3] Philip J. Adelman, Alan M. Marks, Entrepreneurial Finance: International Edition, Pearson, 2010

SECONDARY LITERATURE:

- [1] Ken Laudon, Jane Laudon, Management Information Systems, Pearson, 2012

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Financial analysis supported by computer
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
MANAGEMENT
AND SPECIALIZATION **ORGANIZATIONAL MANAGEMENT**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W11	C1	Lec 1 - Lec 5	N1, N2, N3
PEK_W02	K1_ZARZ_W11	C2	Lec 6 - Lec 8	N1, N2, N3
PEK_U01 (skills)	K1_ZARZ_U17 K1_ZARZ_U16 K1_ZARZ_U15 K1_ZARZ_U11 K1_ZARZ_U05 K1_ZARZ_U04 K1_ZARZ_U07	C3	CI 1 - CI 15	N4, N5, N6
PEK_U02	K1_ZARZ_U17 K1_ZARZ_U16 K1_ZARZ_U15 K1_ZARZ_U11 K1_ZARZ_U05 K1_ZARZ_U04 K1_ZARZ_U07	C3	CI 1 - CI 15	N4, N5, N6
PEK_K01 (competences)	K1_ZARZ_K01	C1, C2, C3	Lec 1 - Lec 8 CI 1 - CI 15	N1, N2, N3, N4, N5, N6

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish ...Fizyka Środowiska Pracy****Name in English Work Environment Physics****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st / 2nd* level, full-time / part-time*****Kind of subject: obligatory / optional / university-wide*****Subject code FZZ1104****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15	15		
Number of hours of total student workload (CNPS)	30	30	60		
Form of crediting	crediting with grade	crediting with grade	crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	1	1	2		
including number of ECTS points for practical (P) classes		1	2		
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5	0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic statistical and mathematical skills (maturity exam or higher)
- 2.
- 3.

SUBJECT OBJECTIVES

C1 Possessing the basic knowledge about parameters of work environment and the work designing with taking into consideration ergonomics rules.

C2: Ability of work organization with taking into consideration ergonomics rules.

C2.1: optimization of work conditions for effective physical and psychological work

C2.2: preventing the harmful physical factors in the form of barriers and the organization of work, in order to maintain optimal conditions for effective physical and mental activity

C3: Acquisition and consolidation of social skills involving the ability to work in a group of students. The training of work habits according to the principles of ergonomics.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge: possess basic knowledge about ergonomics and safety of work

PEK_W01: knowing the history, aims and objectives of ergonomics

PEK_W02: knowing the definition of ergonomics and safety work. Defining the basic ergonomic tools and methods.

PEK_W03: knowing the legal basis of safety work and ergonomics in Poland and European Union

PEK_W04: knowing the basic factors of work environment. Defining basic physical parameters describing the noise, the lighting and the microclimate.

PEK_W05: knowing optimal and allowed values of basic work environment parameters

PEK_W06: possessing the knowledge about the impact of some factors of the work environment on the human body

PEK_W07: possessing the knowledge about the possible methods of reduction of disruptive effects of work environment factors

PEK_W08: knowing and understanding the ergonomic design concept on the basis of statistical analysis of anthropometric data; know and understand the concept of percentile, centile model, range values in ergonomic design.

PEK_W09: knowing different work postures; distinguish awkward and nonawkward postures of the body and body elements

PEK_W10: knowing rules of sitting work workstation geometry; know the ergonomics of stationary and mobile computer workstation and workstation elements

PEK_W11: knowing the rules of layout and equipment of stationary and mobile computer workstation described in Polish law, European Union directives and international standards

PEK_W12: knowing the different types of steering and signaling devices. Aware of the need to take into account the possibility of perceptual and biomechanical operator in the design of control and signal devices and human-computer interaction

PEK_W13: distinguishing among different types of workload (psychological and biomechanical – dynamic, static, monotone and monotonous); know the chosen tools of workload assessment

PEK_W14: knowing the technical, organizational and psychological methods of workload reduction

relating to skills: able to organize work according to the principles of ergonomics and safety

PEK_U01: recognizing the activities connecting with ergonomics and safety. Applying the basic ergonomic methods

PEK_U02: determining the standard of environment work and ergonomics in Poland and the European Union on the basis of the relevant documents

PEK_U03: using the basic physical parameters describing the work environment factors (noise, lighting, microclimate).

PEK_U04: applying the appropriate standards and rules to determine the optimal and allowed values of parameters of the work environment

PEK_U05: minimizing the harmful effects of chosen factors of the work environment on the human body through the design and implementation of possible methods

PEK_U06: applying percentile models and anthropometric data to assessment and correction of work.

PEK_U07: reduction the occurrence of awkward postures in the workplace

PEK_U08: diagnosis and correction of the geometry of the computer workstation, according to

ergonomic principles
 PEK_U09: evaluation and selection of the equipment of stationary and mobile computer workstation in accordance with the principles of ergonomics and occupational safety laws, EU directives and standards
 PEK_U10: assessment the steering and signaling devices in accordance with ergonomic principles, taking into account the physiological (perceptual and biomechanical) restrictions of user
 PEK_U11: assessment of dominating kind of workload (biomechanical, including dynamic, static, monotype and monotony and psychological stress) at the workplace and estimating its value
 PEK_U12: applying technical, organizational and psychological methods to reduce workload

relating to social competences: Acquisition and consolidation of social skills involving the ability to work in a group of students. The training of work habits according to the principles of ergonomics.

PEK_K01: the acquisition and development of skills of team cooperation for optimal solutions
 PEK_K02: the acquisition and development of a system thinking about the enterprise
 PEK_K03: developing the capacity of self-determination and self-justification

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction. Work environment and work environment physics - definition. Ergonomics - the history, aims and objectives, methods of ergonomic	2
Lec 2	Human being in the work environment. Directive 89/391/EEC (minimal requirements for work safety and ergonomics). The reliability of worker. Human-machine-work environment system. Fundamentals of ergonomic design.	2
Lec 3	Work environment factors and their impact on human productivity. Microclimate - basic concepts, the impact on the human body. Physical parameters of microclimate.	2
Lec 4	Lighting. Eyesight and eye anatomy. Basic lighting and illumination parameters affecting the employee. The impact of lighting on worker productivity.	2
Lec 5	Sound - the basic physical parameters. Noise. Structure and function of the organ of hearing. The impact of noise on humans. Prevention of noise.	2
Lec 6	Workspace of man. Variability of human anthropometric measurements. Recommendations for ergonomic work space design. Layout of workstation elements. Posture at work. Factors determining the awkward postures. The consequences of awkward posture.	2
Lec 7	Working at the computer workstation. The recommended posture. Workspace organization. Requirements and recommendations for computer workstation. Signal and steering devices. The basic principles of human-computer interaction	2
Lec 8	Psychological stress and biomechanical workload. Methods for evaluation of workload and workload reduction	1

	Total hours	15
Form of classes - class		Number of hours
Cl 1	The physical characteristics of the working environment - microclimate, thermal comfort, thermal stress analysis	2
Cl 2	The physical characteristics of the work environment - noise and vibration - Evaluation of the workload.	2
Cl 3	The physical characteristics of the work environment - lighting - impact on human eyesight and body.	2
Cl 4	Energy and postural workload at different workstations	2
Cl 5	The layout of the workstation - anthropometry and optimization	2
Cl 6	Computer workstation. Analysis and Design	2
Cl 7	Human-computer interaction - the analysis and design	3
	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1	Microclimate - computer simulation of thermal effects on the human environment	2
Lab 2	Designing a computer workstation - computer analysis of the geometric parameters of the workstation computer.	2
Lab 3	Lighting - Lighting Design Simulation in the workplace.	3
Lab 4	The design of layout of work elements.	2
Lab 5	Biomechanical workload - methods for assessing	2
Lab 6	Human - computer interaction.	2
Lab 7	Laboratory testing of the man – machine system	2
	Total hours	15
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. Traditional lecture with multimedia presentation		
N2. Laboratory - computer software, specialized research stations constructed in the Laboratory of Ergonomics		
N3. Working in groups during the lecture and classes		

- N4. Self-presentation of the prepared material during classes
 N5. Tutorial
 N6. Self access - independent studies, preparing a presentation for classes

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01 – PEK_W14 PEK_U01 - PEK_U12 PEK_K01 – PEK_K03	Activity during lectures, classes and laboratories Group work during lectures and classes Short tests Self-prepared presentation Laboratory exercises conducting
F2	PEK_W01 – PEK_W14 PEK_U01 - PEK_U12	Written test for crediting with grade
F3		

C

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Course material available at www.ergonomia.ioz.pwr.wroc.pl
- [2] Guastello S.G., Human factors engineering and ergonomics : a systems approach. Lawrence Erlbaum Associates, 2006.
- [3] Kroemer, Karl H. E., Ergonomics: how to design for ease and efficiency, Prentice Hall, 2001
- [4] Norman D., The design of everyday things, Currency and Doubleday, 1990
- [5] Salvendy, Gavriel (ed), Handbook of Human Factors and Ergonomics, John Wiley & Sons, 2006; electronic access

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- [1] Human-computer interaction: design issues, solutions, and applications / ed. by Andrew Sears, Julie A. Jacko. CRC Press/Taylor & Francis Group, 2009
- [2] Grobelny J., Jach K., Ergonomics and usability of information systems. in: Ergonomics and work safety in information community. Education and researches. Eds Leszek M. Pacholski, Jerzy S. Marcinkowski, Wiesława M. Horst. Poznań : Institute of Management Engineering, Poznan University of Technology, 2005
- [3] Nowak E., Atlas antropometryczny populacji polskiej - dane do projektowania. The Anthropometric Atlas of Polish Population - Data for Design, IWP Warszawa, 2001
- [4] Proctor R.W., van Zandt T., Human factors in simple and complex systems, Allyn and Bacon, 1994
- [5] Torma-Krajewski, Janet ; Steiner, Lisa J.; Burgess-Limerick, Robin, Ergonomics Processes - Implementation Guide and Tools for the Mining Industry, U.S. Department of Health and Human Services, CDC/NIOSH Office of Mine Safety and Health Research (electronic access)

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
WORK ENVIRONMENT PHYSICS
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY MANAGEMENT
AND SPECIALIZATION ORGANIZATIONAL MANAGEMENT (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	S1_ZARZ_OM_W07	C1	Lec1	N1 – N6
PEK_W02	S1_ZARZ_OM_W07	C1	Lec1	N1 – N6
PEK_W03	S1_ZARZ_OM_W07	C1	Lec1; Lec2	N1 – N6
PEK_W04	S1_ZARZ_OM_W07	C1	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_W05	S1_ZARZ_OM_W07	C1	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_W06	S1_ZARZ_OM_W07	C1	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_W07	S1_ZARZ_OM_W07	C1	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_W08	S1_ZARZ_OM_W07	C1	Lec2, Lec6; C15; Lab2; Lab4; Lab7	N1 – N6
PEK_W09	S1_ZARZ_OM_W07	C1	Lec2; Lec6; Lec7; C15; C16; Lab2; Lab5; Lab7	N1 – N6
PEK_W10	S1_ZARZ_OM_W07	C1	Lec6; Lec7; Lec4, C15; C16; Lab2; Lab4	N1 – N6
PEK_W11	S1_ZARZ_OM_W07	C1	Lec2; Lec6; Lec7; Lec4, C16; Lab2	N1 – N6
PEK_W12	S1_ZARZ_OM_W07	C1	Lec7; C15; C17; Lab4; Lab6	N1 – N6
PEK_W13	S1_ZARZ_OM_W07	C1	Lec8; C14; Lab5; Lab7	N1 – N6
PEK_W14	S1_ZARZ_OM_W07	C1	Lec8; C14; Lab5; Lab7	N1 – N6
PEK_U01	S1_ZARZ_OM_U07	C2.1	Lec1; C15	N1 – N6
PEK_U02	S1_ZARZ_OM_U07	C2.1	Lec1; Lec2	N1 – N6
PEK_U03	S1_ZARZ_OM_U07	C2.1	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_U04	S1_ZARZ_OM_U07; S1_ZARZ_OM_U10	C2.1; C2.2	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_U05	S1_ZARZ_OM_U07	C2.1; C2.2	Lec3; Lec4; Lec5; C11, C12; C13; Lab1; Lab3	N1 – N6
PEK_U06	S1_ZARZ_OM_U07	C2.1	Lec6, Lec7; C15, C16; Lab2	N1 – N6

PEK_U07	S1_ZARZ_OM_U07; S1_ZARZ_OM_U10	C2.1; C2.2	Lec6, Lec7; C14, C15, C16; Lab2; Lab5, Lab7	N1 – N6
PEK_U08	S1_ZARZ_OM_U07	C2.1	Lec7; C15, C16; Lab2	N1 – N6
PEK_U09	S1_ZARZ_OM_U07; S1_ZARZ_OM_U10	C2.1	Lec7; C15, C16; Lab2	N1 – N6
PEK_U10	S1_ZARZ_OM_U07; S1_ZARZ_OM_U05	C2.1	Lec7; C15; Lab7	N1 – N6
PEK_U11	S1_ZARZ_OM_U07; S1_ZARZ_OM_U10	C2.1; C2.2	Lec2, Lec6, Lec8; C14, Lab5, Lab7	N1 – N6
PEK_U12	S1_ZARZ_OM_U07; S1_ZARZ_OM_U10	C2.1; C2.2	Lec2, Lec6, Lec8; C14, Lab5, Lab7	N1 – N6
PEK_K01	K1_ZARZ_K02	C3	Lec1 – Lec8; C11-C17; Lab1-Lab7	N1 – N6
PEK_K02	K1_ZARZ_K02	C3	Lec1 – Lec8; C11-C17; Lab1-Lab7	N1 – N6
PEK_K03	K1_ZARZ_K02; K1_ZARZ_K04	C3	Lec1 – Lec8; C11-C17; Lab1-Lab7	N1 – N6

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY Computer Science and Management / DEPARTMENT.....

SUBJECT CARD**Name in Polish Systemy informatyczne w zarządzaniu****Name in English Information Systems in Management****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code IEZ1149****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	120	30			
Form of crediting	Examination	crediting with grade*			
For group of courses mark (X) final course					
Number of ECTS points	4	1			
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basics of information technology
2. Basics of logistics

SUBJECT OBJECTIVES

C1 Knowledge of management information systems for small and medium companies

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W24

PEK_W26

relating to skills:

PEK_U12

PEK_U15

PEK_U16

PEK_U17

relating to social competences:

PEK_K01

PEK_K02

PEK_K07

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	Introduction	2
Lec 2	Basics of information systems	2
Lec 3	Classifications of information systems	2
Lec 4	Integration of information systems	2
Lec 5	Evolution of information systems in management	2
Lec 6	Information systems divided by integration level (SES, MIS, SWD, SBW)	2
Lec 7	Information systems divided by APIS standards (IC, MRP, MRPCL, MRPII, ERP, ERPII)	2
Lec 8	CRM systems	2
Lec 9	Financial and Accounting systems	2
Lec 10	Production systems	2
Lec 11	Inventory control systems	2
Lec 12	HR systems	2
Lec 13	Workflow systems	2
Lec 14	Service Oriented Architecture (SOA) in management	2
Lec 15	Conclusion	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Introduction	2
Cl 2	CRM systems	2
Cl 3	Financial and Accounting systems	2
Cl 4	Production systems	2
Cl 5	Inventory control systems	2
Cl 6	HR systems	2
Cl 7	Workflow systems	2
Cl 8	Conclusion	1
	Total hours	15

TEACHING TOOLS USED
N1. Traditional lecture N2. Self-learning N3. Presentations

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W24 PEK_W26	N1
F2	PEK_U12 PEK_U15 PEK_U16 PEK_U17 PEK_K01 PEK_K02 PEK_K07	N2 N3
C = F1 + F2		
PRIMARY AND SECONDARY LITERATURE		
<p><u>PRIMARY LITERATURE:</u></p> <p>[1] James O'Brien, George Marakas: Management Information Systems, McGraw-Hill/Irwin, 2010 [2] Ken Laudon, Jane Laudon: Management Information Systems, Prentice Hall; 11 edition, 2009 [3] R. Kelly Rainer, Hugh J. Watson: Management Information Systems, Moving Business Forward, Wiley, 2012</p> <p><u>SECONDARY LITERATURE:</u></p> <p>[1] Computerworld magazine</p>		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Adam Wasilewski, adam.wasilewski@pwr.wroc.pl		

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Information Systems in Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W24	K1_ZARZ_W24	C1	Lec1-Lec15	N1
PEK_W26	K1_ZARZ_W26	C1	Lec1-Lec15	N1
PEK_U04	K1_ZARZ_U04	C1	C11-C17	N2, N3
PEK_U12	K1_ZARZ_U12	C1	C11-C17	N2, N3
PEK_U15	K1_ZARZ_U15	C1	C11-C17	N2, N3
PEK_U16	K1_ZARZ_U16	C1	C11-C17	N2, N3
PEK_U17	K1_ZARZ_U17	C1	C11-C17	N2, N3
PEK_K01	K1_ZARZ_K01	C1	C11-C17	N2, N3
PEK_K02	K1_ZARZ_K02	C1	C11-C17	N2, N3
PEK_K07	K1_ZARZ_K07	C1	C11-C17	N2, N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

COURSE DESCRIPTION

Course code

MAP1089

Kind of studies

common to all departments;

Course title

Mathematics

First name, surname and title of the lecturer/supervisor

dr hab. Krzysztof Szajowski, prof. nadzw.

First name, surname and title of the team's members

Lecturers of the Institute of Mathematics and Computer Science

Course structure

Form of class	Lecture	Problems classes	Laboratory	Project	Seminar	Number of points
Number of hours/week	2	2				5+4
Course grade based on	Examination	Test				

Prerequisites

High school graduation

Course description

The course covers the fundamental knowledge of mathematical analysis. During the lectures the limit of sequence will be defined. Also limit of function at point, derivatives and their applications are explained. At the end of the first part of the course some ideas of algebra are provided. The algebraic approach to polynomials and rational functions is given. Matrix and determinants and their application to systems of linear equations is considered.

Lectures

Contents of particular hours

Number of

	hours
1. Fundamentals of logic. Sets and relations.	2
2. Graphs. Sequences. The geometric and arithmetic sequences in applied economics. Limits of sequences. Properties of sequences.	2
3. Limits of a function. Continuous functions. The derivative of a function.	2
4. The geometric application of the derivative. Higher order derivatives and their application. Convex functions.	2
5. Vectors in R^3 . The scalar product. The cross product. Equations of lines and planes.	2
6. Maxima and minima of functions. Complex numbers.	2
7. Polynomials and rational functions. Matrices and matrix operations.	2
8. Determinants and their properties. Methods of solving determinants.	2
9. Systems of linear equations. Cramer`s rule. Gaussian elimination method.	2
10. Definite integrals. Indefinite integrals. Integration by parts and substitution.	2
11. Applications of definite integrals.	2
12. Multivariable Calculus. Function of multiple variables. Partial derivative. The geometric interpretation of partial derivatives.	2
13. Higher order partial derivative.	2
14.	2
15. Extrema of multivariable functions.	2

Problems classes

Contents of particular hours	Number of hours
1. Exercises illustrating the theoretical ideas presented during the lectures will be solved in the problems classes.	30

Material for self preparation

Multivariable mathematical models in economy. The first order ordinary differential equation. Application of differential equations.

Basic literature

1. T. Bednarski, Elementy matematyki w naukach ekonomicznych, Oficyna Ekonomiczna, Kraków 2004
2. M. Gewert, Z. Skoczylas, Analiza matematyczna 1. Definicje, twierdzenia, wzory. Oficyna Wydawnicza GiS, Wrocław 2007
3. M. Gewert, Z. Skoczylas, Analiza matematyczna 1. Przykłady i zadania. Oficyna Wydawnicza GiS, Wrocław 2007
4. T. Jurlewicz, Z. Skoczylas, Algebra liniowa 1. Definicje, twierdzenia, wzory. Oficyna Wydawnicza GiS, Wrocław 2007
5. T. Jurlewicz, Z. Skoczylas, Algebra liniowa 1. Przykłady i zadania. Oficyna Wydawnicza GiS, Wrocław 2007

6. A. Ostoja-Ostaszewski: Matematyka w ekonomii-modele i metody 1. Algebra elementarna, PWN, Warszawa 1996
7. A. Ostoja-Ostaszewski: Matematyka w ekonomii-modele i metody 1. Elementarny rachunek różniczkowy, PWN, Warszawa 1996

Additional literature

1. M. Dobija, W. Smaga: Podstawy matematyki finansowej i ubezpieczeniowej, PWN, Warszawa-Kraków 1995.
2. Alpha C. Chiang: Podstawy ekonomii matematycznej, Państwowe Wydawnictwo Ekonomiczne, Warszawa 1994.

Conditions required for a student to pass the course

Passing written test (for problems classes) and an exam (for lecture).

OPISY KURSÓW/PRZEDMIOTÓW

Kod przedmiotu

MAP1089

Studia

ogólnouczelniane;

Tytuł przedmiotu

Mathematics

Imię, nazwisko i tytuł/stopień prowadzącego

dr hab. Krzysztof Szajowski, prof. nadzw.

Imiona, nazwiska oraz tytuły/stopnie członków zespołu dydaktycznego

Pracownicy naukowo-dydaktyczni i dydaktyczni Instytutu Matematyki i Informatyki

Forma zaliczenia kursu

Forma kursu	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium	Liczba punktów
Tygodniowa liczba godzin	2	2				5+4
Forma zaliczenia	egzamin	zaliczenie				

Wymagania wstępne

Zalecana znajomość matematyki odpowiadająca maturze na poziomie podstawowym

Krótki opis zawartości całego kursu

Kurs dostarcza podstawowych informacji potrzebnych do zrozumienia i konstrukcji modeli matematycznych w ekonomii i technice. Omówione zostaną podstawowe pojęcia i metody logiki matematycznej oraz teorii mnogości. W dalszej części omówione zostanie pojęcie ciągu liczbowego i przykłady zastosowań ciągów w modelach ekonomicznych i finansach. Wprowadzone będzie pojęcie funkcji liczbowej, granica funkcji w punkcie, ciągłość funkcji, wypukłość i inne zagadnienia związane z badaniem funkcji. Omówione będą liczby zespolone, wielomiany i funkcje wymierne. Wprowadzone będzie pojęcie macierzy i wyznaczników oraz ich zastosowanie do przedstawiania i rozwiązywania układów równań liniowych. Kurs przeznaczony dla studiów licencjackich kierunku Zarządzanie Wydziału Informatyki i Zarządzania.

Wykład (podać z dokładnością do 2 godzin)

Zawartość tematyczna	Liczba godzin
1. Podstawy logiki - wnioskowanie dedukcyjne. Zbiory i relacje.	2
2. Grafy. Ciągi i funkcje.	2
3. Liczby zespolone. Wielomiany i funkcje wymierne.	2
4. Macierze, działania, macierzowy zapis równań. Wyznaczniki i ich własności.	2
5. Układy równań liniowych. Metoda eliminacji Gaussa. Metody rozwiązywania układów Cramera. Optymalizacja liniowa.	2
6. Równania prostych i płaszczyzn. Wektory w przestrzeni trójwymiarowej, iloczyn skalarny i wektorowy.	2
7. Granica ciągu. Własności granic ciągów. Zastosowanie postępu arytmetycznego i geometrycznego w ekonomii. Funkcje na \mathbb{R} .	2
8. Granica funkcji w punkcie. Ciągłość funkcji. Asymptoty. Pochodne funkcji.	2
9. Interpretacja geometryczna i fizyczna pochodnej funkcji w punkcie. Zastosowania w ekonomii: krańcowa stopa substytucji.	2
10. Pochodne wyższych rzędów, ich interpretacja i zastosowanie. Badanie funkcji.	2
11. Całki oznaczone. Całki nieoznaczone.	2
12. Całkowanie przez części i podstawianie.	2
13. Funkcje wielu zmiennych. Pochodne cząstkowe. Sens geometryczny pochodnych cząstkowych. Różniczka funkcji dwóch zmiennych. Pochodna funkcji złożonej. Reguła łańcuchowa.	2
14. Różniczkowanie funkcji uwikłanej. Gradient. Zastosowania w ekonomii- krańcowa dochodowość pracy w zależności od nakładów pracy.	2
15. Optymalizacja przy dwóch zmiennych.	2

Ćwiczenia

Zawartość tematyczna	Liczba godzin
1. Zadania ilustrujące materiał podany na wykładzie.	30

Materiał do samodzielnego opracowania

Sposoby obliczania wyznaczników. Zastosowanie całek oznaczonych. Przykłady zastosowania metod analizy matematycznej w ekonomii. Wprowadzenie do równań różniczkowych. Równania o zmiennych rozdzielonych.

Literatura podstawowa

1. T. Bednarski, Elementy matematyki w naukach ekonomicznych, Oficyna Ekonomiczna, Kraków 2004.
2. J. Banaś, Podstawy matematyki dla ekonomistów, WNT, Warszawa 2005.
3. T. Jurlewicz, Z. Skoczylas, Algebra liniowa 1. Definicje, twierdzenia, wzory, Oficyna Wydawnicza GiS, Wrocław 2007.

4. T. Jurliewicz, Z. Skoczylas, Algebra liniowa 1. Przykłady i zadania, Oficyna Wydawnicza GiS, Wrocław 2007.
5. M. Gewert, Z. Skoczylas, Analiza matematyczna 1. Definicje, twierdzenia, wzory, Oficyna Wydawnicza GiS, Wrocław 2007.
6. M. Gewert, Z. Skoczylas, Analiza matematyczna 1. Przykłady i zadania, Oficyna Wydawnicza GiS, Wrocław 2007.

Literatura uzupełniająca

1. A. C. Chiang, Podstawy ekonomii matematycznej, PWE, Warszawa 1994.
2. M. Dobija, W. Smaga, Podstawy matematyki finansowej i ubezpieczeniowej, PWN, Warszawa-Kraków 1995.
3. A. Ostoja-Ostaszewski, Matematyka w ekonomii-modele i metody 1. Elementarny rachunek różniczkowy, PWN, Warszawa 1996.
4. A. Ostoja-Ostaszewski, Matematyka w ekonomii-modele i metody 1. Algebra elementarna, PWN, Warszawa 1996.

Warunki zaliczenia

Pozytywny wynik kolokwium (ćwiczenia) i egzaminu (wykład).

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT

SUBJECT CARD**Name in Polish : Statystyka Opisowa****Name in English : Descriptive Statistics****Main field of study (if applicable): Management****Specialization (if applicable): Enterprise Management****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code MAZ1130****Group of courses NO***

	Lecture	Problems Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	120	60			
Form of crediting	Examination	crediting with grade*			
For group of courses mark (X) final course					
Number of ECTS points	4	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0.5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge of mathematical analysis: extremes of functions, differential and integral calculus with one or several variables.
2. Knowledge of basic matrix algebra.
3. Ability to use computer packages for data management.

SUBJECT OBJECTIVES

- C1 To gain knowledge of the fundamentals of probability theory.
 C2 To learn to use common methods of describing data.
 C3 To be able to carry out statistical analysis based on empirical data.
 C4 Appreciation of the potential of probabilistic models when events have uncertain outcomes.
 C5 To understand and apply methods of probabilistic modelling.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 The student will know the basic tools of descriptive statistics and understand the fundamental concepts of probability theory.

relating to skills:

PEK_U01 The student will be able to analyze statistical data and interpret the results of such analysis.

PEK_U02 The student will be able to construct simple probabilistic models useful in the management process.

PEK_U03 The student will understand the need to consider appropriate probabilistic models in the analysis of statistical data.

...

relating to social competences:

PEK_K01 The student will be able to make a critical appraisal of a probabilistic model describing simple socio-economic processes.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Probability spaces, univariate random variables, the distribution of a random variable.	3
Lec 2	The parameters of a univariate random variable	2
Lec 3	Standard probability distributions, the normal distribution	3
Lec 4	Multivariate random variables. Conditional and marginal distributions. Independent random variables.	2
Lec 5	Parameters of the distribution of a multivariate random variable. The correlation coefficient. Probabilistic regression	2
Lec 6	The law of large numbers. The central limit theorem.	2
Lec 7	General population, sample, representative sample, (simple) random sample. Statistical inference. The fundamental concepts of statistics.	2
Lec 8	Statistical data. Graphical presentation of statistical data.	2
Lec 9	Numerical presentation of statistical data. Measures of centrality, dispersion and asymmetry.	4
Lec 10	The distribution of the sample mean and sample proportion	2
Lec 11	Estimators of the parameters of a distribution. Method of moments and maximum likelihood method.	2
Lec 12	Interval estimation	2
Lec 13	The fundamental concepts of statistical testing	2
	Total hours	30

Form of classes - problems class		Number of hours
Cl 1	Classical interpretation of probability. Conditional probability. Bayes' theorems. Concept of a random variable and a probability distribution	3

C1 2	The parameters of a probability distribution and their interpretation.	1
C1 3	0-1, binomial and Poisson distributions and their applications. The normal distribution. Calculating probabilities for the normal distribution.	2
C1 4	Multivariate random variables. Correlation coefficient and its interpretation.	2
C1 5	The central limit theorem and its applications	2
C1 6	Graphical presentation of data: histogram, bar charts, empirical distribution, theoretical distribution	2
C1 7	Point estimation, interval estimation, applications in economics	1
C1 8	End of course test	2
	Total hours	

TEACHING TOOLS USED

- N1. Lists of exercises for the problems classes.
N2. Lists of exercises for studying.
N3. Examples of applications in everyday problems, management and economics.
N4. Written test.
N5. Presentation of additional problems and applications.

