

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):** **Business information systems (BIS)****Level and form of studies:** **2nd level, full-time****Kind of subject:** **obligatory****Subject code** **EKZ1206****Group of courses** **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of classes organized by the University (ZZU)	15	15			
The total number of hours of student workload (CNPS)	90	60			
Form of crediting	Examination	credit with a grade			
For a group of courses final course mark (X)					
Number of points ECTS	3	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)	1,5	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
1	Modern economic school of macroeconomics, neoclassical school, mainstream Keynesian, monetarist, supply economics, current institutional.	2
2	The role of the state in a market economy	1
3	Two paradigms in macroeconomics. Model of aggregate demand and aggregate supply	2
4	Development and economic growth. Measurement of economic growth and development	1
5	Fluctuations in the market economy. counter-cyclical policy	2
6	The monetary - credit	2
7	State budget fiscal policy	1
8	Unemployment	1
9	Inflation	1
10	International Trade