EVALUATION OF ACHIEVEMENT OF THE COURSE GOALS

Evaluation (F continuous – (during the semester), C – concluding (at the end of the semester))	Educational effect number	Way of evaluating the achievement of course goals
F1	PEK_U01	Assessment of a report based on the numerical and graphical presentation of statistical data in the second half of the semester.
F2	PEK_U02	Assessment on the basis of solutions to the additional problems set by the lecturer.
F3	PEK_U03	Assessment on the basis of solutions to problems solved during the problems classes.
F4	PEK_K01	Assessment of students' ability to independently apply concepts of probabilistic modelling.
C1	PEK_W01	Written test
C2	PEK_U01	Written test

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Sinaj J. G. *Probability theory: an introductory course*. Springer-Verlag, Berlin.
- [2] Weiers R.M. *Introduction to business statistics*. Thompson Brooks/Coole, Belmont.
- [3] Kvanli A. H., Pavur R. J. and Guynes C. S. *Introduction to business statistics: a computer integrated, data analysis approach*. South-Western College Publishing, Cincinnati.

SECONDARY LITERATURE:

- [1] Ross S. M. *Introduction to probability and statistics for engineers and scientists*. Academic press, Burlington.
- [2] Lewis M. *Applied statistics for economists*. Routledge, London.
- [3] Wilcox R. R., Boca R. *Modern statistics for the social and behavioral sciences: a practical introduction*. CRC press, Raton, Fla.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

David Ramsey, david.ramsey@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Descriptive Statistics
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
SPECIALIZATION: **Enterprise Management****

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W25	C1, C2, C3	Lec1-Lec13	N4, N5
PEK_U01 (skills)	K1_ZARZ_U15, K1_ZARZ_U14	C3, C4, C5	Lec7-Lec13 C15-C18	N1, N2, N3, N4
PEK_U02	K1_ZARZ_U15, K1_ZARZ_U14	C3, C4, C5	Lec4-Lec13 C12-C18	N1, N2, N3, N4
PEK_U03	K1_ZARZ_U15, K1_ZARZ_U14	C4, C5	Lec4-Lec13 C12-C18	N5
PEK_K01 (competences)	K1_ZARZ_K08	C4, C5	Lec6-Lec13 C13-C18	N5

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY Computer Science and Management**SUBJECT CARD****Name in Polish** Matematyka ekonomiczna**Name in English** Economical Mathematics**Main field of study (if applicable):** Management**Specialization (if applicable):** Organizational Management (OM)**Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** MAZ1131W, MAZ1131C**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30		15		
Number of hours of total student workload (CNPS)	120		60		
Form of crediting	exam		crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	4		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	1		0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge of mathematics and statistics

SUBJECT OBJECTIVES

C1. Getting to know the mathematical methods and tools used in economics in the following area

C1.1. The theory of change of money over time

C1.2. The future lifetime of an individual and models of life insurance

C1.3. Preferences, utility and random utility

C1.4. Theory of production and demand

C1.5. Game theory

C2. The ability of interpretation and quantitative analysis in the following area

C2.1. The theory of change of money over time

C2.2. The future lifetime of an individual and models of life insurance

C2.3. Preferences, utility and random utility

C2.4. Game theory

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 – has a broad knowledge of mathematics and know its usefulness and usability in economics.

PEK_W02 – knows the value of money changes over time; familiar with mathematical tools that allows to determine the value of money.

PEK_W03 – has knowledge of the factors affecting the shape of the life insurance premiums; knows method of calculating premiums.

PEK_W04 – knows the mathematical theories of economics relating to utility theory, preferences, demand and production.

PEK_W05 – has knowledge of the mathematical theory of conflict (game theory) and knows its place and relevance in the economy.

relating to skills:

PEK_U01 – able to use formal methods and compare offers of financial institutions in the field of investments, loans and mortgages.

PEK_U02 – able to correctly calculate, depending on the assumptions, the value of life insurance premiums.

PEK_U03 – able to apply the theory of preference and utility to build discrete choice models

PEK_U04 – can formulate decision problems such as the allocation of costs, competitive decision making, management-labor arbitration in game theory and find their solution.

relating to social competences:

PEK_K01 –is well-prepared to critically evaluation of the economic problem's solutions and his/her views and arguments can defend using mathematical tools.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	The growth of money I: basic definitions (interest, principal, accumulation and amount function), simple and compound interest, annual and periodic percentage rate, exact and ordinal simple interest, bank's rule, continuous compounding.	2
Lec 2	The growth of money II: invest in advance and effective discount rate, discount function, simple and compound discount, nominal rates of interest and discount, force of interest, inflation.	2
Lec 3	Annuities: annuities-immediate, annuities-due, annuity perpetuities, annuities with payments in geometric and arithmetic progression.	2
Lec 4	Loans: calculating the payment amount, comparing loans.	2
Lec 5	Individual risk models for a short term.	2
Lec 6	Survival distribution and life table: probability for the age-at-death, relation of life table functions to survival function, deterministic survivorship group.	2
Lec 7	Life insurance: insurance payable at the moment of death and at the end of the year of death; continuous life annuities, discrete life annuities, life annuities with monthly payments.	2
Lec 8	Preferences measurement.	2

Lec 9	Mathematical utility theory; random utility models	2
Lec 10	Mathematical theory of demand.	2
Lec 11	Mathematical theory of production.	2
Lec 12	Two-person zero-sum games: matrix games, dominance and saddle points, mixed strategies, application to comparative decision making	2
Lec 13	Two-person non-zero-sum games: Nash equilibria and non-cooperative solutions, the Nash arbitration scheme and cooperative solutions, application to management-labor arbitration and the duopoly problem	2
Lec 14	N-person games: imputations, domination and stable sets, strategic voting	2
Lec 15	Summary	2
	Total hours	30
Form of classes - laboratory		Number of hours
Cl 1	Calculation simple and compound interest as well as rates of discount	3
Cl 2	Determination the loan installments	2
Cl 3	Calculation the value of life insurance premiums	2
Cl 4	Preference and probability of choice	2
Cl 5	Dominance and saddle points in matrix game, solving the matrix games when mixed strategic is used	2
Cl 6	Finding Nash equilibria	2
Cl 7	Written test	2
	Total hours	15
TEACHING TOOLS USED		
N1. Presentation N2. Information lecture N3. Own work - preparation for class		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01 - PEK_U04	Written test
F2	PEK_W01-PEK_W04	Exam
P = F1 + 2F2		

PRIMARY AND SECONDARY LITERATURE
<u>PRIMARY LITERATURE:</u> [1] Kellison S.G. (2008) <i>The Theory of Interest</i> , McGraw-Hill/Irwin. [2] Bowers N.L., Gerber H.U., Hickman J.C., Jones D.A., Nesbitt C.J. (1997), <i>Actuarial Mathematics</i> , Society of Actuaries. [3] <i>Game theory</i> /ed. by Steven N. Durlauf, Lawrence E. Blume. Basingstoke : Palgrave Macmillan, 2010.
<u>SECONDARY LITERATURE:</u> [1] Wainwright K., Chiang A. (2004) <i>Fundamental Methods of Mathematical Economics</i> . McGraw-Hill/Irwin. [2] Timothy J. Coelli T.J., Rao D.S. P., O'Donnell Ch.J., Battese G. E. (2005) <i>An Introduction to Efficiency and Productivity Analysis</i> , Springer.
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)
Robert, Kapłan, robert@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Economical Mathematics
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Organizational Management (OM)
AND SPECIALIZATION

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 PEK_W02	K1_ZARZ_W03, K1_ZARZ_W23, K1_ZARZ_W11	C1.1	Lec1-Lec4, Lec15	N1, N2
PEK_W01 PEK_W03	K1_ZARZ_W03, K1_ZARZ_W23, K1_ZARZ_W25	C1.2	Lec5-Lec7, Lec15	N1, N2
PEK_W01 PEK_W04	K1_ZARZ_W03, K1_ZARZ_W23	C1.3, C1.4	Lec8-Lec11, Lec15	N1, N2
PEK_W01 PEK_W05	K1_ZARZ_W01, K1_ZARZ_W03, K1_ZARZ_W23, K1_ZARZ_W24	C1.5	Lec12-Lec15	N1, N2
PEK_U01	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17, K1_ZARZ_U4, K1_ZARZ_U5	C2.1	Cl 1, Cl 2	N3
PEK_U02	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17, K1_ZARZ_U4, K1_ZARZ_U5	C2.2	Cl 3	N3
PEK_U03	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17, K1_ZARZ_U4, K1_ZARZ_U5	C2.3	Cl 4	N3
PEK_U04	K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17, K1_ZARZ_U4, K1_ZARZ_U5	C2.4	Cl 5, Cl 6	N3
PEK_K01	K1_ZARZ_K08, K1_ZARZ_K09	C1.1-C1.5 C2.1-C2.4	Lec1-Lec15 Cl 1 – Cl 6	N1, N2, N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish Prawo cywilne i handlowe****Name in English Civil and commercial law****Main field of study (if applicable): Management****Specialization (if applicable): ORGANIZATIONAL MANAGEMENT (OM)****Level and form of studies: 1st/ 2nd* level, full-time / part-time*****Kind of subject: obligatory****Subject code PRZ1121W PRZ1121Ć****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	60	60			
Form of crediting	Written examination	Charging for the assessment			
For group of courses mark (X) final course					
Number of ECTS points	2	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,25			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge bases rights

OBJECTIVES

C1 The object is to illustrate the importance of civil law and commercial in economic activity

C2 In the course courses explanation of the grounds of civil law and commercial, guided by the study within the scope and the future professional practice graduates

C3 In the course courses in detail the content of the general part on civil law, right in rem, the rights and obligations of commercial law

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W03

- it knows and it explains essence of modern change in marketing strategies and problems and challenges with development of (evolution of) information society valid , development of (evolution of) new communication technology and appearance new kind of consumer (proconsumers)

relating to skills:

PEK_U03

- it can identify, interpret and assess developments of our civilization, technological and cultural changes in organization and its surroundings and seize acquired knowledge to solving the problems of management and marketing in the organization

relating to social competences:

PEK_K01

- is aware of the need to develop their professional knowledge and skills.

In the sciences of the organization and management. It can on its own develop the knowledge and improve skills.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	General characteristics of civil law. Source of civil law	2
Lec 2	The standards of civil law. The use of civil law. Natural persons. Legal Persons	2
Lec 3	Ownership and other rights in rem. Legal protection of intellectual	2
Lec 4	Commitments-the nature and nature legal obligations. Types of commitments. Agreement as a source commitments	2
Lec 5	The concept of commercial law and its source	2
Lec6	The economic activity-basic concepts statutory	2
Lec7	Commercial Companies personal and economic capital on the market	2
Lec8	Characteristics other major types of enterprises	2
Lec9	Cease existence legal business-bankruptcy procedures and remedial action	2

Lec10	Securities-types and characteristics	2
Lec11	Legal protection fair competition in economic activity	2
Lec12	Judicial settlement of economic affairs	2
Lec13	The legal basis of the business environment in the European Union	2
Lec14	The conditions and procedures legal establishment and operation of	2

	economic activities in the countries of the European Union	
Lec15	Benefits and costs associated with setting up of economic activities in the selected countries of the European Union	2
	Total hours	30

Form of classes - class		Number of hours
C1 1	The concept and types legal acts. Legal form. The Delegation and representation in the rules of civil law	2
C1 2	Right Commission-types rights. Law enforcement personal	2
C1 3	Starting a business - legal conditions and procedures	2
C1 4	The establishment of economic activities-legal conditions and procedure	2
C5	Commercial companies and their personal characteristics	2
C6	The company partnership,, the company limited-SE-conditions for the formation and economic activity	2
C7	Conditions and methods of preparation which may give rise starting a trading company and strong capital-specificity contractual forms and records	3
	Total hours	15

Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	

Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	

Form of classes - seminar		Number of hours
Sem 1		

Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED	
N1.	
N2.	
N3.	

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W03	Written test
P=1		

PRIMARY AND SECONDARY LITERATURE
<u>PRIMARY LITERATURE:</u>
[1] „The Commercial Companies Code, Wyd. C.H.Beck, Warszawa 2010
[2] Bińkowska M., Niemirska-Fido K., Richard A. Walawader, The Bankruptcy and Reorganisation Law, Wyd. C.H. Beck, Warszawa 2010
[2] Konieczna-Purchała A., Practical english for lawyers, Wyd. C.H. Beck, Warszawa 2009
[3] Ożga E., The great dictionary of law and economic, Wyd. C.H.Beck, Warszawa 2009
[4] Jaślan H., Jaślan J., Słownik terminologii prawniczej i ekonomicznej angielsko-polski, Wyd. C.H. Beck, Warszawa 2009
[5] Frankowski S., <i>Introduction to the Polish Law</i> , Wyd. Kluwer Law International, Warszawa 2005
[6] Kienkowska D. (Ed.), <i>The Polish Law Collection. Business Law</i> , Warszawa 2004
[7] Gil I., Marszałkowska-Krześ E., Code of civil procedure, Wyd. Wolters Kluwer Warszawa 2011
[8] ” <i>Handbook of Polish Law</i> ”, Wyd. szkolne PWN Warszawa 2011
[9] Dereń A.M., Zarys prawa cywilnego w pytaniach i odpowiedziach, Oficyna Wydawnicza PWSZ Nysa 2008
<u>SECONDARY LITERATURE:</u>
1) Kodeks cywilny Civil Code – wydanie dwujęzyczne , Wyd. Wolters Kluwer warszawa 2011
[2]The Commercial Companies Code – wydanie dwujęzyczne, Wyd. C.H.Beck Warszawa2010
[3] Rossini C., English as a legal Language, London 1998
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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT

FACULTY of Computer Science and Management**SUBJECT CARD****Name in Polish: Psychologia****Name in English: Psychology****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st full-time****Kind of subject: obligatory****Subject code PSZ1119W****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	30				
Form of crediting	crediting with grade				
For group of courses mark (X) final course					
Number of ECTS points	1				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

- 1.
- 2.
- 3.

SUBJECT OBJECTIVES

C1 To give students the basic knowledge about psychology as a science

C2 To give students the main idea about cognition, motivation and social influence as a base for leadership

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Student understand what the psychology is and what are the its main areas and methods

PEK_W02 Student knows the basic ideas connected with cognition, emotion, motivation and social influence

...

relating to skills:

PEK_U01

PEK_U02

...

relating to social competences:

PEK_K01

PEK_K02

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Psychology as a science	2
Lec 2	Introduction to methodology	2
Lec 3	Learning	2
Lec 4	Motivation	2
Lec 5	Emotion	2
Lec 6	Perception	2
Lec 7	Memory	2
Lec 8	Thought and intelligence	2
Lec 9	Attitudes, attributions and social cognition	2
Lec 10	Personality	2
Lec 11	Interpersonal Relations	2
Lec 12	Group Processes	2
Lec 13	Social Influence	2
Lec 14	Colloquium	2
Lec 15	Summary and final discussion	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1		
Cl 2		
Cl 3		
Cl 4		
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		

	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1.Multimedia displays		
N2.Lecture.		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1		
F2		
F3		
C - test		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Hewstone, M., Fincham, F. D., Foster, J. (ed) (2005) *Psychology* Oxford: Blackwell Publishing
 [2] Hock, R. R. (2009) *Forty Studies That Changed Psychology* London: Pearson Prentice Hall (Pearson Education International)

SECONDARY LITERATURE:

- [1] Holt, N., Lewis, R. (2010) *AS Level Psychology* Camrthen: Crown House Publishing Ltd
 [2] Cialdini, R. B., *Influence. Science and Practice* Boston: Allyn and Bacon

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
.....Psychology.....
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
...Management.....
AND SPECIALIZATION ...Organizational Management.....

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W17	C1	Lec1, Lec2	N1, N2
PEK_W02	K1_ZARZ_W17	C2	Lec2-Lec13, Lec15	N1, N2
PEK_U01 (skills)				
PEK_U02				
PEK_K01 (competences)				
PEK_K02				

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD**

Name in Polish Socjologia
Name in English Sociology
Main field of study (if applicable): Management
Specialization (if applicable): Organisational Management
Level and form of studies: 1st level, full-time
Kind of subject: obligatory
Subject code SCZ1110W
Group of courses NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	30				
Form of crediting	crediting with grade				
For group of courses mark (X) final course					
Number of ECTS points	1				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. In view of the elementary and widening character of the subject matter is not required specific prerequisites. The student should have a general knowledge in the field of high school.

SUBJECT OBJECTIVES

- C1 Transfer of general knowledge about the mechanisms of social life
 C2 Transfer of general knowledge about social and professional roles and their circumstances.
 C3 Getting acquainted with the methods and techniques of sociological research

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

- PEK_W01 student understands and can describes the mechanisms of social construction of personality, presents requirements and conflicts of social roles, understands the role of culture in the functioning of society and social groups
 PEK_W02 student identifies and classifies social ties, indicates levels of social integration, understands the essence of the concept of social capital
 PEK_W03 student understands the role of indicating the consequences of belonging to a social network

PEK_W04 student identifies basic social processes, understands the nature of conflict, change and social adaptation
 PEK_W05 student identifies the basic tools of sociological research and knows the rules of construction

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to sociology	2
Lec 2	The concepts of sociology and sociology of organizations	2
Lec 3	Culture and its social significance. Culture of organization	2
Lec 4	Sociological theories of society	2
Lec 5	Sociological theories of organization	2
Lec 6	Microsociology - social actions, interactions and social relationships, role and social status	2
Lec 7	Mezosociology - social groups, social interactions in the work process, the team in the organization	2
Lec 8	Macrosociology- social classes, social inequalities, state, types of social order and the nature of the economic system	2
Lec 9	Social processes-factors and the theory of social change, contemporary processes of changing social life and culture, collective activity	2
Lec10	Economy- individual as a producer, the consumer and the holder in sociological perspective , the social dimension of management, homo economicus and homo socius	2
Lec 11	Social aspects of work	2
Lec 12	Sociological study of reality.	2
Lec 13	Tools of sociology. Research methods and techniques	2
Lec 14	Practical application of sociology: diagnosis of social problems, social policy, social ethic and responsibility	2
Lec 15	Selected problems of modern societies and organizations	2
	Total hours	30
Form of classes – class		Number of hours
Cl 1		
Cl 2		
Cl 3		
	Total hours	
Form of classes – laboratory		Number of hours
Lab 1		
Lab 2		

Lab 3		
	Total hours	
Form of classes – Project		Number of hours
Proj 1		
Proj 2		
Proj 3		
	Total hours	
Form of classes – seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
	Total hours	
TEACHING TOOLS USED		
N1. Lecture		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1=P		
P	PEK_W01 PEK_W02 PEK_W03 PEK_W04 PEK_W05	Written exam-test

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Browne k., An introduction to sociology, Polity, 2011, 4th edition
- [2] Giddens A., *Sociology*, John Wiley & Sons, 2009, 6th edition
- [3] *Sociology. Making sense of society*, Marsh I., Keating M. (ed.), Pearson Education, 2005

SECONDARY LITERATURE:

- [1] Ferrante J., *Sociology. A global perspective*. Wadsworth, Cengage learning, 2010
- [2] Scott J., *Sociology. A key concepts*, Routledge 2006

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Sociology
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organisational Management

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W01 K1_ZARZ_W06 K1_ZARZ_W17	O1, O2	Lec1, Lec2, Lec5	N1
PEK_W02	K1_ZARZ_W12 K1_ZARZ_W17	C1, C2	Lec6, Lec7, Lec8	N1
PEK_W03	K1_ZARZ_W17 K1_ZARZ_W19	C2	Lec3, Lec 4, Lec11	N1
PEK_W04	K1_ZARZ_W08 K1_ZARZ_W17	C2	Lec 9, Lec10, Lec15	N1
PEK_W05	K1_ZARZ_W17 K1_ZARZ_U14	C3	Lec 12, Lec 13, Lec14	N1
PEK_U01 (skills)				
PEK_U02				
...				
PEK_K01 (competences)				
PEK_K02				
...				

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY Computer Science and Management**SUBJECT CARD****Name in Polish** Podstawy zarządzania**Name in English** Essentials of Management**Main field of study (if applicable):** Management**Specialization (if applicable):** **Organizational Management (OM)****Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** ZMZ1242**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30	-	-	-
Number of hours of total student workload (CNPS)	120	60	-	-	-
Form of crediting	exam	credit with a grade	-	-	-
For group of courses mark (X) final course	-	-	-	-	-
Number of ECTS points	4	2	-	-	-
including number of ECTS points for practical (P) classes	-	2	-	-	-
including number of ECTS points for direct teacher-student contact (BK) classes	1	1	-	-	-

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

-

SUBJECT OBJECTIVES

To ensure fundamental knowledge (including application aspects) about:

C1. characteristics, elements and types of organizations, and the impact of the environment on organizational operations,

C2. management processes, functions, principles and tools,

C3. key management issues,

C4. organizational effectiveness.

To ensure fundamental skills to:

C5. analyze and evaluate selected characteristics of the organization,

C6. analyze and evaluate selected internal and inter-organizational relationships.

SUBJECT EDUCATIONAL EFFECTS**relating to knowledge:**

PEK_W01 - has a basic knowledge about the characteristics, elements and types of organizations

PEK_W02 – understands basic management processes, functions, principles and tools

PEK_W03 - explains and illustrates the impact of the environment on the operations of the organization

PEK_W04 – identifies the basic management issues

PEK_W05 – understands the organizational efficiency concept

relating to skills:

PEK_U01 - analyzes and evaluates (at a basic level) the objectives, characteristics and elements of the organization
 PEK_U02 - analyzes and evaluates (at a basic level) internal and inter-organizational relationships
 PEK_U03 - identifies and analyzes basic management issues
relating to social competences:
 PEK_K01 - is aware of the need to develop knowledge and skills in the science of organization and management
 PEK_K02 - is aware that manager's job is to continuously identify, analyze and resolve issues in organizations
 PEK_K03 - is prepared to express and defend his/her views, and to persuade others to his/her views
 PEK_K04 - is aware that managers have to comply with appropriate – professional and ethical standards.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to management and organization	2
Lec 2-3	Definition of organization. The model of organization. Organization and its environment	4
Lec 4	Definition of management and management process	2
Lec 5	Manager and foundations of decision making	2
Lec 6-7	Planning as a management function	4
Lec 8-9	Organizing as a management function: building organizational structure, structure-creating factors, typology of organizational structures	4
Lec 10	Organizing as a management function: staffing and human resource management	2
Lec 11	Leading as a management function: power in organizations, essence of managers' job, managerial roles and skills, leadership styles	2
Lec 12	Leading as a management function: motivating	2
Lec 13	Controlling as a management function.	2
Lec 14	Organization and organizational effectiveness	2
Lec 15	Operations Management	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Introduction to classes	2
Cl 2-3	Elements of organizational model – case studies	4
Cl 4	Goals formulating, organizational goals hierarchy	2
Cl 5	Foundations of Individual Behavior	2
Cl 6	Understanding Groups and Managing Work Teams	2
Cl 7	Organizational culture definition	2
Cl 8	Organizational culture changing	2
Cl 9	Organizational structure – key dimensions I	2
Cl 10	Organizational structure – key dimensions II	2
Cl 11	Organizational structure building	2

CI 12	Technology	2
CI 13	Organizational environment	2
CI 14	Managing organizational effectiveness	2
CI 15	Final assessment	2
	Total hours	30

TEACHING TOOLS USED

- N1. Traditional lecture with multimedia presentations
N2. Questions to students during lecture
N3. Case studies presented during lecture
N4. Discussion of selected issues
N5. Case studies solving (independently by student or jointly with other students)
N6. Self-study: classes preparation and final assessment preparation
N7. Presentations prepared by students

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01-3	Quizzes (during classes)
F2	PEK_U01-3, PEK_K01-4	Scoring students' involvement and presentations (during classes)
C1	Final mark consists of F1(60%) and F2 (40%)	
C2	PEK_W01-5	Exam

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Robbins S.P., DeCenzo D.: Fundamentals of management: essential concepts and applications, Pearson/Prentice Hall, 2008.
[2] Robbins S.P., Barnwell N.: Organization Theory, Person, 2006.

SECONDARY LITERATURE:

- [1] Griffin R.W.: Management, Houghton Mifflin Company, New York 2008.
[2] Jones G.R., George J.M., Essentials of contemporary management, McGraw-Hill Irwin, Boston 2007 (2006).
[3] Robbins S.P., Coulter M.: Management, Pearson/Prentice Hall, 2009.

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Essentials of Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Management
AND SPECIALIZATION OM

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W01, K1_ZARZ_W05, K1_ZARZ_W08, K1_ZARZ_W12-13, K1_ZARZ_W17-18	C1	Lec2-3, C12-13	N1-3, N6
PEK_W02	K1_ZARZ_W01, K1_ZARZ_W07, K1_ZARZ_W08, K1_ZARZ_W09, K1_ZARZ_W13-21	C2	Lec4-13,15	N1-3, N6
PEK_W03	K1_ZARZ_W01, K1_ZARZ_W06, K1_ZARZ_W16	C1	Lec2-3,6-7, C13	N1-3, N6
PEK_W04	K1_ZARZ_W01, K1_ZARZ_W06, K1_ZARZ_W07, K1_ZARZ_W09, K1_ZARZ_W16-21	C3	Lec1-15	N1-3, N6
PEK_W05	K1_ZARZ_W01, K1_ZARZ_W09	C4	C14	N3-4, N6
PEK_U01	K1_ZARZ_U01-2, K1_ZARZ_U04-6, K1_ZARZ_U10, K1_ZARZ_U14-18	C5	C12 -12	N3-7
PEK_U02	K1_ZARZ_U01-2, K1_ZARZ_U04-5, K1_ZARZ_U14-8	C6	C12-13	N3-7
PEK_U03	K1_ZARZ_U01, K1_ZARZ_U03-4, K1_ZARZ_U05, K1_ZARZ_U07-11, K1_ZARZ_U14-18	C3	C11-15	N3-7
PEK_K01	K1_ZARZ_K01	C1-6	Lec1-15, C11-15	N-4
PEK_K02	K1_ZARZ_K04, K1_ZARZ_K03, K1_ZARZ_K05-7	C1-6	Lec1-15, C11-15	N-4
PEK_K03	K1_ZARZ_K08, K1_ZARZ_K02	C5-6	C12-14	N7, N4
PEK_K04	K1_ZARZ_K09	C1-6	Lec1-15, C11-15	N-4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AD MANAGEMENT**SUBJECT CARD****Name in Polish Nauka o organizacji****Name in English Organizational Science****Main field of study (if applicable): Management****Specialization (if applicable): **Organizational Management (OM)******Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code ZMZ1243****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15	-	-	-
Number of hours of total student workload (CNPS)	60	30	-	-	-
Form of crediting	credit with a grade	credit with a grade	-	-	-
For group of courses mark (X) final course	-	-	-	-	-
Number of ECTS points	2	1	-	-	-
including number of ECTS points for practical (P) classes	-	1	-	-	-
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5	-	-	-

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**relating to knowledge:**

PEK_W01 - has a basic knowledge about the characteristics, elements and types of organizations

PEK_W02 – understands basic management processes, functions, principles and tools

PEK_W03 - explains and illustrates the impact of the environment on the operations of the organization

PEK_W04 – identifies the basic management issues

PEK_W05 – understands the organizational efficiency concept

relating to skills:

PEK_U01 - analyzes and evaluates (at a basic level) the objectives, characteristics and elements of the organization

PEK_U02 - analyzes and evaluates (at a basic level) internal and inter-organizational relationships

PEK_U03 - identifies and analyzes basic management issues

relating to social competences:

PEK_K01 - is aware of the need to develop knowledge and skills in the science of organization and management

PEK_K02 - is aware that manager's job is to continuously identify, analyze and resolve issues in organizations

PEK_K03 - is prepared to express and defend his/her views, and to persuade others to his/her views

PEK_K04 – is aware that managers have to comply with appropriate – professional and ethical

standards.

SUBJECT OBJECTIVES

To ensure fundamental knowledge (including application aspects) about:

C1. types of organizations and their organizational and legal forms

C2. the impact of the environment on organizational operations (including global environment issues)

C3. organizational development dynamics and characteristics of the organization in various development phases

C4. organization as a system of functions, processes and operations within the organization

C5. inter-organizational relationships (incl. corporate social responsibility issues)

To ensure fundamental skills to:

C6. identify and evaluate organizational and legal forms for selected organization

C7. analyze and evaluate the organization as a system of functions, processes and operations

C8. analyze and evaluate the organization in its different life cycle stages

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 – has a basic knowledge about types of organizations and their organizational and legal forms

PEK_W02 – explains and illustrates the impact of the environment on the operations of the organization including global environment issues

PEK_W03 – has a basic knowledge about of forming and functioning of the organization, understands organizational development stages

PEK_W04 – explains and illustrates the organization as a system of functions, processes and operations

PEK_W05 – has basic knowledge about inter-organizational relationships

relating to skills:

PEK_U01 – analyzes and evaluates (at a basic level) the organizational and legal forms of organizations

PEK_U02 – analyzes and evaluates (at a basic level) the organization as a system of functions, processes and projects

PEK_U03 – analyzes and evaluates (at a basic level) organizational designs and work positions

PEK_U04 – analyzes and evaluates (at a basic level) organizations in different life cycle stages

relating to social competences:

PEK_K01 - is aware of the need to develop knowledge and skills in the science of organization and management

PEK_K02 - is aware that manager's job is to continuously identify, analyze and resolve issues in organizations

PEK_K03 - is prepared to express and defend his/her views, and to persuade others to his/her views

PEK_K04 – is aware that managers have to comply with appropriate – professional and ethical standards

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec1	Introduction to organizational science	2
Lec2	Ownership status. Organizational and legal forms of enterprises. Corporate governance	2
Lec3	Managing the environment	2

Lec4	Entrepreneurship, manager, organization – the essence and relations	2
Lec5	Organization as a system of functions, processes and operations	2
Lec6-7	Designing organizational structure	4
Lec8	Resources, property, potential and capital of organization – tasks and principles of functioning, relationships and developing tendencies.	2
Lec9	Communication, information and management	2
Lec10-11	Organizational transformations: birth, growth, decline, and death	4
Lec12	Managing organizational change	2
Lec13	Managing conflict, power, and politics	2
Lec14	Inter-organizational cooperation	2
Lec15	Corporate Social Responsibility	2
	Total hours	30

Form of classes - class		Number of hours
CI1	Introduction to organizational science classes	1
CI2	Organizational and legal forms of enterprises	2
CI3	Cross-cultural management issues	2
CI4	Organization as a system of functions, processes and operations.	2
CI5	Analysis and evaluation of organizational structure	2
CI6	Analysis of work position (obligations, authority and responsibility)	2
CI7	Managing organizational growth and decline	2
CI8	Corporate Social Responsibility	2
	Total hours	15

TEACHING TOOLS USED

- N1. Traditional lecture with multimedia presentations
N2. Questions to students during lecture
N3. Case studies presented during lecture
N4. Discussion of selected issues
N5. Case studies solving (independently by student or jointly with other students)
N6. Self-study: classes preparation and final assessment preparation
N7. Presentations prepared by students

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), C – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01-4	Quizzes (during classes)
F2	PEK_U01-4, PEK_K01-4	Scoring students' involvement and presentations (during classes)
C1	Final mark consists of F1(60%) and F2 (40%)	
F3 = C2	PEK_W01-5	Exam

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Robbins S.P., DeCenzo D.: Fundamentals of management: essential concepts and applications, Pearson/Prentice Hall, 2008.
- [2] Robbins S.P., Barnwell N.: Organization Theory, Person, 2006.

SECONDARY LITERATURE:

- [1] Easterby-Smith M., Thorpe R., Jackson P.R.: Management research, SAGE Publications, Los Angeles 2008.
- [2] Griffin R.W.: Management, Houghton Mifflin Company, New York 2008.
- [3] Jones G.R., George J.M., Essentials of contemporary management, McGraw-Hill Irwin, Boston 2007 (2006).
- [4] Koźmiński A.K.: Management in transition, Difin, Warsaw 2008.
- [5] McKee A.: Management: a focus on leaders, Pearson, Boston 2012.
- [6] Messick D.M., Kramer R.M.: The psychology of leadership: new perspectives and research, Lawrence Erlbaum Associates, London 2005.
- [7] Robbins S.P., Coulter M.: Management, Pearson/Prentice Hall, 2009.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Organizational Science
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **OM**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W05	C-1	Lec1-2	N1-3, N6
PEK_W02	K1_ZARZ_W06	C-2	Lec3, C13	N1-3, N6
PEK_W03	K1_ZARZ_W07-8, K1_ZARZ_W10, K1_ZARZ_W12-13, K1_ZARZ_W15, K1_ZARZ_W21	C-3	Lec1-15	N1-3, N6
PEK_W04	K1_ZARZ_W08-9	C-4	Lec5-7	N1-3, N6
PEK_W05	K1_ZARZ_U11	C-5	Lec14-15, C18	N3-4, N6
PEK_U01	K1_ZARZ_U01, K1_ZARZ_U04-5, K1_ZARZ_U07-8, K1_ZARZ_U14-18	C-6	C11-2	N3-7
PEK_U02	K1_ZARZ_U02, K1_ZARZ_U04-5, K1_ZARZ_U07-8, K1_ZARZ_U14-18	C-7	C14	N3-7
PEK_U03	K1_ZARZ_U02, K1_ZARZ_U04-5, K1_ZARZ_U07-8, K1_ZARZ_U14-18	C-7	C15-6	N3-7
PEK_U04	K1_ZARZ_U03, K1_ZARZ_U04-5, K1_ZARZ_U07-8, K1_ZARZ_U14-18	C-8	C17	N3-7
PEK_K01	K1_ZARZ_K01	C1-8	Lec1-15, C11-8	N-4
PEK_K02	K1_ZARZ_K04, K1_ZARZ_K03, K1_ZARZ_K05-7	C1-8	Lec1-15, C11-8	N-4
PEK_K03	K1_ZARZ_K08, K1_ZARZ_K02	C6-8	C11-8	N7, N4
PEK_K04	K1_ZARZ_K09, K1_ZARZ_K03	C1-8	Lec1-15, C11-8	N-4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish Marketing w społeczeństwie informacyjnym****Name in English Marketing in the information society****Main field of study (if applicable): MANAGEMENT****Specialization (if applicable): ORGANIZATIONAL MANAGEMENT****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code ZMZ1244****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30			
Number of hours of total student workload (CNPS)	120	60			
Form of crediting	Examination	Crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	4	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1,0	1,0			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. None

SUBJECT OBJECTIVES

C1. Introducing to basic marketing concepts, their evolution and present challenges, especially in regard of digital media.

C2. Provide an overview of marketing strategies in the social, technological and international context.

C3. Developing conceptual and analytical marketing skills necessary for modern marketers.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 – Understand how the basic principles of marketing are influenced by a variety of social, technological, cultural and economic issues.

PEK_W02 – Understand the basic principles, objectives, and problems in digital and international marketing channels.

Relating to skills:

PEK_U01 – Be able to plan and develop various marketing activities using modern methods of communication.

PEK_U02 – Be able to coordinate virtual and global marketing activities.

Relating to social competences:

PEK_K01 – Be aware of international and cross-cultural issues in marketing and digital media.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to marketing concept and process	2
Lec 2	Traditional marketing-mix	2
Lec 3	Information society and its influence on marketing strategies	2
Lec 4	Evolution of the new type of customers (prosumers)	2
Lec 5	Impact of the Internet on marketing activities	2
Lec 6	Products and customers	2
Lec 7	Prices and costs	2
Lec 8	Promotion and communication	2
Lec 9	Distribution and convenience	2
Lec 10	Personnel and competence	2
Lec 11	Process and capability	2
Lec 12	Physical environment and cultural context	2
Lec 13	Multinational and intercultural communication	2
Lec 14	New forms of marketing activities in virtual and real world	2
Lec 15	Exam	2
	Total hours	30
Form of classes - class		Number of hours
CI 1	Evolution of marketing	2
CI 2	Key thinkers in marketing	2
CI 3	Modern marketing	2
CI 4	Information society	2
CI 5	Prosumerism	2
CI 6	New products and services	2
CI 7	Alternative pricing strategies	2
CI 8	New forms of distribution	2
CI 9	Push vs. Pull	2
CI 10	Advertising	2
CI 11	SEM and SEO	2
CI 12	Social media marketing and Public Relations	2
CI 13	International issues	2

CI 14	Intercultural issues	2
CI 15	Future trends in marketing	2
	Total hours	30
Form of classes - laboratory		Number of hours
Lab 1		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
	Total hours	
TEACHING TOOLS USED		
N1. Informative lectures N2. Discussion-based lectures N3. Multimedia presentation N4. Class discussion N5. Oral presentation N6. Case studies		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P1 (lecture)	PEK_W01, PEK_W02, PEK_K01	Exam
F1 (classes)	PEK_U01 PEK_U02 PEK_K01	Oral presentation
F2 (classes)	PEK_U01 PEK_U02 PEK_K01	Report
C2 (classes) = 0,5*F1 + 0,5*F2		
PRIMARY AND SECONDARY LITERATURE		

PRIMARY LITERATURE:

[1] Adam Dzdowski, Marketing in the information society (under development)

SECONDARY LITERATURE:

[1] Judy Strauss, Raymond Frost, E-Marketing: International Version, Pearson, 2012

[2] Dave Chaffey, Fiona Ellis-Chadwick, Digital Marketing: Strategy, Implementation and Practice, Pearson, 2012

[3] Efraim Turban, David King, Electronic Commerce, Pearson, 2012

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Marketing in the information society
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
MANAGEMENT
AND SPECIALIZATION **ORGANIZATIONAL MANAGEMENT**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W03 K1_ZARZ_W06 K1_ZARZ_W10	C1, C2	Lec 1 - Lec 5	N1, N2, N3
PEK_W02	S1_ZARZ_OM_W03 K1_ZARZ_W06 K1_ZARZ_W10	C1, C2	Lec 6 - Lec 15	N1, N2, N3
PEK_U01 (skills)	S1_ZARZ_OM_U03 K1_ZARZ_U07	C3	CI 1 - CI 15	N4, N5, N6
PEK_U02	S1_ZARZ_OM_U03 K1_ZARZ_U18	C3	CI 1 - CI 15	N4, N5, N6
PEK_K01 (competences)	K1_ZARZ_K06 K1_ZARZ_K09	C1, C2, C3	Lec 12 - Lec 15, CI 12 - CI 15	N1, N2, N3, N4, N5, N6

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY Computer Science and Management

DISCRIPTION OF THE COURSES

Course Title in English **Organizational Behavior**

Course Title in Polish **Zachowania organizacyjne**

Discipline (if need): **Management**

Specialization (if need): **Organizational Management (OM)**

Level of Study and Form: **I level, stationary**

Type of course: **obligatory**

Course code: **ZMZ1245**

Group of courses: **NO**

Course Form	Lecture	Class	Laboratory	Project	Seminar
Number of hours/semester* provided in University (ZZU)	30	15			
Total Student's Workload (CNPS)	60	60			
Form of the course completion	Formal Presence and Evaluation's level of Knowledge	Evaluation of Diversified Activity			
For Group of Courses to Mark The Final Course (X)					
ECTS Credit	2	2			
Including the amount of relevant practice credit (P)		2			
Including the amount of ECTS credit relevant to direct personal contact (BK)	1	0,5			

PREREQUISITES: KNOWLEDGE, SKILLS AND COMPETENCES

1. Completion of the course aimed on theory of organization and management

PURPOSES OF OBJECT:

1. Awareness of essence and correctness of organizational behavior.
2. Identification of circumstances and factors and estimate of their influence on functioning organization
3. Behavior of organizational temporary organizations management.

OBJECTIVE'S EFFECTS OF EDUCATION

Knowledge range:

PEK_W01 Knows the meaning and aims of creating organizational behavior.

PEK_W02 Knows the circumstances and their influence on organizational behavior.

PEK_W03 Knows the models and mechanisms of their functioning related to creating organizational behavior .

Skills range:

PEK_U01 Can to identify key determinants to create organizational behavior.

PEK_U02 Can to use instruments set to create organizational behavior in practice.

PEK_U03.

Social competences range:

PEK_K01 Is oriented to ethical and moral standards relevant to situational circumstances in practice.

PEK_K02. Is conscious to devote efforts and time designated to create organizational behavior.

PEK_K03 Has a honest perception of rate between ordinate and subordinate.

PROGRAM'S CONTENTS

Form of teaching - Lecture		Number of hours
Lec1	Genesis and essence of Organizational Behavior	2
Lec2	Factors influencing on organization and forming organizational behavior, definitions and their interpretations	2
Lec3	Organizational behavior of Individuals. Solidarity and consolidation of the group	2
Lec4	Organizational behavior of group. Conflicts – their sources and resolving.	2
Lec5	Multi related organizational behavior. Integration and competition.	2
Lec6	Organization vs. Environment. Multi dimensioned organizational relationships. Cooperation	2
Lec7	Strategic management as the reactions on environmental factors.	2
Lec8	Methods and techniques in creating and organizational behavior	2
Lec9	Leadership and Styles of leading. The profile of contemporary leader	2
Lec10	Relational capital in organization – network, rates and processes of communications. Means of communication	2
Lec11	Person but changes in organization. Negotiations and Negotiating vs. Resist change. Methods and styles of negotiations	2
Lec12	Tiring, discouraging and “professional burning out” - reason, aspects, surmounting	2
Lec13	Ethic in organization – determinants, norms and standards vs. practice. Organizational culture	2
Lec14	Proofing the level of knowledge. Exam	2
Lec15	Final evaluation – analysis and discussion of result of test	2
Total number of hours		30

Form of education - Class		Number of hours
Clas1	Organizational roles of course's realization and promoting	1
Clas2	Leadership – theoretical aspects: attributes, skills, techniques. Individual and group aims vs. consolidation of the group	2
Clas3	Environment's factors and their affect on organization – factors,	2

...		
	Total number of hours	

MANNERS USED IN EDUCATIONAL PROCESS
M1. lecture (formal presence) M2. multimedia techniques (presentation) M3. discussion (panel, Internet) M4. individual work (literature overview, essays)

EVALUATION THE LEVEL OF EFFECT OF EDUCATION PROCESS

Evaluation (F – forming (due to progress in semester), P – final (the end of semester))	Number of result of education's effect	The way of reaching educational results
F1	PEK_W01, PEK_W02, PEK_W03, PEK_K01, PEK_K03	By measurement the formal presence and activity
F2	PEK_W02, PEK_W03, PEK_U01, PEK_U02, PEK_U03	The assessment by evaluation of the level of preparation of presentation
F3	PEK_W01, PEK_W02, PEK_W03, PEK_U03, PEK_K01, PEK_K03	The measurement by evaluation the level of readiness to panel discuss.
F4	PEK_W02, PEK_K02	By measurement the value of individual essays
P= 0,25F1+0,25F2 +0,35F3 +0,15F4		

BASIC LITERATURE and ADDITIONAL POSITION
<p><u>BASIC LITERATURE:</u></p> <p>[1] Gros U. ,Zachowania organizacyjne w teorii i praktyce, PWN, Warszawa, 2003 [2] Kuc B.R., Moczydłowska J., Zachowania organizacyjne, DIFIN, Warszawa, 2009 [3] Moczydłowska J. Zachowania organizacyjne w nowoczesnym przedsiębiorstwie, Wydawnictwo Naukowe „ Śląsk” , Katowice 2006</p> <p><u>ADDITIONAL LITERATURE:</u></p> <p>[1] Majewska B., Zachowania Organizacyjne przedsiębiorstw, UNIWERSYTET GDAŃSKI, Gdańsk, 2008 [2] Tyrała P., Zachowania organizacyjne w procesach zarządzania, MARSZAŁEK, Warszawa, 2006 [3] Armstrong G. , Zarządzanie zasobami ludzkimi, DOM WYDAWNICZY, Kraków, 2000</p>
TUTOR: (SURNAME, NAME, ADDRESS E-MAIL)
Zbigniew Malara, Zbigniew.Malara@pwr.wroc.pl Janusz Kroik, Janusz.Kroik@pwr.wroc.pl

MATRIX OF COHERENCE OF EFFECT OF EDUCATION FOR OBJECT
Organizational Behavior
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Management
AND SPECIALIZATION **Business Management**

Objective Effects of Education	Reference of objective results for effects of education defined for direction of study (Kxxx_W., Kxxx_U., Kxxx_K.) i specjalności (Syyy_W..., Syyy_U..., Syyy_K....)	Purposes of objects**	Program contents**	Number of educational tool**
PEK_W01	K1_ZARZ_W18, K1_ZARZ_U16, K1_ZARZ_K06, K1_ZARZ_U10	O1	Lec1-Lec13, Lec15,	N1, N3
PEK_W02.	K1_ZARZ_W18, K1_ZARZ_U15, K1_ZARZ_U10, K1_ZARZ_K01, K1_ZARZ_U17	O2	Lec3-Lec13, Clas2-Clas8	N1,N3,N4
PEK_W03.	K1_ZARZ_W18, K1_ZARZ_K01, K1_ZARZ_K02, K1_ZARZ_K06, K1_ZARZ_U09, K1_ZARZ_K09	O2.O3	Lec3-Lec13, Clas2-Clas8	N1,N3,N4
PEK_U01.	K1_ZARZ_W18, K1_ZARZ_K01, K1_ZARZ_K02, K1_ZARZ_U10, K1_ZARZ_K09, K1_ZARZ_K04	O2	Lec3-Lec13, Clas2-Clas8	N1,N3,N4
PEK_U02.	K1_ZARZ_K06, K1_ZARZ_K01, K1_ZARZ_U15, K1_ZARZ_U17, K1_ZARZ_U09	O3	Lec8,Lec11, Lec12, Clas4-Clas8	N1,N2,N3,N4
PEK_U03	K1_ZARZ_W18, K1_ZARZ_K02, K1_ZARZ_U09, K1_ZARZ_U10, K1_ZARZ_U17	O3	Lec3-Lec13, Clas2-Clas8	N3,N4
PEK_K01.	K1_ZARZ_K09, K1_ZARZ_K04, K1_ZARZ_U09, K1_ZARZ_U17	O3	Lec4,Lec9,Lec11,Lec13, Clas2-Clas3	N1,N3,N4
PEK_K02	K1_ZARZ_K09, K1_ZARZ_K02, K1_ZARZ_U15, K1_ZARZ_U10, K1_ZARZ_K06	O2	Lec1,Lec15, Clas2-Clas8	N1,N2,N3,N4
PEK_K03	K1_ZARZ_W18, K1_ZARZ_K09, K1_ZARZ_K02, K1_ZARZ_K01, K1_ZARZ_U10, K1_ZARZ_U17	O3	Lec,Lec8,Lec9, Lec11, Clas2,Clas4,Clas6,Clas7	N1,N3,N4

** - z tabeli powyżej

[1_ZRZ_W18](#) Basic knows correctness of organizational behavior and conditionality . It indicate principles of constructions and functioning of group and factors effecting their proficiency. Notion of organizational culture describes and meaning in management . It knows basic center (means) and systems of communications in organizations and features of proficient communication processes.

[K1_ZARZ_K09](#) It is prepared for preservation to professional manner and ethical.

[K1_ZARZ_K01](#) Is consciousness of necessity of deployment of independent knowledge has and professional abilities in range of science about organization and management. It is able to develop this knowledge independently and perfect abilities

[K1_ZARZ_U17](#) It has at disposal enough range means language, in order to speak out relatively faultless, formulate and substantiate opinions, explain position, present defects and advantages of different solutions, participate in discussion and present general topic and scientific and technical in polish - and foreign.

[K1_ZARZ_U16](#) Texts listened to understand < intelligence > and about general topic read and with domain of social science scientific and technical relate, about management discipline of science in polish - and foreign.

[K1_ZARZ_U15](#) It is able to use with miscellaneous polish independently and foreign language sources of information, particularly, professional literatures, integrate gotten informations and use for deepening special knowledge and widen of personal language competence.

[K1_ZARZ_K02](#) It is able to interact (to react) in (to) and work in (to) group and different roles in (to) them corporate forms of organizations of work (accepting (catch on)). Readiness exerts for organizing and drives work of small group.

[K1_ZARZ_K06](#) It is prepared for initiation of change in work-place and participations in (to) their planning and accustoming. It is able to think and act to entrepreneurial manner.

[K1_ZARZ_K04](#) Readiness exerts for identifying, analyses and in work-place arbitration of problem appearing.

[K1_ZARZ_U09](#) Possess the ability of development of plan of management owns in organization changes and selections of manners of managements in organization typical projects of changes.

[K1_ZARZ_U10](#) Is able to identify, interpret and evaluate behavior of individuals within organization and use typical techniques effecting this behavior.

FACULTY Computer Sciences and Management

SUBJECT CARD**Name in Polish ...Zarządzanie operacjami****Name in English Operations Management****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code ZMZ1249****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15	15		
Number of hours of total student workload (CNPS)	60	30	30		
Form of crediting	Examination	Crediting with grade	Crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	2	1	1		
including number of ECTS points for practical (P) classes		1	1		
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5	0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Essentials of Management

SUBJECT OBJECTIVES

C1 To acquire the basic knowledge concerning approaches, strategies, models and methods useful in improving effectiveness and efficiency of production and service management in business organizations

C2 To acquire skills in building feasible and efficient production plans and schedules

C3. To acquire skills in efficient using of systems and models of inventory management in enterprise.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows and defines production process, productivity, operations management objectives, strategic and operational decisions of Operations Management.

PEK_W02 Identifies and describes production planning and control levels in an enterprise and their methods.

PEK_W03 Knows and describes inventory types, functions, costs and inventory management systems and models.

PEK W04 Knows modern Operations Management approaches and strategies: MRPII/ERP,

SUBJECT EDUCATIONAL EFFECTS

relating to skills:

PEK_U01	Explains production process, productivity, operations management , strategic and operational decisions of OM, can calculate productivity, can calculate operational profit, can select optimal product mix, can select optimal process.
PEK_U02	Develops feasible and efficient production plans and schedules, develops Gantt chart and can identify production lead time.
PEK_U03	Selects the right inventory management system and lot sizing model (MRP, EOQ) and uses them to make decisions: how much to order and when to order?, can calculate the optimal lot size.
relating to social competences:	
PEK_K01	Understands importance of Operations Management in improving efficiency of an enterprise as well as of market economy.

PROGRAMME CONTENT

Form of classes - lecture		Number
Lec 1	Essence, functions, aims, and decisions of Operations Management. Productivity and its measuring. Approaches and strategies used by OM. Types of Productions Environments (Make to Stock, Make to Order, Assemble to Order, Engineering to Order).	2
Lec 2	Strategic decisions of OM. Selection of Product Mix, Selection of Process and Capacity, Production Location, Production System Structure and Layout	3
Lec 3	Production Planning and Control levels in Enterprise. Aggregate Production Planning (objectives, strategies and methods).	2
Lec 4	Inventory Management. Inventory: Types, Functions, Costs. Inventory management systems and models. Dependent and Independent Demand Inventory. Economic Order Quantity Model.	3
Lec 5	Master Production Scheduling. Material Requirements Planning (MRP logic). Capacity Requirements Planning.	3
Lec 6	Detailed Scheduling and Production Activity Control. Modern Operations Management Approaches and Strategies (MRPII/ERP, Lean/JIT, OPT/TOC)	2
	Total hours	15
Form of classes - class		Number of hours
Cl 1	Optimal product mix selection using Cost-Volume- Profit model taking into account demand and production constraints.	2
Cl 2	Process selection using Cost-Volume- Profit model	2
Cl 3	Production capacity planning in constrains conditions	2
Cl 4	Aggregate production planning using Transportation Method	3
Cl 5	Inventory Management using EOQ model and Economic Production Quantity model	3
Cl 6	Material Requirements Planning using MRP logic	2
Cl 7	Test	1
	Total hours	15
Form of classes - laboratory		Number of hours

Lab1	Production Flow Control simulation using OPT simulator.	4
Lab2	Aggregate Production Planning . Development of feasible and efficient plans using Chase Demand and Capacity Level Strategies (POM for Windows software)	5
Lab3	Master Production Schedule and Material Requirements Planning (STORM for Windows software)	6
	Total hours	15
Form of classes - project		Number of hours
Proj1		
Proj2		
Proj3		
Proj4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem1		
Sem2		
Sem3		
...		
	Total hours	
TEACHING TOOLS USED		
N1.Multi media show N2.Computer simulation N3.Problems solving N4 Literature studies		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1 Homework and Classwork	PEK_U01, PEK_U02, PEK_U03	Student’s presence. Acceptance of homework and classwork with grade (4 problems to solve).
F2 Laboratory report	PEK_U01, PEK_U02, PEK_U03	Student’s presence. Acceptance of 3 laboratory reports with grade.
Classes: P1 = average of 4 accepted homework grades. Laboratory: P2 = average of 3 accepted laboratory reports grades. Lecture: P Exam in test form		

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows and defines production process, productivity, operations management objectives, strategic and operational decisions of Operations Management.

PEK_W02 Identifies and describes production planning and control levels in an enterprise and their methods.

PEK_W03 Knows and describes inventory types, functions, costs and inventory management systems and models.

PEK_W04 Knows modern approaches and strategies of like MRPII/ERP, Lean/JIT, OPT.

...

relating to skills:

PEK_U01 Explains production process, productivity, operations management, strategic and operational decisions of OM, can calculate productivity.

PEK_U02 Develops feasible and efficient production plans and schedules.

PEK_U03 Chooses the right inventory management systems and models (MRP, EQQ) and uses them to make decisions: how much to order and when to order?.

relating to social competences:

PEK_K01 Understands importance of operations management in improving efficiency of an enterprise as well as economy.

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Render B., Heizer J., *Principles of Operations Management*, Prentice-Hall, Inc. A Simon & Schuster Co. New Jersey 1997.

[2] Bozarth C., C., Handfield R., *Introduction to Operations and Supply Chain Management*, Pearson Education, Inc. Co. Upper Saddle River, New Jersey 2006.

[3] Vonderembse M., A., White G., P., *Operations Management. Concepts, Methods, and Strategies*, West Publishing Company 1991

SECONDARY LITERATURE:

[1] Reid R.D., *Operations management: an integrated approach*, John Wiley & Sons, Hoboken 2005.

[2] Heizer J., Render B., *Production and Operations Management. Strategies and Tactics*, Allyn and Bacon, a division of Simon & Schuster Inc. 1993.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Operations Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W09 K1_ZARZ_W13	C1	Lec.1,Lec.2, Cl.1, Cl.2, Cl.3,	N1,N2,N3,N4
PEK_W02	K1_ZARZ_W09 K1_ZARZ_W13	C1,C2	Lec.3, Lec.5, Cl.4, Cl.5, Lab.2, Lab.3	N1,N2,N3,N4
PEK_W03	K1_ZARZ_W09 K1_ZARZ_W13	C3	Lec.4, Lab.3, Cl.5,Cl.6,	N1,N2,N3, N4
PEK_W04	K1_ZARZ_W09 K1_ZARZ_W13	C1	Lec.1,Lec.2, Lec.6, Lab.1	N1,N4
PEK_U01	K1_ZARZ_U04, K1_ZARZ_U11, K1_ZARZ_U03, K1_ZARZ_U17, K1_ZARZ_U16, K1_ZARZ_U15, K1_ZARZ_U07, K1_ZARZ_U08	C1	Lec.1,Lec.2, Cl.1, Cl.2, Cl.3,	N1,N2,N3
PEK_U02	K1_ZARZ_U04, K1_ZARZ_U11, K1_ZARZ_U03, K1_ZARZ_U17, K1_ZARZ_U16, K1_ZARZ_U15, K1_ZARZ_U07, K1_ZARZ_U08	C2	Lec.3, Lec.5, Cl.4, Cl.5, Lab.2, Lab.3	N1,N2,N3
PEK_U03	K1_ZARZ_U02, K1_ZARZ_U04, K1_ZARZ_U11, K1_ZARZ_U03, K1_ZARZ_U17, K1_ZARZ_U16, K1_ZARZ_U15, K1_ZARZ_U07, K1_ZARZ_U08,	C3	Lec.4,Lec.6, Lab.1, Lab.3, Cl.5,Cl.6,	N1,N2,N3
PEK_K01	K1_ZARZ_W09, K1_ZARZ_W13, K1_ZARZ_K01	C1,C2,C3	Lec.1, Lec.2, Lec.3, Lec.4, Lec.5, Lec.6, Cl.4, Cl.5, Cl.6, Lab.2, Lab.3	N1,N2,N3, N4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

WYDZIAŁ INFORMATYKI I ZARZĄDZANIA**KARTA PRZEDMIOTU**Nazwa w języku polskim **Prowadzenie projektów w nowoczesnych organizacjach**Nazwa w języku angielskim **Leading projects in modern organisations**Kierunek studiów (jeśli dotyczy): **zarządzanie**Specjalność (jeśli dotyczy): **organisational management**Stopień studiów i forma: **I stopień, stacjonarna**Rodzaj przedmiotu: **obowiązkowy**Kod przedmiotu: **ZWZ1251**Grupa kursów: **NIE**

	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium
Liczba godzin zajęć zorganizowanych w Uczelni (ZZU)	30	15			
Liczba godzin całkowitego nakładu pracy studenta (CNPS)	90	60			
Forma zaliczenia	Egzamin	zaliczenie na ocenę			
Dla grupy kursów zaznaczyć kurs końcowy (X)					
Liczba punktów ECTS	3	2			
w tym liczba punktów odpowiadająca zajęciom o charakterze praktycznym (P)		2			
w tym liczba punktów ECTS odpowiadająca zajęciom wymagającym bezpośredniego kontaktu (BK)	1	0,5			

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. Fundamentals about project management
2. Fundamentals about organization management

CELE PRZEDMIOTU

C1 presenting to the students modern project management methods, like the critical chain method, PRINCE methodology, and adaptive project management methods

C2 presenting to the students basic project portfolio methods

C3 making the students able to apply the modern project management methods in practice

C4 making the student able to manage simple project portfolios

C5 making the students aware of the advantages and disadvantages of traditional and modern project management methods

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01 the students know the advantages and disadvantages of the traditional project management methods

PEK_W02 the students know the fundamentals of the Critical Chain, PRINCE methodology and adaptive project management methods

PEK_W03 the students know the fundamentals of project portfolio management

Z zakresu umiejętności:

PEK_U01: the students are able to apply in simple cases modern project management methods

PEK_U02: the students are able to manage project portfolio in simple cases

Z zakresu kompetencji społecznych:

PEK_K01: the students are aware of the advantages and disadvantages of various project management methods and are able to communicate them to others

TREŚCI PROGRAMOWE

Forma zajęć - wykład		Liczba godzin
Wy1	Summary of hard project traditional management methods	2
Wy2	Summary of soft project traditional management methods	2
Wy3	Critical chain method – project planning	2
Wy4	Critical chain method – project control	2
Wy5	Used of buffers in project management	2
Wy6	Fundamentals about the PRINCE methodology	2
Wy7	Individual elements of the PRINCE methodology	2
Wy8	Adaptive Project structure – introduction	2
Wy9	Defining version scope	2
Wy10	Cycle structure and building	2
Wy11	Version results review	2
Wy12	Project portfolio management – main stages	2
Wy13	Evaluation and selection of projects in a project portfolio	2
Wy14	Managing active project portfolio	2
Wy15	Final test	2
	Suma godzin	30

Forma zajęć - ćwiczenia		Liczba godzin
Ćw1	Exercise in traditional hard project management methods	2
Ćw2	Exercise in traditional soft project management methods	2
Ćw3	Exercise in critical chain management	2
Ćw4	Exercise in PRINCE methodology	2
Ćw5	Case study in PRINCE methodology	2
Ćw6	Exercise in adaptive project management	2

Ćw7	Exercise in project portfolio management	2
Ćw8	Final test	1
	Suma godzin	15

Forma zajęć - laboratorium		Liczba godzin
La1		
La2		
La3		
La4		
La5		
...		
	Suma godzin	

Forma zajęć - projekt		Liczba godzin
Pr1		
Pr2		
Pr3		
Pr4		
...		
	Suma godzin	

Forma zajęć - seminarium		Liczba godzin
Se1		
Se2		
Se3		
...		
	Suma godzin	

STOSOWANE NARZĘDZIA DYDAKTYCZNE
N1. Informing lecture
N2. Practical exercise

OCENA OSIĄGNIĘCIA PRZEDMIOTOWYCH EFEKTÓW KSZTAŁCENIA

Oceny (F – formująca (w trakcie semestru), P – podsumowująca (na koniec semestru))	Numer efektu kształcenia	Sposób oceny osiągnięcia efektu kształcenia
P	PEK_W01, PEK_W01 PEK_U01 PEK_U02 PEK_K01	Written test and exam

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA
<u>LITERATURA PODSTAWOWA:</u> [1] Harold Kerzner (2009), Project Management: A Systems Approach to Planning, Scheduling, and Controlling, John Wiley & Sons; [2] Robert K. Wysocki (2009), Effective Project Management: Traditional, Agile, Extreme, John Wiley & Sons [3] David Hinde (2012), PRINCE2 Study Guide, John Wiley & Sons. <u>LITERATURA UZUPEŁNIAJĄCA:</u> [1] A Guide to the Project Management Body of Knowledge, Project Management Institute (1996) [2] Goldratt E. (1997), Critical Chain, North River Press, Great Barrington;
OPIEKUN PRZEDMIOTU (IMIE, NAZWISKO, ADRES E-MAIL) Dorota Kuchta, dorota.kuchta@pwr.wroc.pl

MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Leading projects in modern organisations
Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU management
I SPECJALNOŚCI organisational management.

Przedmiotowy efekt kształcenia	Odniesienie przedmiotowego efektu do efektów kształcenia zdefiniowanych dla kierunku studiów i specjalności (o ile dotyczy)**	Cele przedmiotu***	Treści programowe***	Numer narzędzia dydaktycznego***
PEK_W01 (wiedza)		C5	WY1, WY2, Ćw1, Ćw2	N1,N2
PEK_W02	S1_ZARZ_OM_W02	C1	WY3, WY4, WY5, WY6, WY7, WY8, WY9, WY10, WY11	N1
PEK_W03		C2	WY13, WY14	N1
PEK_U01 (umiejętności)	S1_ZARZ_OM_U02	C3	Ćw3, Ćw4, Ćw5, Ćw6	N2
PEK_U02		C4	Ćw7	N2
PEK_K01 (kompetencje)		C5	WY1, WY2, WY3, WY4, WY5, WY6, WY7, WY8, WY9, WY10, WY11 Ćw1, Ćw2, Ćw3, Ćw4, Ćw5, Ćw6	N1,N2

** - wpisać symbole kierunkowych/specjalnościowych efektów kształcenia

*** - z tabeli powyżej

Faculty of Computer Science and Management

SUBJECT CARD**Name in Polish** Prowadzenie projektów w nowoczesnych organizacjach**Name in English** Leading projects in modern organisations.**Main field of study (if applicable):** management**Specialization (if applicable):** organisational management**Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** ZWZ 1251**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	90	60			
Form of crediting	Examination	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	3	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Fundamentals about project management
2. Fundamentals about organization management

SUBJECT OBJECTIVES

C1 presenting to the students modern project management methods, like the critical chain method, PRINCE methodology, and adaptive project management methods

C2 presenting to the students basic project portfolio methods

C3 making the students able to apply the modern project management methods in practice

C4 making the student able to manage simple project portfolios

C5 making the students aware of the advantages and disadvantages of traditional and modern project management methods

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 the students know the advantages and disadvantages of the traditional project management methods

PEK_W02 the students know the fundamentals of the Critical Chain, PRINCE methodology and adaptive project management methods

PEK_W03 the students know the fundamentals of project portfolio management

relating to skills:

PEK_U01: the students are able to apply in simple cases modern project management methods

PEK_U02: the students are able to manage project portfolio in simple cases

relating to social competences:

PEK_K01: the students are aware of the advantages and disadvantages of various project management methods and are able to communicate them to others

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Summary of hard project traditional management methods	2
Lec 2	Summary of soft project traditional management methods	2
Lec 3	Critical chain method – project planning	2
Lec 4	Critical chain method – project control	2
Lec 5	Use of buffers in project management	2
Lec 6	Fundamentals about the PRINCE methodology	2
Lec 7	Individual elements of the PRINCE methodology	2
Lec 8	Adaptive Project structure – introduction	2
Lec 9	Defining version scope	2
Lec 10	Cycle structure and building	2
Lec 11	Version results review	2
Lec 12	Project portfolio management – main stages	2
Lec 13	Evaluation and selection of projects in a project portfolio	2
Lec 14	Managing active project portfolio	2
Lec 15	Final test	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Exercise in traditional hard project management methods	2
Cl 2	Exercise in traditional soft project management methods	2
Cl 3	Exercise in critical chain management	2
Cl 4	Exercise in PRINCE methodology	2

CI 5	Case study in PRINCE methodology	2
CI 6	Exercise in adaptive project management	2
CI 7	Exercise in project portfolio management	2
CI 8	Final test	1
	Total hours	15

Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	

Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	

Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED	
N1. Informing lecture	
N2. Practical exercise	

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W01, PEK_W01 PEK_U01 PEK_U02	Written test and exam

	PEK_K01	
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
[1] Harold Kerzner (2009), Project Management: A Systems Approach to Planning, Scheduling, and Controlling, John Wiley & Sons;		
[2] Robert K. Wysocki (2009), Effective Project Management: Traditional, Agile, Extreme, John Wiley & Sons		
[3] David Hinde (2012), PRINCE2 Study Guide, John Wiley & Sons.		
<u>SECONDARY LITERATURE:</u>		
[1] A Guide to the Project Management Body of Knowledge, Project Management Institute (1996)		
[2] Goldratt E. (1997), Critical Chain, North River Press, Great Barrington;		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Dorota Kuchta, dorota.kuchta@pwr.wroc.pl		

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT

 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 AND SPECIALIZATION

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)		C5	Le1, Le2, Cl 1, Cl 2	N1,N2
PEK_W02	S1_ZARZ_OM_W02	C1	Le3, Le4, Le5, Le6, Le7, Le8, Le9, Le10, Le11	N1
PEK_W03		C2	Le13, Le14	N1
PEK_U01 (skills)	S1_ZARZ_OM_U02	C3	Cl 3, Cl 4, Cl 5, Cl 6	N2
PEK_U02		C4	Cl 7	N2
PEK_K01 (competences)		C5	Le1, Le2, Le3, Le4, Le5, Le6, Le7, Le8, Le9, Le10, Le11 Cl 1, Cl 2, Cl 3, Cl 4, Cl 5, Cl 6	N1,N2

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY **Management** / DEPARTMENT **Computer Science and Management****SUBJECT CARD**Name in Polish **Współczesne metody i techniki organizacyjne**Name in English **Contemporary organizational methods and techniques**Main field of study (if applicable): **Management**Specialization (if applicable): **Organizational Management (OM)**Level and form of studies: **1st level, full-time**Kind of subject: **obligatory**Subject code **ZMZ1246**Group of courses **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	30			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	1	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES1. **Basic knowledge of management****SUBJECT OBJECTIVES**C1 **Getting by the students basic knowledge about the contemporary methods and techniques in management**C2 **Understanding the issues related to the organizational processes and chosen methods and techniques in management**C3 **Ability of analysis, measurement of processes in organizations****SUBJECT EDUCATIONAL EFFECTS**

relating to knowledge:

PEK_W01 **has structured knowledge of organizational processes**PEK_W02 **has structured knowledge of the contemporary methods and techniques in management**

...

relating to skills:

PEK_U01 **has the ability to identify the steps of the organizational processes**PEK_U02 **has the ability to use chosen methods/techniques in management**

...

relating to social competences:

PEK_K01 **properly identify and resolve dilemmas related to management****PROGRAMME CONTENT****Form of classes - lecture****Number of hours**

Lec 1	Organizational processes – basic information	2
Lec 2	Planning Methods & Techniques	4
Lec 3	Labor Organizing Methods & Techniques	2
Lec 4	Time Management Techniques	2
Lec 5	Risk Management Techniques	2
Lec 6	Accounting Methods & Techniques	2
Lec 7	Test	1
	Total hours	
Form of classes - class		Number of hours
CI 1	Methods & Techniques – difference, basic information	2
CI 2	Activity Based Management (ABM)	6
CI 3	Balanced Scorecard (BSC)	6
CI 4	Summary	1
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. informative lecture N2. multimedia presentation N3. case studies N4. classrooms lists		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P1	PEK_W01	test
P2	PEK_W02	test
F1	PEK_U01	classrooms lists, case studies analysis
F2	PEK_U02	classrooms lists, case studies analysis
C		
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
[1] McKee A., Management: a focus on leaders, Boston: Pearson 2012		
[2] Coke A., Seven steps to a successful business plan, Amacom, New York 2002		
[3] Olson D. L., Wu D. D., Enterprise risk management models, Heidelberg: Springer, Berlin 2010		
<u>SECONDARY LITERATURE:</u>		
[1] Kaplan R.S., Anderson S.R., Time-Driven Activity-Based Costing: A Simpler and More Powerful Path to Higher Profits, Harvard Business School Press, Boston, Massachusetts 2007		
[2] Kaplan R.S, Norton D.P., The Balanced Scorecard: Translating Strategy into Action, President and Fellowes of Harvard College, USA 1996		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Agata Klaus-Rosińska, <u>agata.klaus@pwr.wroc.pl</u>		

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Contemporary organizational methods and techniques
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Organizational Management (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W10	C1, C2, C3	Lec1, Lec2, Lec3, Lec4, Lec 5, Lec6 CL1, CL2, CL3	N1, N2, N3, N4
PEK_W02	S1_ZARZ_OM_W10	C1, C2, C3	Lec1, Lec2, Lec3, Lec4, Lec 5, Lec6 CL1, CL2, CL3	N1, N2, N3, N4
PEK_U01 (skills)	S1_ZARZ_OM_U10	C1, C2, C3	Lec1, Lec2, Lec3, Lec4, Lec 5, Lec6 CL1, CL2, CL3	N1, N2, N3, N4
PEK_U02	S1_ZARZ_OM_U10	C1, C2, C3	Lec1, Lec2, Lec3, Lec4, Lec 5, Lec6 CL1, CL2, CL3	N1, N2, N3, N4
PEK_K01 (competences)	-	C1, C2, C3	Lec1, Lec2, Lec3, Lec4, Lec 5, Lec6 CL1, CL2, CL3	N1, N2, N3, N4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

COMPUTER SCIENCE AND MANAGEMENT FACULTY

SUBJECT CARD**Metody i narzędzia podejmowania decyzji****Methods and Tools of Data Analysis****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management (OM)****Level and form of studies: 1st level, full-time****Kind of subject: obligatory****Subject code ZMZ1253****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15		15		
Number of hours of total student workload (CNPS)	30		60		
Form of crediting	Crediting with grade		Crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	1		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	0,5		0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Student has a basic knowledge of business management and decision making process. He has a general knowledge of information technics in management.
2. Student knows basic software for solving management problems, specially designed for decision making.
3. Student has a basic practical skills in working with Excel and SQL software.

SUBJECT OBJECTIVES

- C1. Acquisition of data mining knowledge in business management processes.
 C2. Getting skills in choosing and using decision support techniques in practical business problems solving.
 C3. Getting social skills in information and communication techniques for management.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

- PEK_W01: Student has a basic knowledge in construction and using some quantitative methods and computer technics in data mining useful in business information systems.
 PEK_W02: Student has a basic knowledge in applying software in data mining.

relating to skills:

- PEK_U01: Student can identify and propose ways of solving data mining problems.
 PEK_U02: Student is able to build useful tools for data analysis for business decision

processes.

relating to social competences:

PEK_K01: Student can enlarge his knowledge and abilities, can works in groups for solving management data mining problems.

PEK_K02: Student can find methods for solving decision problems, held accountable for his works, defend his views of the propose way of solving problems.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Data Mining – Methods and Practical Applications: Examples.	2
Lec 2	Pre-processing.	2
Lec 3	Multivariate analysis.	2
Lec 4	Decision trees.	2
Lec 5	Regression trees.	2
Lec 6	Seasonal decomposition in forecasting.	2
Lec 7	Association rules methods.	2
Lec 8	Written test.	1
	Total hours	15
Form of classes - class		Number of hours
Form of classes - laboratory		Number of hours
Lab 1	Get acquainted with data warehouse	2
Lab 2	Data analysis – OLAP elements.	2
Lab 3	Warehouse data pre-processing.	2
Lab 4	Team work: Sale seasonal analysis. Results presentation.	2
Lab 5	Team work: Sale multivariate analysis. Results presentation.	2
Lab 6	Team work: Regression tree construction. Results presentation.	2
Lab 7	Team work: Association rules for sale construction. Results presentation.	2
Lab 8	Test with computer.	1
	Total hours	15
Form of classes - project		Number of hours
Form of classes - seminar		Number of hours
TEACHING TOOLS USED		

- N1. Multimedia presentation .
- N2. Team work.
- N3. Computer data analysis.
- N4. Laboratory instruction.
- N5. Written test.
- N6. Computer test.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01, PEK_U02 PEK_K01, PEK_K02	Report of team work results.
P1	PEK_W01	Written test.
P2	PEK_U01, PEK_U02	Computer test.

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] David H., Heikki M., Padhraic S., *Data Mining*, MIT, 2001.
- [2] Han J., Kamber M.: *Data Mining. Concept and Techniques*, Elsevier Morgan Kaufmann Publishers, 2006.
- [3] Han J., Jiawei : *Data Mining: Concepts and Technics*, 2006.
- [4] Larose D.T.: *Discovering Knowledge in Data Analysis. An Introduction to Data Mining*, John Wiley & Sons, 2005.
- [5] Shmueli, Galit, *Data Mining for Business Intelligence: Concepts, Techniques, and Applications in Microsoft Office Excel with XLMiner*, Wiley-Interscience, 2006.
- [6] Sumathi S., *Introduction to Data Mining and Its Application*, 2006.

SECONDARY LITERATURE:

- [1] Cooc D.J., Holder L.B.: *Mining Graph Data*, Hoboken, N.J. : Wiley-Interscience, 2007.
- [2] Morrison D.F.: *Multivariate Statistical Methods*, McGraw-Hill, 1990.
- [3] Olson D.L. *Advance Data Mining Techniques*, Springer, 2008.
- [4] Larose D. T., *Data Mining methods and Models*, IEEE Computer Society Press, 2006.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Barbara Gładysz; e-mail: barbara.gladysz@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Methods and Tools of Data Analysis
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W09 K1_ZARZ_W24	C1, C2	Lec01, Lec02, Lec03, Lec 04, Lec 05, Lec 06, Lec07	N1, N5
PEK_W02 (knowledge)	S1_ZARZ_OM_W09 K1_ZARZ_W25	C1, C2	Lec01, Lec03, Lec 04, Lec 05, Lec 06, Lec07	N1, N5
PEK_U01 (skills)	S1_ZARZ_OM_U09 K1_ZARZ_U05 K1_ZARZ_U15 K1_ZARZ_U16	C1, C2	La01, Lab02, La03, La04, La05, La06, Lab07	N2, N3, N6
PEK_U02 (skills)	S1_ZARZ_OM_U09 K1_ZARZ_U11 K1_ZARZ_U14 K1_ZARZ_U17 K1_ZARZ_U18	C1, C2	La04, La05, La06, Lab07	N2, N3, N6
PEK_K01 (social competencies)	K1_ZARZ_K02	C3	La01, Lab02, La03, La04, La05, La06, Lab07	N3
PEK_K02 (social competencies)	K1_ZARZ_K02	C3	La01, Lab02, La03, La04, La05, La06, Lab07	N3

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY Computer Science and Management**SUBJECT CARD****Name in Polish** Nowoczesne zarządzanie zasobami ludzkimi**Name in English** Modern Human Resource Management**Main field of study (if applicable):** Management**Specialization (if applicable):** Organizational Management**Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** ZMZ1254**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30			
Number of hours of total student workload (CNPS)	60	60			
Form of crediting	Crediting with grade	Crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	2	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	1			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Basic knowledge in the scope of basis of management and organizational behaviours.

SUBJECT OBJECTIVES**C1:** Providing students with information on objectives, instruments, principles and elements occurring in the human resource management in the organisation and internal and external factors of the process.**C2:** Providing students with information on modern methods and tools of HRM, for example: competency based management, innovative methods of rewarding, personnel marketing, personnel controlling.**C3:** Allowing students to directly learn principles and instruments that are actually used in particular areas of human resource management in given organisations (case studies).**C4:** Making students aware and convincing them of the necessity to create the human being as an object of management and the "most precious resource" of the organisation rather than an "ordinary production factor".**C5:** Showing students, on selected examples, the principles of conduct and behaviours of significant importance for the effective functioning of employees in individual and group work

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

- PEK_W01 Has a knowledge about the essence of personnel function, the personnel management process and human resource management. Understands the relations of the HRM with other elements of the enterprise management system.
- PEK_W02 Understands the essence of philosophy, policy and strategy of personnel function as well as knows the rules of the human resource planning and personnel controlling.
- PEK_W03 Has a knowledge about the recruitment, selection and introduction to the work processes (incl. personnel marketing). Knows the rules of competency based management.
- PEK_W04 Knows the essence and principles of periodical employee evaluation.
- PEK_W05 Has a knowledge about motivation and rewarding of employees (inc. innovative methods of rewarding).
- PEK_W06 Understands the rules of shaping the employees development and the career paths.
- PEK_W07 Knows the basic rules of building and functioning of the teams in the organization, as well as the factors influencing on the teams efficiency. Knows the roles of the leader and the team members in the organization. Knows the principles of communication in the organization.

Relating to skills:

- PEK_U01: Student is able to make a diagnosis of the existing situation in particular areas of personnel management and to formulate conclusions in the scope of the evaluation of the condition in the context of recommendations resulting from literature.
- PEK_U02: Student is able to identify factors which influence the effectiveness of personnel function realisation.
- PEK_U03: Student is able to choose sources of information and use selected techniques for gaining information (interview, survey, documentation) for the purpose of solving typical diagnostic problems in selected areas of personnel management.
- PEK_U04: Student is able to prepare an expert appraisal in the form of a written report.
- PEK_U05: Student is able to present the results of the diagnostic research and to defend the conclusions before a group of experts.

Relating to social competences:

- PEK_K01: Student is able to update his/her knowledge; he/she knows the key authors, directions and tendency in the development of knowledge of personnel management.
- PEK_K02: Student is aware and prepared to identify, analyse and settle employee problems occurring in the work place in relation with the performance of the personnel function.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec1	Introduction, overview the lecture.	1
Lec1	The concept and essence of personnel function, goals of personnel management, human resource management conditions, meaning and the evolution of personnel function.	1
Lec2	Personnel punction in the context of the organisation management system. Task structure and the scope of personnel management process.	2
Lec3-4	Philosophy, policy and strategy of personnel function. Comparative analysis: Human Resources Management (HRM) and Personnel Management (PM). Strategic aspects of Human Resources Management.	4
Lec5	Human Resources Planning. Goals, conditions and stages of planning. Personnel Audit. Realisation control – personnel controlling.	2
Lec6	Recruitment, selection and introduction to the work processes. Competences based management in personnel management. Personnel marketing.	2

Lec7	Aims and concepts of employee evaluation. Periodical Employee Evaluation System (SOOP). Criteria, methods and rules of the employee evaluation. Effectiveness of the SOOP.	2
Lec8	Colloquium (1).	2
Lec9-10	Remuneration policy. Aims and principles of wage differentiation. The essence and goals of work evaluation. Criteria and methods of the work evaluation.	4
Lec11	Forms of remuneration. Functions of remuneration. Basic wages, bonuses and other elements of wages. Innovative methods of rewarding.	2
Lec12	Workforce potential. Influencing the employee development. Trainings; goals, types, evaluation of effectiveness. Career paths.	2
Lec13	The principles of building and functioning the teams in an organization, factors influencing on the teams efficiency. Roles of the leader and the team members in the organization.	2
Lec14	The principles and the systems of communication in the organization. The features an efficient communication process.	2
Lec15	Summary of the lecture. Colloquium (2).	2
	Total hours	30

Form of classes - class		Number of hours
Cl. 1	Presentation of the purpose of classes, their course and criteria of student evaluation. Discussion of particular tasks composing the diagnostic paper. Task 1: Selection of the theme and gaining an object of the research. Task 2: Presentation of the object of the research and formal principles and instruments applicable to the given area of personnel management. Task 3: Conducting diagnostic research in a real facility in the selected area of personnel management. Task 4: Working out a report documenting the results of the diagnostic research. Task 5: Presentation and defence of conclusions from the research.	2
Cl. 2	Consultations related to the selection of the theme and manner of conducting and documenting the diagnostic research related to the procedure (course of the process) and instruments of personnel management in the selected area. Discussing the contents of particular parts of the written report documenting the results of the diagnostic work in exemplary thematic areas. Answering students' questions.	2
Cl. 3 Cl. 4	Brief (5-minute) presentations of students related to: the object of the research (organisational and legal form, objects of the company), location of the given unit in the organisational structure and its basic tasks, scope of obligations and rights on selected positions, general discussion of the formal instruments applicable to the entire organisation and manners of personnel management in the selected thematic area. Indication by the lecturer of issues and problems requiring a detailed diagnosis and focusing the student's attention to innovative instruments that may be applied in the enterprise analysed.	4
Cl. 5 Cl. 6	Work in diagnostic groups - consultations related to substantive problems, evaluation of the advancement of students' work. Discussing the information gathered by groups, describing the existing situation and consultations related to the manner of preparation of Chapters 2 and 3 of the written report.	4
Cl. 7-14	Presentation of the results of the diagnostic research - case studies, discussion and evaluation of presentation.	16
Cl.15	Summing up classes: discussing conclusions related to the assessment of written reports and students' presentations - indication of good and bad points.	2

Total hours	30
TEACHING TOOLS USED	
N1. Traditional lecture with multimedia presentations. N2. Self-study of student N3. Short presentation (5 minutes) - audiovisual means (slides, computer projector). N4. Work in diagnostic groups - consultations with the lecturer. N5. Written report, edited according to a strictly defined template N6. Students' presentation of the final reports - audiovisual media (slides, computer projector) N7. Studies in chosen organization – interviews, documentary analysis, surveys. N8. Discussion.	

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01, PEK_W02 PEK_W03, PEK_W04	Colloquium 1.
F2	PEK_W05, PEK_W06 PEK_W07	Colloquium 2.
P(lecture)=0,5*F1+0,5*F2		
F3	PEK_U1, PEK_U5; PEK_K01	Participation during classes - participation in the discussion 28 pts.
F4	PEK_U03; PEK_05	1st presentation: substantive value - 5 pts., presentation quality - 5 pts.
F5	PEK_U02; PEK_U5; PEK_K01, PEK_K02	2nd presentation: completeness - 5 pts., substantive value - 10 pts., presentation quality - 10 pts.
F6	PEK_U01; PEK_U02; PEK_U04	Diagnostic raport (30 pts) entitled "Diagnosis ... name of the selected area of personnel management in ... organisation name as exemplified by the ... (name) Department". source materials – 7 pts.
P(class)= F3+F4+F5+F6		
Failed .< 50 cred. Satisfactory. 51 - 59 cred.. Satisfactory + 60 - 67 cred. Good. 68 - 77 cred. Good.+ 78 - 85 cred. Very good 86 - 95 cred.. Excellent > 95 cred..		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- Contemporary human resource management :text and cases /ed. by Tom Redman and Adrian Wilkinson. Harlow [etc.] : Financial Times Prentice Hall, 2006.
- Human resource management /Lloyd L. Byars, Leslie W. Rue. Boston : McGraw-Hill, cop. 2004.

SECONDARY LITERATURE:

- Human resource management :an experiential approach /H. John Bernardin. Boston : McGraw-Hill/Irwin, cop. 2003.
- Fundamentals of human resource management /David A. DeCenzo, Stephen P. Robbins. Hoboken : John Wiley & Sons, cop. 2005.

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przy współpracy:
Marian Waldemar Brol, marian.brol@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Modern Human Resource Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W09, K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec1, Lec2, Lec8	N1, N4, N5, N8
PEK_W02	K1_ZARZ_W09, K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec3, Lec4, Lec5, Lec8	N1, N2, N8
PEK_W03	K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec6, Lec8	N1, N2, N8
PEK_W04	K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec7, Lec8	N1, N2, N8
PEK_W05	K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec9, Lec10, Lec11, Lec15	N1, N2, N8
PEK_W06	K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec12, Lec15	N1, N2, N8
PEK_W07	K1_ZARZ_W12, S1_ZARZ_OM_W04	C1,C2	Lec13, Lec14, Lec15	N1, N2, N8
PEK_U01	K1_ZARZ_U03; K1_ZARZ_U15 S1_ZARZ_OM_U04	C3 ; C5	Cl.1 – Cl.15	N3 – N6, N8
PEK_U02	K1_ZARZ_U03; K1_ZARZ_U07; K1_ZARZ_U15	C3; C5	Cl.5 - Cl.15	N3-N6, N7, N8
PEK_U03	K1_ZARZ_U04, S1_ZARZ_OM_U04	C3; C5	Cl.3; Cl.4 Cl.7 – Cl.14	N3, N4, N5, N7, N8
PEK_U04	K1_ZARZ_U16; K1_ZARZ_U17	C3	Cl.2; Cl.5; Cl.6; Cl.15	N5, N4, N8
PEK_U05	K1_ZARZ_U16; K1_ZARZ_U17	C3; C4; C5	Cl.3;Cl.4 Cl.7-Cl.14	N3, N6, N4, N8
PEK_K01	K1_ZARZ_U15; K1_ZARZ_K01	C1; C4	Cl.7 – Cl.14	N2, N6, N8
PEK_K02	K1_ZARZ_K04	C4; C5	Cl. 2; Cl.5; Cl.6 Cl.7 – Cl.14	N4; N6; N7; N8

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY ...W8..... / DEPARTMENT.....					
SUBJECT CARD					
Name in Polish ...Kompleksowe zarządzanie jakością					
Name in English ...TOTAL QUALITY MANAGEMENT					
Main field of study (if applicable): ...ORGANIZATION AND MANAGEMENT					
Specialization (if applicable): ORGANIZATIONAL MANAGEMENT (OM)					
Level and form of studies: 1st, full-time					
Kind of subject: obligatory					
Subject code ZMZ1255					
Group of courses YES / NO*					

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30			
Number of hours of total student workload (CNPS)	90	60			
Form of crediting	Exam	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	3	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	1			

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES
Basic knowledge of theory of management

SUBJECT OBJECTIVES

C1 Acquisition of knowledge of the concepts of quality management in organizations, in particular the terms and the principles of quality management in the philosophy of TQM and KAIZEN.

C2 Acquisition of knowledge of the design, implementation, operation, maintenance and improvement of quality management systems in business organizations, especially the quality management standard according to ISO 9000 series.

C3 Acquisition of knowledge about the basic techniques and methods of improve the quality management.

C4 Acquisition of skills at using selected quality management tools in solving quality problems in organizations.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows basic terms and definitions connected with the quality management.

PEK_W02 Knows concepts of quality management in organizations, in particular the principles of quality management according to TQM and KAIZEN.

PEK_W03 Knows the quality management standards according to ISO 9000 series

PEK_W04 Knows the basic techniques and methods of quality management improvement.

relating to skills:

PEK_U01 Can apply quality improvement tools in organizations.

PEK_U02 Can identify and evaluate the possibilities of using quality improvement tools in organizations.

PEK_U03 Can interpret the requirements of the ISO 9001 quality management standards and develop plans to implement the quality management systems.

relating to social competences:

PEK_K01 Can search and choose the methods for solving problems in the workplace.

PEK_K02 Can individually improve the knowledge and understanding skills in the field.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to the lecture. Basic terms (quality, characteristics of quality, quality management)	2
Lec 2	Classic techniques of quality management.	2
Lec 3	Evolution of approaches to quality and quality management.	2
Lec 4	The concept of Kaizen.	2
Lec 5	New techniques of quality management.	2
Lec 6	The concept of quality management according to W. E. Deming and J.M. Juran.	2
Lec 7	Quality management according to the concept of Ph.B. Crosby.	2
Lec 8	Other philosophers of quality management. Costs of quality.	2
Lec 9	The concept and principles of Total Quality Management - TQM.	2
Lec 10	TQM principles - continued.	2
Lec 11	The FMEA Method.	2
Lec 12	Standard-setting bodies. Standardization of the quality management systems.	2
Lec 13	Requirements of the quality management according to the ISO 9001 standard.	2
Lec 14	The ISO 9001 auditing and certification. Other standards of quality management.	2
Lec 15	Summary of the lecture	2
	Total hours	30

Form of classes – class		Number of hours
Cl 1	Introduction to the classes.	2
Cl 2	The classic techniques of quality management: the Ishikawa diagram.	2
Cl 3	The classic techniques of quality management: the Pareto-Lorenz diagram.	2
Cl 4	The classic techniques of quality management: the scatter diagram and histogram.	2
Cl 5	The classic techniques of quality management: the control chart $\bar{X}_{ev}R$.	2
Cl 6	Additional classic techniques of quality management.	2
Cl 7	The modern techniques of quality management: “7 waste”, the matrix diagram	2
Cl 8	The modern techniques of quality management: the systematic diagram, the PDPC diagram.	2
Cl 9	Analysis of the quality costs.	2

CI 10	Process mapping.	2
CI 11	Failures analysis, their effects and causes: the FMEA method.	2
CI 12	Evaluation of customer satisfaction: CSI method.	2
CI 13	Analysis of the requirements of the ISO 9001:2008 standard.	2
CI 14	New techniques of quality management and another tools.	2
CI 15	Final test.	2
Total hours		30

TEACHING TOOLS USED

- N1. Traditional lecture - presentation using a slide projector.
N2. Own work - independent literature studies and preparation for the final test.
N3. Solving tasks during classes and at home.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01÷PEK_U03 PEK_K01, PEK_K02	Results of solving tasks during classes
F2	PEK_U01÷PEK_U03	Written test on the skills at using the quality management tools
F3	PEK_W01÷PEK_W04	Exam

Classes P=F1+F2

Lecture P=F3

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] The materials published on the course website.
[2] Hoyle D., *Quality: Management Essentials*, Oxford; Burlington, MA: Butterworth-Heinemann, 2007.
[3] Sujak-Cyrul B., *Quality Management System. An introduction to the Project of Documenting and Audit of Quality Management Systems*, Wrocław University of Technology, Wrocław 2011.
[4] ISO 9001, *Quality management systems – Requirements. ISO, 2008*
[5] ISO 9000, *Quality management systems - Fundamentals and vocabulary, ISO, 2005*

SECONDARY LITERATURE:

- [1] Dahlgaard J.J., Kristenson K., Kanji G. K. , *Fundamentals of Quality management*, Taylor and Francis 2002
[2] Frankel E.G., *Quality decision management - the heart of effective futures-oriented management: a primer for effective decision-based management*, Springer Verlag, 2008.
[3] Oakland J. S., *Total quality management: text with cases*, Amsterdam : Elsevier, 2003.
[4] www.ISO.org.
[5] www. PKN.org (polish).
[6] Selected articles from: „*The TQM Magazine*”, „*The Total Quality Management and Excellence*”, „*The International Journal of Quality and Reliability Management*”, „*Managing Service Quality*”, „*The International Journal of Operational & Production Management*”, „*Quality Progress*”.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
TOTAL QUALITY MANAGEMENT
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Organization and Management
AND SPECIALIZATION **ORGANIZATIONAL MANAGEMENT (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W05	C1- C4	Lec 1-15	N1, N2
PEK_W02	K1_ZARZ_W15 S1_ZARZ_OM_W05	C1, C2	Lec 3-1ec10	N1, N2
PEK_W03	ZARZ_OM_W05 S1_ZARZ_OM_W05	C2	Lec 12-15	N1, N2
PEK_W04	S1_ZARZ_OM_W05	C3	Lec3, Lec5, Lec8, Lec11	N1, N2, N3
PEK_U01 (skills)	S1_ZARZ_OM_U06	C4	CI2-CI14	N3
PEK_U02	K1_ZARZ_U02 K1_ZARZ_U03 K1_ZARZ_U17 K1_ZARZ_U16 K1_ZARZ_U15 K1_ZARZ_U07 K1_ZARZ_U06 S1_ZARZ_OM_U06	C4	CI2-CI14	N3
PEK_U03	S1_ZARZ_OM_U06	C2, C4	CI 13	N3
PEK_K01 (competences)	K1_ZARZ_K05	C1-C4	CI6	N3
PEK_K02	K1_ZARZ_K01	C1-C4	Lec2-Lec15 CI 2-CI15	N2

FACULTY ...W8..... / DEPARTMENT.....					
SUBJECT CARD					
Name in Polish ...Kompleksowe zarządzanie jakością					
Name in English ...TOTAL QUALITY MANAGEMENT					
Main field of study (if applicable): ...ORGANIZATION AND MANAGEMENT					
Specialization (if applicable): ORGANIZATIONAL MANAGEMENT (OM)					
Level and form of studies: 1st, full-time					
Kind of subject: obligatory					
Subject code ZMZ1255					
Group of courses NO*					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30			
Number of hours of total student workload (CNPS)	90	60			
Form of crediting	Exam	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	3	2			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	1	1			

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES
Basic knowledge of theory of management
SUBJECT OBJECTIVES
C1 Acquisition of knowledge of the concepts of quality management in organizations, in particular the terms and the principles of quality management in the philosophy of TQM and KAIZEN.
C2 Acquisition of knowledge of the design, implementation, operation, maintenance and improvement of quality management systems in business organizations, especially the quality management standard according to ISO 9000 series.
C3 Acquisition of knowledge about the basic techniques and methods of improve the quality management.
C4 Acquisition of skills at using selected quality management tools in solving quality problems in organizations.
SUBJECT EDUCATIONAL EFFECTS
relating to knowledge:
PEK_W01 Knows basic terms and definitions connected with the quality management.
PEK_W02 Knows concepts of quality management in organizations, in particular the principles of quality management according to TQM and KAIZEN.
PEK_W03 Knows the quality management standards according to ISO 9000 series
PEK_W04 Knows the basic techniques and methods of quality management improvement.
relating to skills:

PEK_U01 Can apply quality improvement tools in hipotetical organizations.
 PEK_U02 Can identify and evaluate the possibilities of using quality improvement tools in organizations.
 PEK_U03 Can interpret the requirements of the ISO 9001 quality management standards and develop plans to implement the quality management systems.
relating to social competences:
 PEK_K01 Can search and choose the methods for solving problems in the workplace.
 PEK_K02 Can individually improve the knowledge and understanding skills in the field.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	Introduction to the lecture. Basic terms (quality, characteristics of quality, quality management)	2
Lec 2	Classic techniques of quality management.	2
Lec 3	Evolution of approaches to quality and quality management.	2
Lec 4	The concept of Kaizen.	2
Lec 5	New techniques of quality management.	2
Lec 6	The concept of quality management according to W. E. Deming and J.M. Juran.	2
Lec 7	Quality management according to the concept of Ph.B. Crosby.	2
Lec 8	Other philosophers of quality management. Costs of quality.	2
Lec 9	The concept and principles of Total Quality Management - TQM.	2
Lec 10	TQM principles - continued.	2
Lec 11	The FMEA Method.	2
Lec 12	Standard-setting bodies. Standardization of the quality management systems.	2
Lec 13	Requirements of the quality management according to the ISO 9001 standard.	2
Lec 14	The ISO 9001 auditing and certification. Other standards of quality management.	2
Lec 15	Summary of the lecture	2
	Total hours	30

Form of classes – class		Number of hours
Cl 1	Introduction to the classes.	2
Cl 2	The classic techniques of quality management: the Ishikawa diagram.	2
Cl 3	The classic techniques of quality management: the Pareto-Lorenz diagram.	2
Cl 4	The classic techniques of quality management: the scatter diagram and histogram.	2
Cl 5	The classic techniques of quality management: the control chart $X_{ev}R$.	2
Cl 6	Additional classic techniques of quality management.	2
Cl 7	The modern techniques of quality management: “7 waste”, the matrix diagram	2
Cl 8	The modern techniques of quality management: the systematic diagram, the PDPC diagram.	2
Cl 9	Analysis of the quality costs.	2
Cl 10	Process mapping.	2

CI 11	Failures analysis, their effects and causes: the FMEA method.	2
CI 12	Evaluation of customer satisfaction: CSI method.	2
CI 13	Analysis of the requirements of the ISO 9001:2008 standard.	2
CI 14	New techniques of quality management and another tools.	2
CI 15	Final test.	2
	Total hours	30

TEACHING TOOLS USED

- N1. The traditional lecture - presentation using a slide projector.
 N2. Own work - independent literature studies and preparation for the final test.
 N3. Solving tasks during classes and at home.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01÷PEK_U03 PEK_K01, PEK_K02	Results of solving tasks during classes
F2	PEK_U01÷PEK_U03	Written test on the skills at using the quality management tools
F3	PEK_W01÷PEK_W04	Exam
Classes P=F1+F2 Lecture P=F3		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] The materials published on the course website.
 [2] Hoyle D., *Quality: Management Essentials*, Oxford; Burlington, MA: Butterworth-Heinemann, 2007.
 [3] Sujak-Cyruł B., *Quality Management System. An introduction to the Project of Documenting and Audit of Quality Management Systems*, Wrocław University of Technology, Wrocław 2011.
 [4] ISO 9001, *Quality management systems – Requirements. ISO, 2008*
 [5] ISO 9000, *Quality management systems - Fundamentals and vocabulary, ISO, 2005*

SECONDARY LITERATURE:

- [1] Dahlgaard J.J., Kristenson K., Kanji G. K. , *Fundamentals of Quality management*, Taylor and Francis 2002
 [2] Frankel E.G., *Quality decision management - the heart of effective futures-oriented management: a primer for effective decision-based management*, Springer Verlag, 2008.
 [3] Oakland J. S., *Total quality management: text with cases*, Amsterdam : Elsevier, 2003.
 [4] www.ISO.org.
 [5] www. PKN.org (polish).
 [6] Selected articles from: „*The TQM Magazine*”, „*The Total Quality Management and Excellence*”, „*The International Journal of Quality and Reliability Management*”, „*Managing Service Quality*”, „*The International Journal of Operational & Production Management*”, „*Quality Progress*”.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Anna Dobrowolska PhD, Ing. (Anna.Dobrowolska@pwr.wroc.pl)

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT

TOTAL QUALITY MANAGEMENT

AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY

Organization and Management

AND SPECIALIZATION **ORGANIZATIONAL MANAGEMENT (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W05	C1- C4	Lec 1-15	N1, N2
PEK_W02	K1_ZARZ_W15 S1_ZARZ_OM_W05	C1, C2	Lec 3-1ec10	N1, N2
PEK_W03	ZARZ_OM_W05 S1_ZARZ_OM_W05	C2	Lec 12-15	N1, N2
PEK_W04	S1_ZARZ_OM_W05	C3	Lec3, Lec5, Lec8, Lec11	N1, N2, N3
PEK_U01 (skills)	S1_ZARZ_OM_U06	C4	C12-C114	N3
PEK_U02	K1_ZARZ_U02 K1_ZARZ_U03 K1_ZARZ_U17 K1_ZARZ_U16 K1_ZARZ_U15 K1_ZARZ_U07 K1_ZARZ_U06 S1_ZARZ_OM_U06	C4	C12-C114	N3
PEK_U03	S1_ZARZ_OM_U06	C2, C4	C1 13	N3
PEK_K01 (competences)	K1_ZARZ_K05	C1-C4	C16	N3
PEK_K02	K1_ZARZ_K01	C1-C4	Lec2-Lec15 C1 2-C115	N2

FACULTY **Computer Science and Management****SUBJECT CARD**

Name in Polish **Trening kierowniczy**
Name in English **Management Training**
Main field of study (if applicable): ... **Management**
Specialization (if applicable): **Organizational Management**
Level and form of studies: **1st level, full-time studies**
Kind of subject: **obligatory**
Subject code **ZMZ1257L**
Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)			30		
Number of hours of total student workload (CNPS)			60		
Form of crediting			Crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points			2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes			1		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge from the field of organizational management, marketing and corporate finance
2. Basic skills in MS EXCEL.

SUBJECT OBJECTIVES

- C1: Widening students knowledge on the main functional areas of a company and their interrelations.
- C2: Making students realize the financial and economic results of the use of chosen pricing methods and in particular the cost-based method.
- C 3: Improving students abilities to use financial and economic information, and particularly information included in financial statements, in working out short-term decisions.
- C4: Training of system thinking and decision taking under uncertainty conditions.
- C5: Deepening students knowledge on the development and the use of simple computer tools supporting decision making processes in an enterprise. Improving the ability to use these tools in a simulated reality under uncertainty conditions.
- C6: Improving the presentation of the results of the teamwork in the presence of immediate audience

(students).

C7: Improving team decision making.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01: The student has a deepened knowledge concerning the main functional areas of a production enterprise as well as concerning the influence of the action taken within one area on the results achieved in other functional areas. He understands the connections of the real resources flows and the financial flows.

PEK_W02: The student has a knowledge on the conditions and the financial and economic results of the use of the cost-based pricing method in an enterprise under uncertainty conditions .

PEK_W03: The student has a knowledge on the development and the use of simple computer tools (EXCELL worksheets) supporting decision making processes in an enterprise.

relating to skills:

PEK_U01: Using the information from the financial statements of a company and from other sources, the student is able to identify the main reasons for the discrepancy between the actual financial (and economic) situation of that company and the predicted one. On this basis he is capable of working out more effective future decisions.

PEK_U02: The student is able to develop a simple computer tool (system) supporting the process of working out decisions in an enterprise, as well as to use it in examining the results of various alternative decisions in order to chose the most advantageous ones.

PEK_U03: The student is able to point out the main actions aiming at reaching the required values of financial and economic ratios in a company, as well as to apply these actions in the simulated reality.

PEK_U04: The student is able to prepare a report on managing a simulated company and on the results of the management, as well as to present this report in public, using multimedia. He is also in a position to defend effectively the statements (theses) formulated in the report, using various available information sources.

relating to social competences:

PEK_K01: During the teamwork the student is able to explain and justify reasonably his own point of view and to objectively value (assess) the arguments of others. He is aware of the necessity of working out compromises.

PEK_K02: The student is able to prioritise tasks assigned to a given role in a team.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1		
Lec 2		
....		
	Total hours	
Form of classes - class		Number of hours
Cl 1		
Cl 2		
..		
	Total hours	

Form of classes - laboratory		Number of hours
Lab 1	Discussion of the course completion criteria and the main work stages. Introduction to the management game, and - among other things – description of the economic system simulated in the game. Initial work on the system DSS_G supporting the process of working out decisions in the game: subsystem <i>Materials</i> .	2
Lab 2	Development of the system DSS_G (continuation) - subsystems: <i>Work in Process; Finished Products; External Warehouses; Natural Environment</i> .	2
Lab 3	Development of the system DSS_G (continuation) – subsystem <i>Selling Price of Finished Products</i> .	2
Lab 4	Development of the system DSS_G (continuation) – subsystems: <i>Necessary Production Personnel and Necessary Production Machines; Credits; Cash Flow</i> . Discussion of the requirements to be met during the test game. Test checking students knowledge.	2
Lab 5	Test game. Correcting errors in the system DSS_G . Corrective (supplementary) test checking students knowledge.	2
Lab 6	Correcting errors in the system DSS_G (continuation). Discussion of the scenario for the main game.	2
Lab 7	Running the main game.	2
Lab 8	Running the main game (continuation).	2
Lab 9	Running the main game (continuation).	2
Lab 10	Running the main game (continuation).	2
Lab 11	Running the main game (continuation).	2
Lab 12	Running the main game (continuation).	2
Lab 13	Discussion of the main results achieved by the teams in the management game (teaching person). Presentation of the final reports prepared by teams (students).	2
Lab 14	Presentation of the Final Reports prepared by teams (continuation).	2
Lab 15	Presentation of the Final Reports prepared by teams (continuation). Course summary.	2
	Total hours	30
Form of classes - project		Number of hours
Proj 1		
Proj 2		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
...		
	Total hours	
TEACHING TOOLS USED		
N1. Knowledge transfer with the use of multimedia (teaching person).		
N2. Student self-studying: preparatory work for laboratory classes.		

N3. Discussion.
N4. Problem solving exercises.
N5. Simulation Game/Simulation
N6. Presentation of the Final Reports with the use of multimedia (students).

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01÷PEK_W03	Answering Questions, Discussions, Test, Short Tests
F2	PEK_U01, PEK_U03	Answering Questions, Discussions
F3	PEK_U02	Results of the Test Game, Answering Questions, Discussions
F4	PEK_K01, PEK_K02	Answering Questions, Discussions
F5	PEK_U04	Presentation of the Final Report on managing the company
F6	PEK_W01÷PEK_W03; PEK_U01, PEK_U03	Evaluation of the results achieved by teams in the main game
$P = 0,1*(F1+F2+F3+F4)+0,3*F5+0,3*F6$		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Rzońca W., Business Game *COMPANY* - user's manual, appendices and supplementary materials (accessible during the classes and on the website)
- [2] Jones J., Moven M., Hansen D., Heitger D., Rich J., Financial and Managerial Accounting: The Cornerstones of Business Decisions, South-Western Cengage Learning, 2012 (chosen parts)
- [3] Drury C., Management Accounting for Business, Cengage Learning EMEA 2009 (chosen parts)

[4]

SECONDARY LITERATURE:

- [1]
[2]
[3]

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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In collaboration with:

Alicja Balcerak; Alicja.Balcerak@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Management Training
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Organization Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W09, K1_ZARZ_U16	C1	Lab7÷Lab15	N1÷N6
PEK_W02	K1_ZARZ_W11	C2	Lab7÷Lab12	N2÷N5
PEK_W03	K1_ZARZ_W24	C5	Lab1÷Lab12	N2÷N5
PEK_U01 (skills)	K1_ZARZ_U03	C3	Lab7÷Lab12	N2÷N5
PEK_U02	K1_ZARZ_U05, K1_ZARZ_U07	C2÷C4	Lab1÷Lab12	N2÷N5
PEK_U03	K1_ZARZ_U11	C3	Lab7÷Lab15	N2÷N6
PEK_U04	K1_ZARZ_U15, K1_ZARZ_U17	C6	Lab13÷Lab15	N2, N3, N6
PEK_K01 (competences)	K1_ZARZ_U17, K1_ZARZ_K08	C7	Lab7÷Lab15	N2÷N5
PEK_K02	K1_ZARZ_K03, K1_ZARZ_K08	C7	Lab7÷Lab15	N2÷N5

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY ...W8..... / DEPARTMENT.....					
SUBJECT CARD					
Name in Polish ...Zarządzanie procesami					
Name in English ...BUSINESS PROCESS MANAGEMENT					
Main field of study (if applicable): Management					
Specialization (if applicable): Organizational Management (OM)					
Level and form of studies: 1st, full-time					
Kind of subject: obligatory					
Subject code ZMZ1258					
Group of courses YES / NO*					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	60				
Form of crediting	crediting with grade*				
For group of courses mark (X) final course					
Number of ECTS points	2				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Basic knowledge of theory of management

SUBJECT OBJECTIVES

- C1 Acquisition of knowledge of the nature of a process approach to organization management.
- C2 Acquisition of basic knowledge of the process management models in the organization and implementation of the process approach in the management of organizations.
- C3 Acquisition of basic knowledge of processes management tools.

SUBJECT EDUCATIONAL EFFECTS**relating to knowledge:**

- PEK_W01 Knows the essence and basic models of the processes management in organizations.
- PEK_W02 Identifies issues of the process management in different types of organizations, especially in organizations managed by quality.
- PEK_W03 Knows the basic methods of design, analysis, modeling, evaluation and improvement of processes of an organization.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	Introduction to the lecture. Definition of a process of the organization. Types of business processes.	2
Lec 2	The approaches to the process management in the history of the management.	2
Lec 3	The idea of the process approach in the management of organizations. The rationale and objectives for the implementation of the process approach to management.	2
Lec 4	The differences between the functional-oriented and process-oriented organization. The organizational structure of process-managed organizations.	2
Lec 5	Characteristics of the processes in a process-managed organization. Assessment of the maturity of the process management in organization.	2
Lec 6	Business Process Management models.	2
Lec 7	Planning the implementation of process management in the organization. Reengineering as a concept of implementation of the Business Process Management in the organization.	2
Lec 8	Techniques of design and analysis of the process structure. Graphic description of the process.	2
Lec 9	Measurement and evaluation processes. Conditions of measurement process. Selection process evaluation measures. Methods for monitoring processes.	2
Lec 10	Overview of methods and process improvement techniques.	2
Lec 11	Benchmarking as a method of process improvement. Outsourcing in a process-managed organizations.	2
Lec 12	Application of Lean Management in improving processes.	2
Lec 13	Barriers to the implementation of the process approach to an organization.	2
Lec 14	Summary of the lecture.	2
Lec 15	Passing test	2
	Total hours	30

TEACHING TOOLS USED
N1. The traditional lecture - presentation using a slide projector. N2. Own work - independent literature studies and preparation for the final test.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W01- PEK_W03	Final test

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] The materials published on the course website.
- [2] Damelio R., *The Basics of Process Mapping*, (2nd Edition) Francis&Taylor, USA, 2011.
- [3] Hammer M. Hershman L., *Faster Cheaper Better: The 9 Levers for Transforming How Work Gets Done*. Crown Business, 2010.
- [4] Page S., *Power of Business Process Improvement - 10 Simple Steps to Increase Effectiveness, Efficiency, and Adaptability*, AMACOM – Book Division of American Management Association, 2010.
- [5] Rummler G.A., Brache A.P., *Improving performance. How to manage the white Space on the Organization Chart*. Jossey-Bass Inc.,Publisher 1995.

SECONDARY LITERATURE:

- [1] Armistead C., Rowland P., *Managing business processes: BPR and beyond*, John Wiley and Sons, Chichester 1996.
- [2] Becker J., Kugeler M., Rosemann M., *Process management: a guide for the design of business processes*. Springer-Verlag, Berlin Heidelberg 2003.
- [3] Burton T. T., Boeder S.M., *The lean extended enterprise: moving beyond the four walls to value stream excellence*, Boca Raton: J. Ross Publishing: APICS, 2003.
- [4] Hammer M., Champy J., *Reengineering the Corporation. A Manifesto for Business Revolution..* Jossey-Bass Inc.,Publisher 1993.
- [5] Hammer M., *Beyond Reengineering. How the Process-Centered Organization is Changing our Work and our Lievs*. HarperCollins Publishers, Inc., New York, 1996.
- [6] Harrington, H.J. (et al.), *Business process improvement workbook : documentation, analysis, design, and management of business process improvement*. McGraw-Hill, 2012.
- [7] Koren Y., *Global Manufacturing Revolution - Product-Process-Business Integration and Reconfigurable*, John Wiley & Sons, 2010 .
- [8] Smith H., Fingar P., *Business Process Management: The Third Wave*, Off-press November 2002, Meghan-Kiffer Pres.
- [9] Selected articles from: „*Business Process Management Journal*”, „*The TQM Magazine*”, „*The Total Quality Management and Excellence*”, „*The International Journal of Quality and Reliability Management*”, „*The International Journal of Operational & Production Management*”.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Dr inż. Anna Dobrowolska, anna.dobrowolska@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
 BUSINESS PROCESS MANAGEMENT
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 Management
 AND SPECIALIZATION ORGANIZATIONAL MANAGEMENT (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W05 K1_ZARZ_W09	C1	Lec1-Lec14	N1, N2
PEK_W02	K1_ZARZ_W05 K1_ZARZ_W08 K1_ZARZ_W09 K1_ZARZ_W15	C2	Lec2-13	N1, N2
PEK_W03	K1_ZARZ_W16	C3	Lec7-Lec12	N1, N2

** - enter symbols for main-field-of-study/specialization educational effects

FACULTY ...W8..... / DEPARTMENT.....					
SUBJECT CARD					
Name in Polish ...Zarządzanie procesami					
Name in English ...BUSINESS PROCESS MANAGEMENT					
Main field of study (if applicable): Management					
Specialization (if applicable): Organizational Management (OM)					
Level and form of studies: 1st, full-time					
Kind of subject: obligatory					
Subject code ZMZ1258					
Group of courses NO*					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	60				
Form of crediting	crediting with grade*				
For group of courses mark (X) final course					
Number of ECTS points	2				
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	1				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Basic knowledge of theory of management

SUBJECT OBJECTIVES

- C1 Acquisition of knowledge of the nature of a process approach to organization management.
- C2 Acquisition of basic knowledge of the process management models in the organization and implementation of the process approach in the management of organizations.
- C3 Acquisition of basic knowledge of processes management tools.

SUBJECT EDUCATIONAL EFFECTS**relating to knowledge:**

- PEK_W01 Knows the essence and basic models of the processes management in organizations.
- PEK_W02 Identifies issues of the process management in different types of organizations, especially in organizations managed by quality.
- PEK_W03 Knows the basic methods of design, analysis, modeling, evaluation and improvement of processes of an organization.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	Introduction to the lecture. Definition of a process of the organization. Types of business processes.	2
Lec 2	The approaches to the process management in the history of the management.	2
Lec 3	The idea of the process approach in the management of organizations. The rationale and objectives for the implementation of the process approach to management.	2
Lec 4	The differences between the functional-oriented and process-oriented organization. The organizational structure of process-managed organizations.	2
Lec 5	Characteristics of the processes in a process-managed organization. Assessment of the maturity of the process management in organization.	2
Lec 6	Business Process Management models.	2
Lec 7	Planning the implementation of process management in the organization. Reengineering as a concept of implementation of the Business Process Management in the organization.	2
Lec 8	Techniques of design and analysis of the process structure. Graphic description of the process.	2
Lec 9	Measurement and evaluation processes. Conditions of measurement process. Selection process evaluation measures. Methods for monitoring processes.	2
Lec 10	Overview of methods and process improvement techniques.	2
Lec 11	Benchmarking as a method of process improvement. Outsourcing in a process-managed organizations.	2
Lec 12	Application of Lean Management in improving processes.	2
Lec 13	Barriers to the implementation of the process approach to an organization.	2
Lec 14	Summary of the lecture.	2
Lec 15	Passing test	2
	Total hours	30

TEACHING TOOLS USED
N1. The traditional lecture - presentation using a slide projector. N2. Own work - independent literature studies and preparation for the final test.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W01- PEK_W03	Final test

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] The materials published on the course website.
- [2] Damelio R., *The Basics of Process Mapping*, (2nd Edition) Francis&Taylor, USA, 2011.
- [3] Hammer M. Hershman L., *Faster Cheaper Better: The 9 Levers for Transforming How Work Gets Done*. Crown Business, 2010.
- [4] Page S., *Power of Business Process Improvement - 10 Simple Steps to Increase Effectiveness, Efficiency, and Adaptability*, AMACOM – Book Division of American Management Association, 2010.
- [5] Rummler G.A., Brache A.P., *Improving performance. How to manage the white Space on the Organization Chart*. Jossey-Bass Inc.,Publisher 1995.

SECONDARY LITERATURE:

- [1] Armistead C., Rowland P., *Managing business processes: BPR and beyond*, John Wiley and Sons, Chichester 1996.
- [2] Becker J., Kugeler M., Rosemann M., *Process management: a guide for the design of business processes*. Springer-Verlag, Berlin Heidelberg 2003.
- [3] Burton T. T., Boeder S.M., *The lean extended enterprise: moving beyond the four walls to value stream excellence*, Boca Raton: J. Ross Publishing: APICS, 2003.
- [4] Hammer M., Champy J., *Reengineering the Corporation. A Manifesto for Business Revolution..* Jossey-Bass Inc.,Publisher 1993.
- [5] Hammer M., *Beyond Reengineering. How the Process-Centered Organization is Changing our Work and our Lievs*. HarperCollins Publishers, Inc., New York, 1996.
- [6] Harrington, H.J. (et al.), *Business process improvement workbook : documentation, analysis, design, and management of business process improvement*. McGraw-Hill, 2012.
- [7] Koren Y., *Global Manufacturing Revolution - Product-Process-Business Integration and Reconfigurable*, John Wiley & Sons, 2010 .
- [8] Smith H., Fingar P., *Business Process Management: The Third Wave*, Off-press November 2002, Meghan-Kiffer Pres.
- [9] Selected articles from: „*Business Process Management Journal*”, „*The TQM Magazine*”, „*The Total Quality Management and Excellence*”, „*The International Journal of Quality and Reliability Management*”, „*The International Journal of Operational & Production Management*”.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
 BUSINESS PROCESS MANAGEMENT
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 Management
 AND SPECIALIZATION ORGANIZATIONAL MANAGEMENT (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W05 K1_ZARZ_W09	C1	Lec1-Lec14	N1, N2
PEK_W02	K1_ZARZ_W05 K1_ZARZ_W08 K1_ZARZ_W09 K1_ZARZ_W15	C2	Lec2-13	N1, N2
PEK_W03	K1_ZARZ_W16	C3	Lec7-Lec12	N1, N2

** - enter symbols for main-field-of-study/specialization educational effects

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish** Mikroekonomia**Name in English** Microeconomics**Main field of study (if applicable):** Management**Specialization (if applicable):** Organizational Management (OM)**Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** EKZ1127W, EKZ1127C**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	30			
Number of hours of total student workload (CNPS)	120	60			
Form of crediting	Examination	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	4	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	1			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. -

SUBJECT OBJECTIVES

C1 The main aim of the course is to present basic knowledge in Microeconomics area., especially

C2 To introduce essential economic models like demand model and supply model

C3. To introduce economic terms like costs, revenues, profits

C4. To introduce how the company functions

C5. To introduce optimal decisions theory for

C5.1 customers

C5.2 producers

C6. To introduce basics of market structures

C7.To extend students abilities of understanding the functioning of market

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Understands the economy mechanisms, especially how the market functions

PEK_W02 Knows the basic tools of government intervention

PEK_W04 Understands the fundamental economic laws and relationships

PEK_W05 Knows and understands essential economic terms and indicators.

PEK_W06 Knows the fundamental market structures and typical economic decisions of companies functioning in all market structures

PEK_W07 Understands all essential economic terms concerning the business: assets, capital, revenue, cost, profit.

PEK_W08 Knows all essential relationships between customer and producer

relating to skills:

PEK_U01 Can identify main chances and threats for businesses.

PEK_U02 Can calculate and interpret basic economic indicators and measures.

PEK_U03 Can calculate the optimal economic point

PEK_U04 Can analyse the market structures and give examples from real economy

PEK_U05 Can classify costs in real company

PEK_U06 Can analyse the economic environment of company

relating to social competences:

PEK_K01 Can identify economic and social determinants.

PEK_K02 Can discuss about business and justify his opinions

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction: Characteristics of the market system: definitions of Economics, freedom of enterprise and choice, competition, broken window fallacy	2
Lec 2	Introductions cont: markets and prices, capital goods, specialization, use of money, microeconomics versus macroeconomics, schools of economic thought, scarcity	2
Lec 3	Opportunity cost, rational self-interest and homo economicus, economic goods, free goods, economic bads,	2
Lec 4	Factors of production, economics of information, positive and normative analysis, economic methodology	2
Lec 5	Demand and supply law, demand and supply shocks	2
Lec 6	Ceiling and floor prices, government purchases, results of government intervention	2
Lec. 7	Elasticity and its application: demand and supply elasticities, price and income elasticities, classification of goods	2
Lec. 8	Households as income receivers: customers choice, budget constraint line, optimal customer point	2
Lec. 9	Legal forms of businesses: advantages and disadvantages	2
Lec. 10	Classification of costs, marginal costs theory, break even point	2
Lec. 11	Profit maximization theory, economic versus accounting profit, golden rule	2
Lec. 12	Market structures – general overview, classification and key features	2
Lec. 13	Perfect competition and monopolistic competition – economic models and examples	2

Lec. 14	Oligopoly and Monopoly – economic models and examples	2
Lec. 15	Review	2
	Total hours	30
Form of classes - class		Number of hours
Cl 1	Demand and supply law – exercises and discussion	2
Cl 2	Demand and supply shocks, determinants of shifting demand and supply curve – exercises and discussion	2
Cl 3	Ceiling prices – discussion about results, floor prices – discussion about results. Exercises about market equilibrium point.	2
Cl 4	Price elasticity of demand – exercises, methods of calculation, discussion about determinants of price elasticity of demand	2
Cl. 5	Income elasticity of demand, price elasticity of supply – exercises and discussion	2
Cl. 6	Customer choice theory – exercises and discussion	2
Cl. 7	Legal forms of businesses – discussion, short presentations, case study	2
Cl. 8	Written test	2
Cl. 9	Costs, revenues, break even point – exercises, case study	2
Cl. 10	Marginal theory – exercises and discussion	2
Cl. 11	Golden rule, profit maximization theory – exercises and discussion	2
Cl. 12	Perfect competition and monopolistic competition – exercises and case studies	2
Cl. 13	Oligopoly and Monopoly - exercises and case studies	2
Cl. 14	Written test	2
Cl. 15	Review, discussion about test results, analysis of test typical mistakes	2
	Total hours	30
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		

Sem 3		
...		
	Total hours	

TEACHING TOOLS USED

Lectures
 N1. Lectures
 N2. Multimedia presentations
 N3. Films
 Classes
 N4. Exercises
 N5. Discussion
 N6. Homework
 N7. Case studies
 N8. Self preparation to the classes
 N9. Films and presentations

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U1÷PEK_U6 PEK_K01, PEK_K02	Activeness in solving exercises during classes
F2	PEK_U4, PEK_U6	Activeness in discussions during classes
F3	PEK_U1÷PEKU5	Checking of homework
F4	PEK_U2÷PEKU6	Written tests
F5	PEK_W01 ÷PEKW08 PEK_U1÷PEKU6	Examination
P (lecture) = F5 P (classes) = 0,10*F1+0,10*F2+0,10*F3+0,7*F4		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] „Microeconomics 6e” Prentice Hall Publishing House, June 2004
- [2] D. Begg, S. Fischer, R. Dornsbuch *Economics*, 2003.
- [3] Mas-Colell A., Whinston M.D. Green J.R. *Microeconomic Theory*, Oxford University Press, 1995.
- [4] G.A. Jehle, P.J.Reny, *Advanced Microeconomic Theory*. Addison Wesley, 2001.

SECONDARY LITERATURE:

- [1] A. Mass-Colell, M. Whinston, J. Creen, *Microeconomic Theory*. Oxford University Press, Oxford 1995.
- [2] H.R. Varian, *Microeconomic Analysis*. W. W. Norton and Company, 1992.
- [3] M. Friedman, R. Friedman, *Free to choose*, Harvest Book 1990.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Microeconomics
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Organizational Management (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_Zarz_W01	C1	Wy1	N1, N2, N7
PEK_W02	K1_Zarz_W01 K1_Zarz_W03	C1, C2	Wy2, Wy4	N1, N2, N7
PEK_W03	K1_Zarz_W03	C5.1	Wy3, Wy5, Wy6, Wy7, Wy8	N1, N2, N3, N7
PEK_W04	K1_Zarz_W03 K1_Zarz_W06	C5.2, C6	Wy3, Wy5, Wy7 Wy9÷W17	N1, N2, N3, N7
PEK_W05	K1_Zarz_W03 K1_Zarz_W06	C2, C3, C4, C5.2, C6	Wy5+ Wy7 Wy14÷W17	N1, N2, N3, N7
PEK_W06	K1_Zarz_W02 K1_Zarz_W03	C2, C4	Wy4, Wy7, Wy9, Wy15÷Wy17	N1, N2, N3, N7
PEK_W07	K1_Zarz_W03 K1_Zarz_W06	C3	Wy4+Wy8, Wy13÷ Wy16	N1, N2, N3, N7
PEK_W08	K1_Zarz_W03	C5.1, C5.2, C7	Wy1+Wy3, Wy8, Wy11÷Wy15	N1, N2, N3, N7
PEK_U01 (skills)	K1_Zarz_U02, K1_Zarz_U03	C1, C2, C4 + C7	Ćw1+Ćw5, Ćw8÷Ćw14	N4, N5, N7, N8
PEK_U02	K1_Zarz_U02, K1_Zarz_U03, K1_Zarz_U04,	C5 + C7	Ćw3÷5, Ćw8+Ćw14	N4, N5, N7, N8
PEK_U03	K1_Zarz_U02, K1_Zarz_U03	C2, C3	Ćw3, Ćw5, Ćw9+Ćw14	N5, N7, N8
PEK_U04	K1_Zarz_U03	C4, C7	Ćw2÷Ćw5 Ćw8+Ćw11	N4, N5, N6, N7, N9
PEK_U05	K1_Zarz_U03	C5	Ćw10+Ćw13	N4, N5, N6, N7, N9
PEK_U06	K1_Zarz_U02	C4	Ćw1+Ćw5 Ćw7-Ćw14	N4, N5, N7, N8, N9
PEK_K01 (copetencess)	K1_Zarz_K08	C1 ÷ C7	Wy1÷Wy17 Ćw2÷Ćw5, Ćw9+Ćw14	N1, N2, N3, N5, N7, N8
PEK_K02	K1_Zarz_K06	C4 + C7	Wy3, Wy9 Wy10+Wy15, Wy17	N1, N2, N3, N4, N5, N7, N8

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF INFORMATICS AND MANAGEMENT**SUBJECT CARD****Name in Polish** Makroekonomia**Name in English** MACROECONOMICS**Main field of study (if applicable):** Management**Specialization (if applicable):** Organizational Management (OM)**Level and form of studies:** 1st level, full-time**Kind of subject:** obligatory**Subject code** EKZ1128**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of classes organized by the University (ZZU)	30	15			
The total number of hours of student workload (CNPS)	120	60			
Form of crediting	Examination	credit with a grade			
For a group of courses final course mark (X)					
Number of points ECTS	4	2			
including the number of points corresponding to the classes of practical (P)		2			
in the number of ECTS credits corresponding to the classes requiring direct contact (BK)	1	0,5			

*niepotrzebne skreślić

PREREQUISITES FOR KNOWLEDGE, SKILLS AND OTHER POWERS

1. A course in microeconomics

COURSE OBJECTIVES

C1 Knowledge and understanding of the theory of macroeconomic management, including in terms of the different schools of economics.

C2 Education the ability to understand the correctness of macroeconomic management in the context of economic growth and development.

C3 Education skills identification and analysis of macroeconomic factors in the dimension of content and control in conjunction with the implemented economic policy

SUBJECT LEARNING OUTCOMES

The scope of knowledge:

PEK_W01 He has knowledge of the place of economics in the sciences, and of the substantive and methodological links with other scientific disciplines. It is characterized by the main theories of economics.

PEK_W02 He knows the circumstances and depending on macroeconomic growth and development of the national economy and the world. Knows the basic economic tools and regulations on the national economy, the economies of integration groups globally.

The range of skills:

PEK_U01 Understands and is able to use theoretical knowledge in economics and related disciplines to analyze and interpret problems in macroeconomic management.

PEK_U02 It has the ability to identify, understand and analyze the macroeconomic factors in the context of the policy as part of macroeconomic and business environment.

The scope of social competence:

PEK_K01 Can discuss possible solutions to the practical functioning of the economy at the macroeconomic level, to justify the view presented by analyzing the benefits and risks of particular solutions.

Course content		
Type of course - lecture		Number of hours
Lec 1	Modern economic school of macroeconomics, neoclassical school, mainstream Keynesian, monetarist, supply economics, current institutional.	4
Lec 2	The role of the state in a market economy	2
Lec 3	Two paradigms in macroeconomics. Model of aggregate demand and aggregate supply	2
Lec 4	Development and economic growth. Measurement of economic growth and development	2
Lec 5	Fluctuations in the market economy. counter-cyclical policy	4
Lec 6	The monetary - credit	4
Lec 7	State budget fiscal policy	2
Lec 8	Unemployment	2
Lec 9	Inflation	2
Lec 10	International Trade	2
Lec 11	Balance of payments and exchange rates	2
Lec 12	Macroeconomics global economy. Globalization and international economic integration	2
Total hours		30

Type of course - classes		Number of hours
CI 1	The concept and the basic problems of macroeconomics	2
CI 2	Creation and distribution of national income and its calculation	2
CI 3	Cycle. counter-cyclical policy	2

CI 4	The monetary - credit. The essence, the policy tools	2
CI 5	Budget - fiscal policy	2
CI 6	Inflation and unemployment	2
CI 7	International trade. Balance of payments. exchange rates	2
CI 8	Final test	1
	Total hours	15

Type of course - laboratory		Number of hours
La1		
La2		
La3		
La4		
La5		
...		
	Total hours	

Type of course - project		Number of hours
Pr1		
Pr2		
Pr3		
Pr4		
...		
	Total hours	

Type of course - seminar		Number of hours
Se1		
Se2		
Se3		
...		
	Total hours	

TOOLS FOR TEACHING
Lecture N1. Lecture information N2. Multimedia presentation N3. Lecture problem Classes N4. Solving practical N5. Discussion

EVALUATION OF THE EFFECTS OF EDUCATION ACHIEVEMENTS

Ratings (F - forming (during the semester), P - Summary (at the end of the semester))	Number of training effect	Way to evaluate the effect of education achievement
F1	PEK W02	Test
F2	PEK U01	Practical exercises test

	PEK U02	
F3	PEK K01	Participation in the discussion
F4	PEK W01 PEK W02 PEK U01	The examination in the form of test
P (lecture) = F4		
P (classes) = 0,8*F1+0,1*F2+0,1*F3		

BASIC AND ADDITIONAL READING

BASIC READING:

- [1] D. Begg, S. Fischer, R. Dornsbuch, *Makroekonomia*, t.2, PWE, Warszawa 2007.
- [2] R. Milewski (red.), *Podstawy ekonomii*, PWN, Warszawa 2001 i kolejne wydania.
- [3] E. Skawińska, K. Sobiech, K. Nawrot, *Makroekonomia*, PWE, Warszawa 2008.
- [4] E. Skawińska, K. Sobiech, K. Nawrot, *Makroekonomia*, PWE, Warszawa 2008.

ADDITIONAL READING:

- [1] Z. Bombera, H. Szczepiński, J. Telep (red.) *Państwo i rynek w gospodarce europejskiej*, Wyd. Almamater, Warszawa 2008.
- [2] E. Frejtag – Mika, *Teoria i praktyka ekonomii a konkurencyjność gospodarowania*, Wyd. Difin, Warszawa 2006.
- [3] S. Swadźba, *Systemy gospodarcze i ich ewolucja*, Wyd. AE w Katowicach, Katowice 2008.
- [4] R. Milewski (red.), *Podstawy ekonomii. Ćwiczenia, zadania, problemy*, PWN, Warszawa 2002 i kolejne wydania.

COURSE SUPERVISOR (NAME, ADDRESS E-MAIL)

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
MACROECONOMICS
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **MANAGEMENT**
AND SPECIALIZATION **Organizational Management (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_Zarz_W01 K1_Zarz_W02	C1	Lec1÷Lec12	N1, N2, N3
PEK_W02	K1_Zarz_W03	C2, C3	CI 1÷CI 7	N4, N5
PEK_U01 (knowledge)	K1_Zarz_U02 K1_Zarz_U03	C1 C2	Lec1, Lec3÷Lec12 CI 3÷CI 7	N2, N3, N4, N5
PEK_U02	K1_Zarz_U03	C3	Lec1, Lec2, Lec5÷Lec12	N3,N4
PEK_K01 (competence)	K1_Zarz_K01 K1_Zarz_K08	C3	Lec1÷Lec12 CI 1÷CI 7	N1, N3, N4, N5

** - type of directional symbols / specialization of learning outcomes

*** - from the table above

Faculty Computer Science and Management**SUBJECT CARD**

Name in Polish:	Wprowadzenie do zarządzania ryzykiem
Name in English:	Introduction to Risk Management
Main field of study (if applicable):	Management (Zarządzanie)
Specialization (if applicable):	Organizational Management
Level and form of studies:	1st level, full-time
Kind of subject:	obligatory
Subject code:	EKZ1129
Group of courses:	NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	60			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	1	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Basic knowledge of the mechanics of financial markets, elementary probability and statistics.

SUBJECT OBJECTIVES

C1 To provide information about the statistics of financial markets, the use of financial instruments to manage risk and the tools for risk measurement.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 Knows the mechanics of financial markets.

PEK_W02 Knows how to measure statistical properties of financial asset prices.

PEK_W03 Knows how to use financial instruments to manage risk.

PEK_W04 Knows how to measure risk.

Relating to skills:

PEK_U01 Can measure volatility of asset prices.

PEK_U02 Can evaluate duration and convexity of bond portfolios.

PEK_U03 Can build stock portfolios.

PEK_U04 Can measure VaR and CFaR.

Relating to social competences:

PEK_K01 Is aware of the need for an independent, critical assessment of the scope and level of his/her knowledge in the field of risk management. Is prepared for conducting self-studies in this area.

PEK_K02 Can engage in a discussion and defend his/her views regarding the methods of risk management.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec1	Investments, financial markets, stock and futures exchanges	4
Lec2	Statistics of financial markets	3
Lec3	FX and debt instruments, duration and convexity	2
Lec4	Capital market, elements of portfolio theory	2
Lec5	Value-at-risk (VaR), Cash Flow-at-Risk (CFaR)	4
	Total hours	15
Form of classes - class		Number of hours
Cl1	Financial markets, stock and futures exchanges	2
Cl2	Statistics of financial markets	3
Cl3	FX and debt instruments, duration and convexity	2
Cl4	Capital market, elements of portfolio theory	2
Cl5	Value-at-risk (VaR), Cash Flow-at-Risk (CFaR)	4
Cl6	Final test	2
	Total hours	15

TEACHING TOOLS USED

- N1. Multimedia lecture
- N2. Practical exercises
- N3. Discussion
- N4. Student's own work

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01÷PEK_W04 PEK_U01÷PEK_U04	Class participation (participation in discussions and problem solving, preparation for class activities)

F2	PEK_W01÷PEK_W04 PEK_U01÷PEK_U04	Grade based on the final test
$P(W) = \frac{1}{2} F1 + \frac{1}{2} F2$ $P(\acute{C}) = \frac{1}{2} F1 + \frac{1}{2} F2$		

PRIMARY AND SECONDARY LITERATURE
<u>PRIMARY LITERATURE:</u>
<p>[1] Z. Bodie, A. Kane, A.J. Marcus (2007) Essentials of Investments (6th ed.), McGraw-Hill</p> <p>[2] J. Franke, W. Härdle, C. Hafner (2005) Introduction to Statistics of Financial Markets, Springer</p> <p>[3] P. Jorion (2006) Value at Risk (3rd Ed.), McGraw-Hill</p>
<u>SECONDARY LITERATURE:</u>
<p>[1] E.J. Elton, M.J. Gruber, S.J. Brown, W.N. Goetzmann (2002) Modern Portfolio Theory and Investment Analysis, Wiley</p> <p>[2] F.J. Fabozzi (2005) The Handbook of Fixed Income Securities", McGraw-Hill</p> <p>[3] P. Wilmott (2000) Paul Wilmott on Quantitative Finance, Wiley, Chichester</p>
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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Introduction to Risk Management (Wprowadzenie do zarządzania ryzykiem)
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (wiedza)	K1_ZARZ_W03, K1_ZARZ_W11	C1	Lec1, Ć11	N1-4
PEK_W02	K1_ZARZ_W24	C1	Lec2, Ć12	N1-4
PEK_W03	S1_ZARZ_OM_W08	C1	Lec3-4, Ć13-4	N1-4
PEK_W04	S1_ZARZ_OM_W08	C1	Lec5, Ć15	N1-4
PEK_U01 (umiejętności)	K1_ZARZ_U05	C1	Lec2, Ć12	N2-4
PEK_U02	K1_ZARZ_U05, S1_ZARZ_OM_U08	C1	Lec3, Ć13	N2-4
PEK_U03	S1_ZARZ_OM_U08	C1	Lec4, Ć14	N2-4
PEK_U04	S1_ZARZ_OM_U08	C1	Lec5, Ć15	N2-4
PEK_K01 (kompetencje)	K1_ZARZ_K01	C1	Ć11-5	N2-4
PEK_K02	K1_ZARZ_K08	C1	Ć11-5	N2-4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT

SUBJECT CARD

Name in Polish: Programowanie aplikacji użytkowych
Name in English: Programming applications
Main field of study (if applicable): Management
Specialization (if applicable): Organizational management
Level and form of studies: 1st level, full-time
Kind of subject: optional
Subject code: IEZ1211
Group of courses: NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30		30		
Number of hours of total student workload (CNPS)	60		60		
Form of crediting	crediting with grade		crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	2		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	1		1		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knows the functional and hardware structures of computers, the concept and the classification of computer software.
2. Capable of using computers, working in the operation system graphical environment using application programs.

SUBJECT OBJECTIVES

- C1. To acquire capability to create internet information systems.
 C2. To acquire capability to create basic computer programs.
 C3. To acquire social competencies specific for the applications of web services and application development in information systems in organizations

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01. Knows the rules for designing and developing websites and the basics of HTML and CSS.

PEK_W02. Knows the basic principles of design and development of computer programs.

PEK_W03. Knows how to automate tasks using software applications and programming languages.

relating to skills:

PEK_U01. Capable to perform a simply information system.

PEK_U02. Capable to implement a simply computer program.

PEK_U03. Capable take advantage of the programming elements to extend the functionality of computer utility package.

relating to social competences:

PEK_K01. Capable unaided to develop her/his knowledge and skills, to collaborate and to work in groups, ready to identify, analyze and solve problems in the area of the use of Internet services and utilities in the organization

PEK_K02. Capable professionally to find and chose problem solving methods, to take the responsibility for them, pass over, convince and defend own views related to the application of the computer programming.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1,2	Internet information system. Create HTML documents.	3
Lec 2,3	Using CSS to create web pages.	3
Lec 4	Basic concepts of computer programming. Flowcharts.	2
Lec 5	Data types, variables and constants. Standard types. Algebraic expression: construction, types, valuation expressions.	2
Lec 6,7	Basic instructions and structural instructions.	4
Lec 8	Structural types: table, string, record. Defining data types.	2
Lec 9,10	Procedures and functions - defining and using.	4
Lec 11,12	Create and use macros. Automating tasks. Creating and using subroutines in MS Office / OpenOffice.	4
Lec 13	Create and use forms in MS Office / OpenOffice.	2
Lec 14,15	Create and use a library. Object-oriented programming.	4
	Total hours	30

Form of classes - class

Form of classes - class		Number of hours
	Total hours	

Form of classes - laboratory		Number of hours
Lab 1	Create HTML documents	2
Lab 2,3	Creating a website using HTML and CSS.	4
Lab 4	Practical test (F1).	2
Lab 5	Create a simple computer calculation programs.	2
Lab 6,7	Create programs using structural instructions.	4
Lab 8	Create programs with complex data structures.	2
Lab 9	Defining of the subroutines.	2
Lab 10	Practical test (F2).	2
Lab 11	Automating tasks with macros.	2
Lab 12,13	Creating forms and application programming elements in the computer utility package.	4
Lab 14	Practical test (F3).	2
Lab 15	Summary. Credit.	2
	Total hours	30

Form of classes - project		Number of hours
	Total hours	

Form of classes - seminar		Number of hours
	Total hours	

TEACHING TOOLS USED
N1. Lecture. N2. Multimedia presentation. N3. Laboratory instruction. N4. Instruction during classes. N5. Workstation with graphical operation system MS Windows and web browser. N6. Workstation with graphical operation system MS Windows and Dev-Pascal. N7. Workstation with graphical operation system MS Windows and MS Office / OpenOffice. N8. Practical test. N9. Written test.

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01 PEK_U01	Practical test

F2	PEK_W02 PEK_U02	Practical test
F3	PEK_W02 PEK_W03 PEK_U03	Practical test
P	PEK_W01 PEK_W02 PEK_W03 PEK_K01(partially) PEK_K02(partially)	Written test
P=1, F=3		

PRIMARY AND SECONDARY LITERATURE
<u>PRIMARY LITERATURE:</u> [1] Freeman Er., Freeman El.: Head First HTML with CSS & XHTML. [2] Jelen B., Syrstad T.: VBA and Macros: Microsoft Excel 2010. [3] Knuth D.E.: The Art of Computer Programming. [4] Wirth N.: The programming language Pascal.
<u>SECONDARY LITERATURE:</u> [1] Aho A.V., Ullman J.D., Hopcroft J.E.: Data Structures and Algorithms. [2] Wirth N.: Algorithms and Data Structures.
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)
Jerzy Pieronek, jerzy.pieronek@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Programming applications
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Zarządzanie**
AND SPECIALIZATION **Organizational Management**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1	Lec 1-3	1 – 2, 9
PEK_W02	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Lec 4-10	1 – 2, 9
PEK_W04	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Lec 11-15	1 – 2, 9
PEK_U01	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1	Lec 1-3 Lab 1-3	3, 4, 5, 8
PEK_U02	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	Lec 4-10 Lab 5-9	3, 4, 6, 8
PEK_U04	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	Lec 11-15 Lab 11-13	3, 4, 7, 8
PEK_K01	K1_ZARZ_K02, K1_ZARZ_K03	C3	In connection with all programme content	In connection with all teaching tools
PEK_K02	K1_ZARZ_K05, K1_ZARZ_K07, K1_ZARZ_K08, K1_ZARZ_K09	C3	In connection with all programme content	In connection with all teaching tools

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

WYDZIAŁ INFORMATYKI I ZARZĄDZANIA

KARTA PRZEDMIOTU

Nazwa w języku polskim:	Programowanie aplikacji użytkowych
Nazwa w języku angielskim:	Programming applications
Kierunek studiów (jeśli dotyczy):	Zarządzanie
Specjalność (jeśli dotyczy):	Organizational management
Stopień studiów i forma:	I stopień, stacjonarna
Rodzaj przedmiotu:	wybieralny
Kod przedmiotu:	IEZ1211
Grupa kursów:	NIE

	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium
Liczba godzin zajęć zorganizowanych w Uczelni (ZZU)	30		30		
Liczba godzin całkowitego nakładu pracy studenta (CNPS)	60		60		
Forma zaliczenia	zaliczenie na ocenę		zaliczenie na ocenę		
Dla grupy kursów zaznaczyć kurs końcowy (X)					
Liczba punktów ECTS	2		2		
w tym liczba punktów odpowiadająca zajęciom o charakterze praktycznym (P)			2		
w tym liczba punktów ECTS odpowiadająca zajęciom wymagającym bezpośredniego kontaktu (BK)	1		1		

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. Zna strukturę funkcjonalną i sprzętową komputera, pojęcie i klasyfikacje oprogramowania komputerów.
2. Potrafi użytkować urządzenia komputera, pracować w środowisku graficznego systemu operacyjnego i posługiwać się programami użytkowymi.

CELE PRZEDMIOTU

- C1. Przystwojenie przez studentów umiejętności tworzenia stron internetowych.
- C2. Przystwojenie przez studentów umiejętności tworzenia prostych programów komputerowych oraz automatyzacji zadań przy wykorzystaniu programów użytkowych i języków programowania.
- C3. Nabycie kompetencji społecznych specyficznych dla działalności związanej z zastosowaniem serwisów internetowych oraz programowania aplikacji w systemach informacyjnych w organizacjach.

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01. Zna zasady projektowania i tworzenia stron internetowych oraz podstawy języka HTML oraz CSS.

PEK_W02. Zna podstawowe zasady projektowania i tworzenia programów komputerowych.

PEK_W03. Zna sposoby automatyzacji zadań wykonywanych przy użyciu programów użytkowych i języków programowania.

Z zakresu umiejętności:

PEK_U01. Potrafi wykonać prosty internetowy serwis informacyjny.

PEK_U02. Potrafi zaimplementować prosty program komputerowy.

PEK_U03. Potrafi wykorzystać elementy programowania do rozszerzenia funkcjonalności komputerowych pakietów użytkowych.

Z zakresu kompetencji społecznych:

PEK_K01 Potrafi samodzielnie rozwijać swą wiedzę i umiejętności, współdziałać i pracować w zespołach, wykazuje gotowość analizy i rozwiązywania problemów w zakresie zastosowania serwisów internetowych i programów użytkowych w organizacji.

PEK_K02. Potrafi w sposób profesjonalny poszukiwać oraz dobierać metody rozwiązywania problemów, brać za nie odpowiedzialność, przekazywać, przekonywać i bronić własnych poglądów związanych z zastosowaniem programowania komputerów.

TREŚCI PROGRAMOWE

Forma zajęć - wykład		Liczba godzin
Wy1,2	Serwis internetowy. Tworzenie dokumentów HTML.	3
Wy2,3	Zastosowanie CSS przy tworzeniu stron internetowych.	3
Wy4	Podstawowe pojęcia programowania komputerów. Schematy blokowe.	2
Wy5	Pojęcia typów, zmiennych i stałych. Typy standardowe. Wyrażenia algebraiczne: budowa, typy, wartościowanie wyrażeń.	2
Wy6,7	Instrukcje proste i strukturalne.	2
Wy8	Typy strukturalne: tablice, napisy, rekordy. Definiowanie typów danych.	4
Wy9,10	Procedury i funkcje - deklarowanie i użycie.	2
Wy11,12	Tworzenie i użycie makr. Automatyzacja zadań. Tworzenie i użycie podprogramów w MS Office / OpenOffice.	4
Wy13	Tworzenie i użycie formularzy w MS Office / OpenOffice.	2
Wy14,15	Tworzenie i użycie biblioteki/modułu. Programowanie obiektowe.	4
	Suma godzin	30

Forma zajęć - ćwiczenia		Liczba godzin
	Suma godzin	

Forma zajęć - laboratorium		Liczba godzin
La1	Tworzenie dokumentów HTML.	2
La2,3	Tworzenie serwisu internetowego z użyciem HTML i CSS.	4
La4	Sprawdzian praktyczny przy komputerze (F1).	2
La5	Tworzenie prostych komputerowych programów obliczeniowych.	2

La6,7	Tworzenie programów z użyciem instrukcji strukturalnych.	4
La8	Tworzenie programów z użyciem złożonych struktur danych.	2
La9	Definiowanie podprogramów.	2
La10	Sprawdzian praktyczny przy komputerze (F2).	2
La11	Automatyzacja zadań z wykorzystaniem makr.	2
La12,13	Tworzenie formularzy oraz zastosowanie elementów programowania w pakietach użytkowych.	4
La14	Sprawdzian praktyczny przy komputerze (F3).	2
La15	Podsumowanie materiału. Zaliczenie.	2
	Suma godzin	30

Forma zajęć - projekt		Liczba godzin
	Suma godzin	

Forma zajęć - seminarium		Liczba godzin
	Suma godzin	

STOSOWANE NARZĘDZIA DYDAKTYCZNE
<p>N1. Wykład informacyjno-problemowy. N2. Prezentacja multimedialna. N3. Instrukcja laboratoryjna. N4. Instruktaż podczas zajęć laboratoryjnych. N5. Stanowiska komputerowe umożliwiające pracę w środowisku MS Windows oraz przeglądarka internetowa. N6. Stanowiska komputerowe umożliwiające pracę w środowisku MS Windows oraz Dev-Pascal. N7. Stanowiska komputerowe umożliwiające pracę w środowisku MS Windows oraz MS Office. N8. Sprawdzian praktyczny przy komputerze. N9. Sprawdzian pisemny.</p>

OCENA OSIĄGNIĘCIA PRZEDMIOTOWYCH EFEKTÓW KSZTAŁCENIA

Oceny (F – formująca (w trakcie semestru), P – podsumowująca (na koniec semestru))	Numer efektu kształcenia	Sposób oceny osiągnięcia efektu kształcenia
F1	PEK_W01 PEK_U01	Sprawdzian praktyczny przy komputerze
F2	PEK_W02 PEK_U02	Sprawdzian praktyczny przy komputerze
F3	PEK_W02 PEK_W03 PEK_U03	Sprawdzian praktyczny przy komputerze
P	PEK_W01 PEK_W02 PEK_W03	Sprawdzian pisemny

	PEK_K01(częściowo) PEK_K02(częściowo)	
F = 3; P = 1		

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA

LITERATURA PODSTAWOWA:

- [1] Freeman Er., Freeman El.: Head First HTML with CSS & XHTML.
- [2] Jelen B., Syrstad T.: VBA and Macros: Microsoft Excel 2010.
- [3] Knuth D.E.: The Art of Computer Programming.
- [4] Wirth N.: The programming language Pascal.

LITERATURA UZUPEŁNIAJĄCA:

- [1] Aho A.V., Ullman J.D., Hopcroft J.E.: Data Structures and Algorithms.
- [2] Wirth N.: Algorithms and Data Structures.

OPIEKUN PRZEDMIOTU (IMIE, NAZWISKO, ADRES E-MAIL)

Jerzy Pieronek, jerzy.pieronek@pwr.wroc.pl

MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Programming applications
 Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU **Zarządzanie**
 I SPECJALNOŚCI **Organizational Management**

Przedmiotowy efekt kształcenia	Odniesienie przedmiotowego efektu do efektów kształcenia zdefiniowanych dla kierunku studiów i specjalności (o ile dotyczy)**	Cele przedmiotu***	Treści programowe***	Numer narzędzia dydaktycznego***
PEK_W01	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1	Wy1-3	1 – 2, 9
PEK_W02	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Wy4-12	1 – 2, 9
PEK_W03	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C2	Wy13-15	1 – 2, 9
PEK_U01	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1	Wy1-3 La1-3	3, 4, 5, 8
PEK_U02	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	Wy4-12 La5-9	3, 4, 6, 8
PEK_U03	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C2	W13-15 La11-13	3, 4, 7, 8
PEK_K01	K1_ZARZ_K02, K1_ZARZ_K03	C3	W związku z wszystkimi treściami programowymi	W związku z wszystkimi narzędziami dydaktycznymi
PEK_K02	K1_ZARZ_K05, K1_ZARZ_K07, K1_ZARZ_K08, K1_ZARZ_K09	C3	W związku z wszystkimi treściami programowymi	W związku z wszystkimi narzędziami dydaktycznymi

** - wpisać symbole kierunkowych/specjalnościowych efektów kształcenia

*** - z tabeli powyżej

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT					
SUBJECT CARD					
Name in Polish:	Technologia przetwarzania danych				
Name in English:	Data processing technology				
Main field of study (if applicable):	Management				
Specialization (if applicable):	Organizational management				
Level and form of studies:	1st level, full-time				
Kind of subject:	optional				
Subject code:	IEZ1208				
Group of courses:	NO				
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15		30		
Number of hours of total student workload (CNPS)	60		60		
Form of crediting	crediting with grade		crediting with grade		
For group of courses mark (X) final course					
Number of ECTS points	2		2		
including number of ECTS points for practical (P) classes			2		
including number of ECTS points for direct teacher-student contact (BK) classes	0,5		1		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES**

1. Knows the functional and hardware structures of computers, the concept and the classification of computer software.
2. Capable of using computers, working in the operation system graphical environment using application programs.

SUBJECT OBJECTIVES

- C1 To get knowledge about relational data bases and ways of creating and using them in practice.
- C2 To acquire capability to create and use of relational database systems for getting information ad hoc for company management purposes.
- C3 To acquire social competences specific for the applications of database systems in management information systems.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01. Knows the relational data base structure and basic problems of their creating and using.

PEK_W02. Knows operations of the relational algebra as a basis of the relational database system functioning. in data gathering, memorizing and distributing.

PEK_W03. Knows a data base graphical user interface.

relating to skills:

PEK_U01 Capable to implement a simple relational data base system.

PEK_U02 Capable to get information ad hoc from the relational database system by defining in the data base graphical user interface data retrieval processes.

relating to social competences:

PEK_K01 Capable unaided to develop her/his knowledge and skills, to collaborate and to work in groups, ready to identify, analyze and solve problems in the area of the application of the database systems in management problems solving.

PEK_K02. Capable professionally to find and chose problem solving methods, to take the responsibility for them, pass over, convince and defend own views connecting with the application of the database systems in management problems solving.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Relational database technology. Data base management system. Relational data base and its structure. Update data operations. Integrity constraints.	2
Lec 2	Definition, application and implementation of operation on tables: selection, projection, equi-join. Superposition of selection, projection and equi-join operations.	2
Lec 3	Definition, application and implementation of operation on tables: set-theoretic operations: union, intersection, unsymmetrical difference, complement.	2
Lec 4	Definition, application and implementation of operation on tables: division and theta-join.	2
Lec 5	Interpretation of queries given in a natural language and planning of the data processing process. Optimizing of the data processing process.	2
Lec 6	Update anomalies. Table decomposition, schema decomposition.	2
Lec 7	Functional dependences between data in tables and their types. Use of the functional dependences in data base schema design.	2
Lec 8	Written test (P)	1
	Total hours	15
Form of classes - class		Number of hours
Cl 1		

CI 2		
CI 3		
CI 4		
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1	Sample database management system and its functions; creating a data base; defining of the data base table structures.	2
Lab 2	Defining of the data properties, primary and additional keys. Applying of integrity constraints in the data base design and verifying the data base management system control functions.	2
Lab 3	Forms, their application, types and structure. Form implementation.	2
Lab 4	Practical test (F1).	2
Lab 5	Trading company data base case study. Tables and relationships. Primary and additional keys.	2
Lab 6	Select and make table queries. Defining queries. Query properties.	2
Lab 7	Defining of the one table search process. Implementation of the selection and projection operations.	2
Lab 8	Defining of the many tables search process. Defining of the virtual columns, data grouping, selecting and aggregating, aggregation functions.	2
Lab 9	Practical test (F2).	2
Lab 10	Defining of the tables union processes. Append queries. The set-theoretic union operation implementation.	2
Lab 11	Defining of the tables intersection processes. The set-theoretic intersection operation implementation.	2
Lab 12	Defining of the tables difference processes. Delete queries. The set-theoretic difference operation implementation.	2
Lab 13	Implementation of the complement operation. Reports, their application, types and structures. Report implementation.	2
Lab 14	Practical test (F3).	2
Lab 15	Summary. Credit.	2
	Total hours	30
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	

Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED

- N1. Lecture
- N2. Multimedia presentation
- N3. Laboratory instruction
- N4. Instruction during classes
- N5. Attitude and behavior of the teacher
- N6. Workstation with graphical operation system MS Windows and MS Access
- N7. Practical test
- N8. Written test

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_W01 PEK_U01	Practical test
F2	PEK_W02 PEK_W03 PEK_U01 PEK_U02	Practical test
F3	PEK_W02 PEK_W03 PEK_U01 PEK_U02	Practical test
P	PEK_W01 PEK_W02 PEK_W03 PEK_K01(partialy) PEK_K02(partialy)	Written test
P=1, F=3		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Jeffrey D. Ullman, Jennifer Widom. A first course in database systems. Upper Saddle River : Prentice Hall, 1997.
- [2] Witold Rekuć Laboratory instruction
- [3] Witold Rekuć Multimedia presentation

SECONDARY LITERATURE:

- [4] C. J. Date. An introduction to database systems. Boston [etc.] : Pearson Addison Wesley, cop. 2004

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Witold Rekuć, witold.rekuc@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT

Data processing technology
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Management
AND SPECIALIZATION Organizational management

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N8
PEK_W02	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N8
PEK_W03	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N8
PEK_U01	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2	Lab 1, Lab 2, Lab 3, Lab 5, Lab 6, Lab 7, Lab 8, Lab 10, Lab 11, Lab 12, Lab 13	N3, N4, N6, N7
PEK_U02	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2	Lab 1, Lab 2, Lab 3, Lab 5, Lab 6, Lab 7, Lab 8, Lab 10, Lab 11, Lab 12, Lab 13	N3, N4, N6, N7
PEK_K01	K1_ZARZ_K01, K1_ZARZ_K02, K1_ZARZ_K04	C3	In connection with all programme content	In connection with all teaching tools
PEK_K02	K1_ZARZ_K05, K1_ZARZ_K07, K1_ZARZ_K08, K1_ZARZ_K09	C3	In connection with all programme content	In connection with all teaching tools

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

WYDZIAŁ INFORMATYKI I ZARZĄDZANIA

KARTA PRZEDMIOTU

Nazwa w języku polskim:	Technologia przetwarzania danych
Nazwa w języku angielskim:	Data processing technology
Kierunek studiów (jeśli dotyczy):	Zarządzanie
Specjalność (jeśli dotyczy):	Organizational Management (OM)
Stopień studiów i forma:	I stopień, stacjonarna
Rodzaj przedmiotu:	wybieralny
Kod przedmiotu:	IEZ1208
Grupa kursów:	NIE

	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium
Liczba godzin zajęć zorganizowanych w Uczelni (ZZU)	15		30		
Liczba godzin całkowitego nakładu pracy studenta (CNPS)	60		60		
Forma zaliczenia	zaliczenie na ocenę		zaliczenie na ocenę		
Dla grupy kursów zaznaczyć kurs końcowy (X)					
Liczba punktów ECTS	2		2		
w tym liczba punktów odpowiadająca zajęciom o charakterze praktycznym (P)			2		
w tym liczba punktów ECTS odpowiadająca zajęciom wymagającym bezpośredniego kontaktu (BK)	0,5		1		

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. Zna strukturę funkcjonalną i sprzętową komputera, pojęcie i klasyfikacje oprogramowania komputerów.
2. Potrafi użytkować urządzenia komputera, pracować w środowisku graficznym systemu operacyjnego i posługiwać się programami użytkowymi.

CELE PRZEDMIOTU

- C1 Przystwojenie przez studentów wiedzy o systemach relacyjnych baz danych i mechanizmach ich tworzenia oraz użycia w praktyce.
- C2 Przystwojenie przez studentów umiejętności tworzenia i wykorzystania systemów relacyjnych baz danych w pozyskiwaniu informacji ad hoc dla celów zarządzania firmą.
- C3 Nabycie kompetencji społecznych specyficznych dla działalności związanej z zastosowaniem systemów baz danych w systemach informacyjnych zarządzania

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01. Zna strukturę relacyjnej bazy danych oraz podstawowe problemy jej projektowania i tworzenia.

PEK_W02. Zna operacje algebry relacji jako podstawy funkcjonowania systemu relacyjnej bazy danych w gromadzeniu, przechowywaniu i udostępnianiu danych.

PEK_W03. Zna graficzny język kwerend systemu bazy danych

Z zakresu umiejętności:

PEK_U01 Potrafi zaimplementować prosty system relacyjnej bazy danych

PEK_U02 Potrafi pozyskiwać ad hoc informacje z relacyjnej bazy danych drogą definiowania procesów wyszukiwania danych w graficznym języku kwerend

Z zakresu kompetencji społecznych:

PEK_K01 Potrafi samodzielnie rozwijać swą wiedzę i umiejętności, współdziałać i pracować w zespołach, wykazuje gotowość do identyfikowania, analizy i rozwiązywania problemów w zakresie zastosowania systemów baz danych do rozwiązywania problemów zarządzania.

PEK_K02. Potrafi w sposób profesjonalny poszukiwać oraz dobierać metody rozwiązywania problemów, brać za nie odpowiedzialność, przekazywać, przekonywać i bronić własnych poglądów związanych z zastosowaniem systemów baz danych w rozwiązywaniu problemów zarządzania.

TREŚCI PROGRAMOWE

Forma zajęć – wykład		Liczba godzin
Wy1	Technologia relacyjnych baz danych. System zarządzania bazą danych. Relacyjna baza danych i jej struktura. Operacje aktualizacji danych. Więzy integralnościowe.	2
Wy2	Definicja, zastosowanie i realizacja operacji na tabelach: selekcja, projekcja, równo-złączenie. Złożenie operacji selekcji, projekcji, równo-złączenia	2
Wy3	Definicja, zastosowanie i realizacja operacji na tabelach: operacje teoriomnogościowe: suma, iloczyn, różnica niesymetryczna, dopełnienie.	2
Wy4	Definicja, zastosowanie i realizacja operacji na tabelach: dzielenie i teta-złączenie.	2
Wy5	Interpretacja sformułowań potrzeb informacyjnych planowanie procesu przetwarzania danych. Optymalizacja procesu przetwarzania tabel.	2
Wy6	Anomalie aktualizacji. Rozkład tabeli, rozkład schematu tabeli.	2
Wy7	Zależności funkcyjne między danymi w tabelach i ich rodzaje. Użycie zależności funkcyjnych w projektowaniu schematów relacyjnych baz danych	2
Wy8	Sprawdzian pisemny (P)	1
	Suma godzin	15

Forma zajęć – ćwiczenia		Liczba godzin
Ćw1		
Ćw2		
Ćw3		

	Suma godzin	0
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Forma zajęć – laboratorium		Liczba godzin
La1	Przykładowy system zarządzania relacyjną bazą danych i jego funkcje; tworzenie bazy danych; definiowanie struktury tabel bazy danych.	2
La2	Definiowanie właściwości danych, definiowanie kluczy podstawowych i dodatkowych. Weryfikacja funkcjonowania mechanizmów kontroli więzów integralności.	2
La3	Formularze, ich przeznaczenie, typy i struktura. Implementacja formularzy.	2
La4	Sprawdzian praktyczny przy komputerze (F1).	2
La5	Studium przypadku bazy danych firmy handlowej. Tabele i ich powiązania. Klucze podstawowe i klucze obce.	2
La6	Kwerendy wybierające i tworzące tabele. Definiowanie kwerend. Właściwości kwerend.	2
La7	Definiowanie procesów wybierania danych z jednej tabeli. Implementacja operacji projekcji i selekcji.	2
La8	Definiowanie procesów wybierania danych z wielu tabel. definiowanie kolumn wyliczanych, grupowanie, selekcja, agregacja danych, funkcje agregujące.	2
La9	Sprawdzian praktyczny przy komputerze (F2).	2
La10	Definiowanie procesów sumowania tabel. Kwerendy dołączające. Implementacja operacji sumy teoriomnogościowej.	2
La11	Definiowanie procesów znajdowania części wspólnej tabel. Implementacja operacji iloczyny tabel.	2
La12	Definiowanie procesów odejmowania tabel. Kwerendy usuwające. Implementacja operacji różnicy niesymetrycznej.	2
La13	Implementacja operacji dopełnienia. Raporty, ich przeznaczenie, typy i struktura. Implementacja raportów.	2
La14	Sprawdzian praktyczny przy komputerze (F3).	2
La15	Podsumowanie materiału. Zaliczenie.	2
	Suma godzin	30

Forma zajęć - projekt		Liczba godzin
Pr1		
Pr2		
Pr3		
	Suma godzin	0

Forma zajęć - seminarium		Liczba godzin
Se1		
Se2		
Se3		
	Suma godzin	0

STOSOWANE NARZĘDZIA DYDAKTYCZNE	
N1. Wykład informacyjno-problemowy	
N2. Prezentacja multimedialna	

- N3. Instrukcja laboratoryjna
 N4. Instruktaż podczas zajęć laboratoryjnych
 N5. Postawy i zachowania prowadzącego zajęcia
 N6. Stanowiska komputerowe umożliwiające pracę w środowisku MS Windows oraz MS Access
 N7. Sprawdzian praktyczny przy komputerze
 N8. Sprawdzian pisemny

OCENA OSIĄGNIĘCIA PRZEDMIOTOWYCH EFEKTÓW KSZTAŁCENIA

Oceny (F – formująca (w trakcie semestru), P – podsumowująca (na koniec semestru))	Numer efektu kształcenia	Sposób oceny osiągnięcia efektu kształcenia
F1	PEK_W01 PEK_U01	Sprawdzian praktyczny przy komputerze
F2	PEK_W02 PEK_W03 PEK_U01 PEK_U02	Sprawdzian praktyczny przy komputerze
F3	PEK_W02 PEK_W03 PEK_U01 PEK_U02	Sprawdzian praktyczny przy komputerze
P	PEK_W01 PEK_W02 PEK_W03 PEK_K01(częściowo) PEK_K02(częściowo)	Sprawdzian pisemny
F = 3; P = 1		

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA

LITERATURA PODSTAWOWA:

- [1] Jeffrey D. Ullman, Jennifer Widom. A first course in database systems. Upper Saddle River : Prentice Hall, 1997.
 [2] Witold Rekuć Laboratory instruction
 [3] Witold Rekuć Multimedia presentation

LITERATURA UZUPEŁNIAJĄCA:

- [4] C. J. Date. An introduction to database systems. Boston [etc.] : Pearson Addison Wesley, cop. 2004

OPIEKUN PRZEDMIOTU (IMIĘ, NAZWISKO, ADRES E-MAIL)

Witold Rekuć, witold.rekuc@pwr.wroc.pl

MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Data processing technology
Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU Zarządzanie
I SPECJALNOŚCI Organizational management

Przedmiotowy efekt kształcenia	Odniesienie przedmiotowego efektu do efektów kształcenia zdefiniowanych dla kierunku studiów i specjalności (o ile dotyczy)**	Cele przedmiotu***	Treści programowe***	Numer narzędzia dydaktycznego***
PEK_W01	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7	N1, N2, N8
PEK_W02	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7	N1, N2, N8
PEK_W03	K1_ZARZ_W24, K1_ZARZ_W25, K1_ZARZ_W26	C1, C2	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7	N1, N2, N8
PEK_U01	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2	La1, La2, La3, La5, La6, La7, La8, La10, La11, La12, La13	N3, N4, N6, N7
PEK_U02	K1_ZARZ_U12, K1_ZARZ_U15, K1_ZARZ_U16, K1_ZARZ_U17	C1, C2	La1, La2, La3, La5, La6, La7, La8, La10, La11, La12, La13	N3, N4, N6, N7
PEK_K01	K1_ZARZ_K01, K1_ZARZ_K02, K1_ZARZ_K04	C3	W związku z wszystkimi treściami programowymi	W związku z wszystkimi narzędziami dydaktycznymi
PEK_K02	K1_ZARZ_K05, K1_ZARZ_K07, K1_ZARZ_K08, K1_ZARZ_K09	C3	W związku z wszystkimi treściami programowymi	W związku z wszystkimi narzędziami dydaktycznymi

** - wpisać symbole kierunkowych/specjalnościowych efektów kształcenia

*** - z tabeli powyżej

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT	
SUBJECT CARD	
Name in Polish:	
Name in English:	Methods of MIS Environment Investigation
Main field of study (if applicable):	Management
Specialization (if applicable):	Organizational management
Level and form of studies:	1st level, full-time
Kind of subject:	obligatory
Subject code:	IEZ1209
Group of courses:	NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	30			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	1	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. General knowledge about the management essentials and organizational science.
2. General knowledge about the concept and application of information technology in management, the most commonly used office software tools and their application in management.

SUBJECT OBJECTIVES

- C1. To understand the relations between information system and the enterprise.
- C2. To understand the role of requirements analysis in project of information system.
- C3. To use different techniques of gathering and documenting information requirements.
- C4. To acquire social competences specific for analyzing the management information systems and identifying information requirements for such systems.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge, the students:

PEK_W01 – Know selected methods of organization information systems identification and

analysis.

PEK_W02 – Know selected methods of gathering the information requirements for planning computer systems for the organization.

Relating to skills, the students:

PEK_U01 – Can identify and analyze the needs of organization information systems users.

PEK_U02 – Know how to gather the information from users.

PEK_U02 – Know how to analyze the decisions and documents in the organization.

Relating to social competences, the students:

PEK_K01 – Can search for and choose professional methods to solve problems, take responsibility for their choices, communicate, persuade and defend their views related to the analysis of information systems.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Organization and its information system: Information system definition. Elements that determine information requirements of information systems users: organizational goals, problems and critical success factors identification.	2
Lec 2	Classification of computer systems . Information requirements analysis in project management.	2
Lec 3	Planning and conducting business interviewing/survey	2
Lec 4	Document analysis: identification method of information requirements.	2
Lec 5	Decision making processes as sources of dynamic (semi- or non-measurable) requirements.	2
Lec 6	Other techniques for gathering and analyzing information requirements: brainstorming, prototyping, interface analysis etc.	2
Lec 7	Information requirements engineering methodology: User and system analyst. Phases of requirements identification, analysis and documentation process, classification criteria of information requirements, validation and verification rules	2
Lec 8	Written test (P)	1
	Total hours	15
Form of classes - class		Number of hours
Cl 1	Information system environment (organization).	2
Cl 2	Information subsystems identification. Processes in the subsystems. Identification of problems with information flow.	2
Cl 3	Preparing information investigation plan for subsystem.	2
Cl 4	Planning business interviewing.	2
Cl 5	Planning survey.	2
Cl 6	Analysis of selected organizational documents.	2
Cl 7	Analysis of selected organizational decisions.	2
Cl 8	Reports evaluation.	1

	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
	Total hours	
TEACHING TOOLS USED		
N1. Lecture N2. Multimedia presentation N3. Attitude and behavior of the teacher N4. Group discussion during classes N5. Preparation of analysis report N6. Written test		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W01 PEK_W02	Written test
F1	PEK_W01 PEK_W02 PEK_U01 PEK_U02 PEK_U03 PEK_K01(partialy)	Evaluation of analysis report
F2	PEK_U01 PEK_U02 PEK_U03 PEK_K01(partialy)	Evaluation of the group discussion during classes
PL = P, PC=F1+F2 according to the scale		
PRIMARY AND SECONDARY LITERATURE		

PRIMARY LITERATURE:

1. Kendall, K.E., Kendall, J.E., Systems Analysis and Design, 7th ed., Prentice-Hall, 2009.
2. Powers M.J., Adams D.R., Mills H.D., Computer Information Systems Development: Analysis and Design, South-Western, 1984.
3. Robertson S., Robertson J., Mastering Requirements Process, 2nd ed., Addison-Wesley, Boston 2006.

SECONDARY LITERATURE:

1. Hickman L., Longman C., Business Interviewing, Addison-Wesley Publishing Co., 1994.
2. DeMarco T. et al., Adrenaline Junkies and Template Zombies, Dorset House, New York, 2008.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)**Ewa Pralat, ewa.pralat@pwr.wroc.pl**

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
 SUBJECT **Methods of MIS Environment Investigation**
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Organizational Management
 AND SPECIALIZATION**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives** *	Programme content***	Teaching tool number***
PEK_W01	S1_ZARZ_OM_W06	C1, C2	Lec 1, Lec 2	N1, N2, N3
PEK_W02	S1_ZARZ_OM_W06	C2, C3	Lec 3 - Lec 7	N1, N2, N3
PEK_U01	S1_ZARZ_OM_U05	C1 - C4	CI 2 - CI 7	N4
PEK_U02	S1_ZARZ_OM_U05	C1 - C4	CI 3 – CI 5	N4
PEK_U03	S1_ZARZ_OM_U05	C1 - C4	CI 6, CI 7	N4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY of Computer Science and Management SUBJECT CARD Name in Polish Modelowanie systemów informacyjnych zarządzania Name in English Management Information Systems Modeling Main field of study (if applicable): Management Specialization (if applicable): Organizational Management Level and form of studies: 1st level, full-time Kind of subject: optional Subject code IEZ1210W, IEZ1210C Group of courses NO					
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	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	30			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	1	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	0.5	0.5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge of the software user requirements analysis methods
2. Basic knowledge and skills of the computer using

SUBJECT OBJECTIVES

- C1 Getting knowledge about the methods and techniques of building models of management information systems in different functional areas of the organization.
- C2 Getting the skills to apply the right methods and techniques for computer-aided modeling of management information systems.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

- PEK_W01 - student has ordered knowledge of the methods and techniques of building functional models of systems management functions with the structural approach.
- PEK_W02 - student has ordered knowledge of the methods and techniques of building data models of information systems management at the structural approach.

relating to skills:

- PEK_U01 - student can create a models of simple computer systems to support management solutions to common problems and issues in the various functional areas of the organization.
- PEK_U02 - student can verify the built models.

relating to social competences:

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	Introduction. Repository.	2
Lec 2	Business function modeling -FHD.	2
Lec 3	Function dependency and events – FDD.	2
Lec 4	Basic rules and definitions for entities, relationships, attributes. Multiple and recursive relationship, generalization, aggregation.	2
Lec 5	Entity Relational Model – ERD. Classical structures and generic patterns (ERD).	1
Lec 6	Consistence and completeness of the structured model checking methods: F to E, DFD.	2
Lec 7	Rules of the Transformation from ERD to logical relational database design.	2
Lec 8	Test	2
	Total hours	15
Form of classes - class		Number of hours
Cl 1	Case study "...": business terms - repository.	2
Cl 2	The subject (functional) areas extraction. Decomposition and grouping functions (FHD). Checking of correctness and completeness of the model.	2
Cl 3	Analysis of the interdependencies between functions and the events – process model building (FDD). Checking of correctness and completeness of the model.	2
Cl 4	Analysis of information needs: an entity type identification. Analysis of the business relationship – definition and representation (ERD). Checking of correctness and completeness of the model.	2
Cl 5	Analysis of the movement of data between processes. Consistency verification of the functional and data models.	2
Cl 6	Using the basic technique of logical relational database design	2
Cl 7	Analysis of rules and details of business functions – the usage of an entity type by a function. Consistency verification of the functional and data models.	2
Cl 8	Assessment of the students	1
	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1		

Lab 2		
Lab 3		
Lab 4		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. Computer N2. projector N3. Ms PowerPoint, Ms Word, Ms Visio N4. blackboard or whiteboard		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	PEK_U01	Report
F2	PEK_U01, PEK_U02	Report
P1	PEK_W01, PEK_W02	Test
PLec = P1 PCI = F1+F2		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [[1] Barker R., CASE*Method – Entity Relationship Modelling, Addison-Wesley PC , 1989
[[2] Barker R., Longman C., CASE*Method – Function and Process Modelling, Addison-Wesley PC , 1989

SECONDARY LITERATURE:

- [[1] Gane C., Sarson T., Structured Systems Analysis - Tools and Techniques, Prentice-Hall, Englewood Cliffs, New Jersey, 1989

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Grażyna, Hołodnik-Janczura, grazyna.holodnik-janczura@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Management Information Systems Modeling
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management
AND SPECIALIZATION Business Information Systems**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	S1_ZARZ_OM_W06	C1	Lec1, Lec2, Lec3,Lec6	N1, N2, N3, N4
PEK_W02	S1_ZARZ_OM_W06	C1	Lec4, Lec 5, Lec6, Lec 7	N1, N2, N3, N4
PEK_U01 (skills)	S1_ZARZ_OM_U05	C2	CI 1, CI 2, CI 3, CI 4, CI 5, CI 6, CI 7	N4
PEK_U02	S1_ZARZ_OM_U05	C2	CI 7, CI7	N4
PEK_K01 (competences)				

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY of COMPUTER SCIENCE and MANAGEMENT

SUBJECT CARD**Name in Polish: Komunikacja w zarządzaniu****Name in English: Communication in management****Main field of study (if applicable): Management****Specialization (if applicable): Organizational Management****Level and form of studies: 1st, full-time****Kind of subject: optional****Subject code: PSZ1157S****Group of courses NO***

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)					30
Number of hours of total student workload (CNPS)					90
Form of crediting					Crediting with grade
For group of courses mark (X) final course					
Number of ECTS points					3
including number of ECTS points for practical (P) classes					3
including number of ECTS points for direct teacher-student contact (BK) classes					1

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

- 1.
- 2.
- 3.

SUBJECT OBJECTIVES

C1 To give the main ideas about communication in organization

C2 To show how assess the communication in organization

C3 To teach how to use the main assessing methods and interpret collected data

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 The student has a knowledge about communication in an organization

PEK_W02 The student knows how to assess the communication processes in an organizations

...

relating to skills:

PEK_U01 The student is able to construct and use the main assessing communication tools

like questionnaire, interview, follow-up interview and focus group interview

PEK_U02 The student can synthesize and interpret collected data

...

relating to social competences:

PEK_K01 The student can collaborate with his/her colleagues in the team

PEK_K02 The student is a strong critical thinker and he/she is able to evaluate critically his/her knowledge and professional skills

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1		
Lec 2		
Lec 3		
Lec 4		
Lec 5		
....		
	Total hours	
Form of classes - class		Number of hours
Cl 1		
Cl 2		
Cl 3		
Cl 4		
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
Lab 5		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours

Sem 1	Communication in the work organization	2
Sem 2	Characteristics of communication assessments	2
Sem 3	Initiating and planning assessments	2
Sem 4	Conducting team audits; initiation, planning and data collection phases, interpretation and final report	2
Sem 5	Choosing focal areas to assess	2
Sem 6	Content analysis as a method	2
Sem 7	The interview; the most basic assessment technology	2
Sem 8	The International Communication Association survey	2
Sem 9	Another data collection methods; Critical Communication Experience Survey and ECCO Analysis	2
Sem 10	Another data collection methods; focus group interviews	2
Sem 11	Examples of organization communication based on audit case studies – student presentations	2
Sem 12	Examples of organization communication based on audit case studies – student presentations	2
Sem 13	Examples of organization communication based on audit case studies – student presentations	2
Sem 14	Colloquium	2
Sem 15	Summary and final discussion	2
	Total hours	30

TEACHING TOOLS USED

N1. Multimedia displays (by teacher)
N2. Multimedia displays (by students)
N3. Discussions
N4. Teamwork

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1 Discussion during the seminar	PEK_W01, PEK_W02	Oral feedback
F2 Presentation of the homework during the seminar.	PEK_U01, PEK_U02	Oral feedback
F3 Prepared by the teams case study final presentations	PEK_K01, PEK_K02	Grade for presentation and oral feedback
C test		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Downs, C. W., Adrian, A. D. (2004) *Assessing Organizational Communication* New York, London: The Guilford Press

Hargie, O., Tourish, D. (ed) (2009) *Auditing Organizational Communication* London and New York: Routledge

[2] Downs, C. W., Adrian, A. D. (2004) *Assessing Organizational Communication* New York, London: The Guilford Press

[3]

[4]

SECONDARY LITERATURE:

[1] Syphner, B.,D. (ed) (1997) *Case Studies in Organizational Communication 2. Perspectives on Contemporary Work Life*
New York, London: The Guilford Press

[2]

[3]

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

wojciech.maluszynski@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Communication in management.....
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 ...Management.....
AND SPECIALIZATION ...Organizational Management.....

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)		C1, C2, C3	S1 – S13	N1, N2, N3, N4
PEK_W02		C1, C2, C3	S1 – S13	N1, N2, N3, N4
PEK_U01 (skills)		C1, C2, C3	S6, S7, S8, S9, S10	N1, N3
PEK_U02			S4, S6, S7, S8, S9, S10	N1, N3
PEK_K01 (competences)		C1, C2, C3	S11, S12, S13	N2, N3, N4
PEK_K02		C1, C2, C3		

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD**

Name in Polish:	Inżynieria finansowa
Name in English:	Financial engineering
Main field of study (if applicable):	Management (Zarządzanie)
Specialization (if applicable):	Organizational Management (OM)
Level and form of studies:	1st level, full-time
Kind of subject:	optional
Subject code:	FBZ1187
Group of courses:	NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	60	60			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	2	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Knowledge of financial markets and elementary probability and statistics.

SUBJECT OBJECTIVES

C1 To provide basic information about construction, valuation and the use of derivatives in the financial markets.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 Knows the basic debt instruments and their valuation methods.

PEK_W02 Knows portfolio theory.

PEK_W03 Knows the four basic classes of derivatives - forwards, futures, swaps and options.

PEK_W04 Knows option pricing methods – the binomial and Black-Scholes approaches.

Relating to skills:

PEK_U01 Can build a portfolio of debt instruments and measure its sensitivity.

PEK_U02 Can construct optimal portfolios from stocks and bonds.

PEK_U03 Can evaluate forwards, futures and swaps using the (no-)arbitrage approach.

PEK_U04 Can price options using binomial trees and the Black-Scholes method.

Relating to social competences:
 PEK_K01 Is aware of the need for an independent, critical assessment of the scope and level of his/her knowledge in the field of financial engineering. Is prepared for conducting self-studies in this area.
 PEK_K02 Can engage in a discussion and defend his/her views regarding the methods of financial engineering.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec1	Introduction; Investments and investors	2
Lec2	Financial markets, stock and futures exchanges	2
Lec3	Currencies, debt instruments, yield curve	4
Lec4	Capital market, portfolio theory	4
Lec5	Forwards, futures and swaps: applications and pricing	4
Lec6	Options; Portfolios of derivatives	4
Lec7	Binomial option pricing model: valuation and hedging strategy	4
Lec8	Black-Scholes model; Sensitivity analysis	4
Lec9	Final test	2
	Total hours	30

Form of classes - class		Number of hours
C11	Time value of money	2
C12	Debt instruments	2
C13	Portfolio theory	2
C14	Forwards, futures and swaps: applications and pricing	2
C15	Options; Portfolios of derivatives	2
C16	Binomial option pricing model: valuation and hedging strategy	3
C17	Black-Scholes model; Sensitivity analysis	2
	Total hours	15

TEACHING TOOLS USED

- N1. Multimedia lecture
- N2. Practical exercises
- N3. Discussion
- N4. Student's own work

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F –	Educational effect	Way of evaluating educational effect achievement
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forming (during semester), P – concluding (at semester end)	number	
F1	PEK_W01÷PEK_W04 PEK_U01÷PEK_U04	Class participation (participation in discussions and problem solving, preparation for class activities)
F2	PEK_W01÷PEK_W04 PEK_U01÷PEK_U04	Grade based on the final test
P (L) = ½ F1 + ½ F2 P (C) = ½ F1 + ½ F2		
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
[1] Z. Bodie, A. Kane, A.J. Marcus (2007) Essentials of Investments (6th ed.), McGraw-Hill [2] J. Hull (2008) Options, Futures and Other Derivatives (7th ed.), Prentice Hall [3] A. Weron, R. Weron (1998, ..., 2009) Inżynieria finansowa, WNT		
<u>SECONDARY LITERATURE:</u>		
[4] J. Czekaj, red., (2008) Rynki, instrumenty i instytucje finansowe, PWN [5] E.J. Elton, M.J. Gruber, S.J. Brown, W.N. Goetzmann (2002) Modern Portfolio Theory and Investment Analysis, Wiley [6] F.J. Fabozzi (2005) The Handbook of Fixed Income Securities", McGraw-Hill [7] J. Franke, W. Härdle, C. Hafner (2005) Introduction to Statistics of Financial Markets, Springer [8] K. Jajuga, T. Jajuga (1996, ..., 2007) Inwestycje, PWN [9] P. Wilmott (2000) Paul Wilmott on Quantitative Finance, Wiley, Chichester		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Dr hab. Rafał Weron, prof. PWr, rafal.weron@pwr.wroc.pl		

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Financial engineering (Inżynieria finansowa)
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Management (Zarządzanie)
AND SPECIALIZATION **Organizational Management (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W03, K1_ZARZ_W11, K1_ZARZ_W24, S1_ZARZ_OM_W08	C1	Lec1-3, CI1-2	N1-4
PEK_W02	K1_ZARZ_W03, K1_ZARZ_W24, S1_ZARZ_OM_W08	C1	Lec4, CI3	N1-4
PEK_W03	S1_ZARZ_OM_W08	C1	Lec5, CI4	N1-4
PEK_W04	K1_ZARZ_W24, S1_ZARZ_OM_W08	C1	Lec6-8, CI5-7	N1-4
PEK_U01 (skills)	K1_ZARZ_U05, S1_ZARZ_OM_U08	C1	Lec1-3, CI1-2	N2-4
PEK_U02	K1_ZARZ_U05, S1_ZARZ_OM_U08	C1	Lec4, CI3	N2-4
PEK_U03	K1_ZARZ_U015, S1_ZARZ_OM_U08	C1	Lec5, CI4	N2-4
PEK_U04	K1_ZARZ_U05, S1_ZARZ_OM_U08	C1	Lec6-8, CI5-7	N2-4
PEK_K01 (competences)	K1_ZARZ_K01	C1	CI1-7	N2-4
PEK_K02	K1_ZARZ_K08	C1	CI1-7	N2-4

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

FACULTY OF INFORMATICS AND MANAGEMENT					
SUBJECT CARD					
Name in Polish STRUKTURY RYNKU I ICH REGULACJE					
Name in English MARKET STRUCTURE AND THEIR REGULATIONS					
Main field of study (if applicable): Management					
Specialization (if applicable): Organizational Management (OM)					
Level and form of studies: 1st level, full-time					
Kind of subject: optional					
Subject code EKZ1166W, EKZ1166C					
Group of courses NO					

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30	15			
Number of hours of total student workload (CNPS)	60	60			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	2	2			
including number of ECTS points for practical (P) classes		2			
including number of ECTS points for direct teacher-student contact (BK) classes	1	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Student knows basic definitions, economic laws and relations in microeconomics.
2. Student knows basic market structures and their characteristics and can identify them.

SUBJECT OBJECTIVES

- C1 – The objective of the subject is presenting solid (reliable) backgrounds to understand problem related to decisions making by firms at different competitive markets.
- C2 - The objective of the subject is systematic description of action and presenting connections and relations between market structure and market regulation made by government or EU.
- C3 – The objective of the subject is to get known definitions connected with microeconomics, regulations and decision making in foreign language, and possessing ability of using correct words during problematic discussion.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK W1 – Student knows and can explain basic definitions, economic laws and relations in micro and macroeconomics. Student knows economic and law regulations related to national economy, economy of European Union and global economy.

PEK W2 – Student knows regulation theories in context of different government functions in economy.

PEK W3 – Student knows assumptions and causes, different tools and effects of economics and law regulations at microeconomics and macroeconomics level, in relation to particular markets and firms.

PEK W4 – Student has knowledge about potential structural change in companies, integration groups (such as EU) and on the market as a result of initiation of new regulation.

relating to skills:

PEK U1 – Student can define and analyze effects of incoming economics and law regulations at national and international level for particular organizations, markets and integration groups, such as EU.

PEK U2 – Student can formulate alternative solutions of typical management problems and formulate own opinions, based on chosen information sources, related to economic incidents and phenomena which influence on management decisions.

PEK U3 - K1-ZARZ_U15

PEK U4 - K1-ZARZ_U16

PEK U5 - K1_ZARZ_U17

relating to social competences:

PEK K1 - K1_ZARZ_K01

PEK K2 - K1_ZARZ_K02

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Market structure: basic market structures- perfectly competitive, monopolistic competition, oligopoly, monopoly, main elements of market structures, market structures of suppliers and market structures of sellers, factors of market concentration, characteristics of the product and market structure, conditions of entrance on the market and conditions of existence on the market	6
Lec 2	Regulation and public goods – backgrounds of theory	2
Lec 3	Regulation of monopoly: natural monopoly and government monopoly, withdrawal from monopoly, regulation of monopoly and organization of regulations	2
Lec 4	Regulation of companies actions on oligopoly market: rules of regulations, regulations instruments (tools)	2
Lec 5	Partial test Regulation of selected markets: telecommunication or IT services, electricity market, gas or heat market	1 1
Lec 6	Costs in company: the rules of costs measurement, different kinds of costs, relations between costs, economy of scale and the costs, examples of economies and diseconomies of scale	2
Lec 7	Pricing on the market: prices and the market structure, firms' selections and the prices, price differentiation, integration of firms and pricing, monopoly and	2

	prices	
Lec 8	Strategic selections of companies: companies expansion ways – integration and disintegration processes in companies, vertical and horizontal integration, diversification of activities, internationalization	2
Lec 9	Government policy for fusion of companies: objectives and rules of antitrust policy, interpretation of antitrust policy, the processes taking place in Poland and their characteristics, examples of antitrust government policy	2
Lec 10	Research and development in the area of production technology and product improvement: market structure and techniques development, selections in companies against product development and implementation of new techniques, expansion strategies and research and development	2
Lec 11	International trade, market structure and firm strategies: Determinants of international business turnover, foreign direct investments, functioning of national markets and international trade	2
Lec 12	Policy of national economy: fiscal and money Policy and market structure change, infrastructural policy, regional policy	2
Lec 13	Final test	2
	Total hours	30
Form of classes - class		Number of hours
CI 1	Analysis of economics problems related to regulation of selected markets – problematic discussion	6
CI 2	Papers prepared by students - writing form and oral presentation of the papers (multimedia presentation)	8
CI 3	Problematic discussion – Conclusion of analyzed regulations	1
	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
Lab 4		
...		
	Total hours	
Form of classes - project		Number of hours
Proj 1		
Proj 2		
Proj 3		
Proj 4		
...		
	Total hours	
Form of classes - seminar		Number of hours

Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	

TEACHING TOOLS USED

Lecture:
 N1 – information lecture,
 N2 – multimedia presentation,
 N3 – problematic lecture.
 Class:
 N4 – analysis of selected problems, problematic discussion,
 N5 - papers – oral presentation (eg. using Powerpoint), and writing form

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
F1	W1, W2, W4, U4, U5	partial test
F2	W3, W4, U16, U5	final test
F3	U1, U2, U16, U5	activity during classes, taking part in problematic discussion
F4	U1, U2, U3, U4	writing form of the paper
F5	U1, U2, U3, U5	oral presentation of the paper

Lecture: $P = 0,5 \cdot F1 + 0,5 \cdot F2$

Class: $P = 0,2 \cdot F3 + 0,4 \cdot F4 + 0,4 \cdot F5$

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Trefor Jones, *Business Economics and Managerial Decision Making*, John Wiley&Sons, 2004
- [2] Samuelson Paul A., *Economics*, McGraw-Hill Book Company, New York, 1985
- [3] Webster Thomas J., *Managerial economics: theory and practice*, Academic Press, Amsterdam, 2003
- [4] Sloman John, Wride Alison, *Economics*, FT Prentice Hall, Harlow, 2009 or older one

SECONDARY LITERATURE:

- [1] David Begg, Stanley Fischer, Rudiger Dornbusch, *Economics*, McGraw-Hill, London, 1994
- [2] Samuelson, Paul Anthony, *Macroeconomics: a version of Economics*, McGraw-Hill, New York, 1989
- [3] Henderson D. R., *The Fortune Encyclopedia of Economics*, Warner Books, New York, 1993

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Magdalena Węglarz, magdalena.weglarz@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
MARKET STRUCTURE AND THEIR REGULATIONS
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY MANAGEMENT
AND SPECIALIZATION **Organizational Management (OM)**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK W1	K1_ZARZ_W03	C1, C3	Wy1, Wy2, Wy12, Cw1	N1, N2, N4
PEK W2	K1_ZARZ_W03	C1, C2, C3	Wy2 ÷ Wy5	N1, N2, N3
PEK W3	K1_ZARZ_W04, K1_ZARZ_W06	C1, C2, C3	Wy6 ÷ Wy12, Cw1, Cw2	N1, N2, N3, N4, N5
PEK W4	K1_ZARZ_W06, K1_ZARZ_W08	C1, C2, C3	Wy1 ÷ Wy12, Cw1 ÷ Cw3	N1, N2, N3, N4, N5
PEK U1	K1_ZARZ_U03	C1, C2, C3	Cw1 ÷ Cw3	N4, N5
PEK U2	K1_ZARZ_U04, K1_ZARZ_U07	C1, C2, C3	Cw1 ÷ Cw3	N4, N5
PEK U3	K1_ZARZ_U15	C1, C2, C3	Cw1 ÷ Cw3	N4, N5
PEK U4	K1-ZARZ_U16	C1, C2, C3	Wy1 ÷ Wy12, Cw1 ÷ Cw3	N1, N2, N3, N4, N5
PEK U5	K1-ZARZ_U17	C1, C2, C3	Cw1 ÷ Cw3	N4, N5
PEK K1	K1_ZARZ_K01	C1, C2, C3	Cw1 ÷ Cw3	N4, N5
PEK K2	K1_ZARZ_K02	C1, C2, C3	Cw1 ÷ Cw3	N4, N5

** - enter symbols for main-field-of-study/specialization educational effects

*** - from table above

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish Podstawy prawa****Name in English Law Essentials.****Main field of study (if applicable): Management****Specialization (if applicable): ORGANIZATIONAL MANAGEMENT (OM)****Level and form of studies: 1st level, full-time****Kind of subject: optional****Subject code PRZ1156W PRZ1156Ć****Group of courses NO***

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	30			
Form of crediting	crediting with grade	crediting with grade			
For group of courses mark (X) final course					
Number of ECTS points	1	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. General knowledge of the law

SUBJECT OBJECTIVES

C1 The object is to provide basic knowledge of the law

C2 In the course courses explains the basic concepts for the structure and functioning of the system of law in the count

C3 In detail discusses the selected areas of law which form the basis of corporate social and economic

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01

-The know and understand basic concepts and principles for the protection of industrial Property and copyright

relating to skills:

PEK_U01

-Can initiate an economic activity, chosen form organizational-legal, organizational shall draw up its objectives and shall draw up measures aimed at achieving their smooth relating to social

relating to social competences:

PEK_K01

-Is aware of the need to develop their professional knowledge and skills in the sciences of the organization and management. It can on its own develop the knowledge and improve skills

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	State and the right	1
Lec 2	The Constitution and the right	1
Lec 3	The administration and the right administrative	1
Lec 4	Criminal Law and criminal proceedings	1
Lec 5	Civil law	1
Lec 6	Labour law	1
Lec 7	Right in the economy	1
Lec 8	The European Union-institutions and the right	1
Lec 9	The European Union as an international organization	1
Lec 10	The basic features of the rights of the European Communities	1
Lec 11	The primary source of Community law and derivatives	1
Lec 12	The nature and importance of the harmonisation of laws in member countries of the European Union	1
Lec 13	General characteristics of international law	1
Lec14	The importance of international law standards in trade relations and economic	1
Lec15	Prospects for development of international law	1
Total hours		15

Form of classes - class		Number of hours
C11	Legal subjectivity of provisions of law being applicable in a light	2
C12	Protection of personal rights - freedom of the individual in the light of provisions of the law	2
C13	Privacy rights and freedoms in the law of the European Union	2
C14	Law and order, civil liberties, state of law	2
C15	Protection work in the light of the labour code	2
C16	Domestic and European law of agreements - resemblances and differences	3
C17	Protection of the economic freedom and the fair competition in activity of business entities	2

	Total hours	15
Form of classes – Project		Number of hours
Proj 1		
Proj 2		
Proj 3		
	Total hours	
Form of classes – seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
	Total hours	
TEACHING TOOLS USED		
N1. lecture by information N2. multimedia presentation N3. lecture by have problem		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W04	written examination
P=1		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Frankowski S., *Introduction to the Polish Law*, Wyd. Kluwer Law International, Warszawa 2005
[2] Kienkowska D. (Ed.), *The Polish Law Collection. Business Law*, Warszawa 2004
[3] Lewandowski P., *Angielski od podstaw – Prawo*, Wyd. Led, warszawa 2012
[4] Gil I., Marszałkowska-Krześ E., *Code of civil procedure*, Wyd. Wolters Kluwer Warszawa 2011
[5] *”Handbook of Polish Law”*, Wyd. szkolne PWN Warszawa 2011

SECONDARY LITERATURE:

- [1] *Kodeks cywilny Civil Code – wydanie dwujęzyczne*, Wyd. Wolters Kluwer warszawa 2011
[2] Wolter A. i in., *Prawo cywilne, zarys części ogólnej*, warszawa 2002
[3] Rossini C., *English as a legal Language*, London 1998
[4] Lewandowski J., *Prawo cywilne*, Warszawa 2000

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Law Essentials

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish: Prawo międzynarodowe****Name in English: International law****Main field of study (if applicable): Management****Specialization (if applicable): ORGANIZATIONAL MANAGEMENT (OM)****Level and form of studies: 1st level, full-time****Kind of subject: / optional****Subject code: PRZ1155W PRZ1155Ć****Group of courses NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15	15			
Number of hours of total student workload (CNPS)	30	30			
Form of crediting	Charging for the assessment	Charging for the assessment			
For group of courses mark (X) final course					
Number of ECTS points	1	1			
including number of ECTS points for practical (P) classes		1			
including number of ECTS points for direct teacher-student contact (BK) classes	0,5	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. General orientation regarding the validity of the laws and their importance for the functioning of the State and the economy

SUBJECT OBJECTIVES

C1. The acquisition of basic knowledge in the field of International Law

C2. Conquest of ability of awareness and, in sphere of international law interpretation norms obligatory

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01

- it knows and it explains essence of modern change in marketing strategies and problems and challenges with development of (evolution of) information society valid , development of (evolution of) new communication technology and appearance new kind of consumer (proconsumers)

relating to skills:

PEK_U01

- it can identify, interpret and assess developments of our civilization, technological and cultural changes in organization and its surroundings and seize acquired knowledge to solving the problems of management and marketing in the organization

relating to social competences:

PEK_K01

–In the sciences of the organization and management. It can on its own develop the knowledge and improve skills.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	International law and its sources. The rules in modern international relation	1
Lec 2	The processes and structure of the international	1
Lec 3	International agreements and their relevance for international integration processes and of globalization	1
Lec 4	Legal ownership of international organization	1
Lec 5	Sources and principles of the international protection of human rights	1
Lec6	Civil law and commercial international trading	1
Lec7	Privacy economic freedom in international law	1
Lec8	The status of business organizations in the rules of international law	1
Lec9	Protection of intellectual property rights in international law	1
Lec10	Taxonomy international convention protecting industrial property	1
Lec11	International procedures to protect intellectual property rights	1
Lec12	Legal foundations of international marketing	1
Lec13	Protection of consumers in international law	1
Lec14	International standards for the protection and safety of products	1
Lec15	Responsibility and settlement of disputes in international law	1
Total hours		15
Form of classes - class		Number of hours
Cl1	Taxonomy and review international trade agreements	2
Cl2	The contract of sale in international law	2
Cl3	International standards contracts	2
Cl4	The contractual liability in international law	2
Cl5	International standards for the protection free competition	2
Cl6	The legal bases for international cooperation in trade	2

CI7	Prospects for development of international law	3
	Total hours	15
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. lecture by information N2. multimedia presentation N3. lecture by have problem		

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

Evaluation (F – forming (during semester), P – concluding (at semester end))	Educational effect number	Way of evaluating educational effect achievement
P	PEK_W03	written test
P=1		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] “*Polish Yearbook of International Law*, Wydawnictwo Instytutu nauk Prawnych Warszawa 2010.
- [2] I. Brownlie, *Principles of Public International Law*, (OUP 2008).
- [3] I. Sломanson, W. William, *Fundamental Perspectives on Internationa Law*, Boston 2011.
- [4] The Free Dictionary Definition of Human Rights”, The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009.. Retrieved 13 September 2011.
- [5] R. Filipek, *Protection of Human Rights in the EU – Meeting the Standards of a European Human Rights System?*, A. Bodnar et al. (red.) The Emerging Constitutional Law of the European Union. German and Polish Perspectives, Heidelberg 2003,

SECONDARY LITERATURE:

- [1] L. Antonowicz, *Podręcznik prawa międzynarodowego*, Wydawnictwo LexisNexis Warszawa 2003.
- [2] W. Czaplński, A. Wyrozumska, *Prawo międzynarodowe publiczne*, Warszawa 2010.
- [3] „*Przegląd prawa europejskiego i międzynarodowego*” , Wydawnictwo Wolters Kluwer Polska – ABC, Warszawa 2011.
- [4]A. Przyborowska-Klimczak, D. Pyć, *Leksykon prawa międzynarodowego publicznego*, Wydawnictwo C.H. Beck Warszawa 2012
- [5] J. Ciszewski, *Obrót prawny z zagranicą w sprawach cywilnych i karnych*, Wydawnictwo LexisNexis Warszawa 2012.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
International law
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Management..
AND SPECIALIZATION ORGANIZATIONAL MANAGEMENT (OM).**

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01 (knowledge)	K1_ZARZ_W03 K1_ZARZ_W21 K1_ZARZ_W04	C1 C2	Lec1, Lec2, Lec3, Lec4, Lec5, Lec6, Lec7 Lec8 Lec9 Lec10 Lec11 Lec12 Lec13 Lec14 Lec15 C11 C12 C13 C14C15 C16 C17	N1, N2, N3 N2
PEK_U01 (skills)	K1_ZARZ_U15 K1_ZARZ_U16 K1_ZARZ_U17 K1_ZARZ_U06	C1 C2	Lec5 Lec6 Lec7 Lec9 Lec10 Lec11 Lec12 Lec13 Lec14 C13 C14 C15 C16	N1, N2, N3 N2
PEK_K01 (competences)	K1_ZARZ_K01 K1_ZARZ_K04 K1_ZARZ_K05 K1_ZARZ_K09	C1 C2	Lec1 Lec3 Le3 C14 C15 C16	N1, N2, N3 N2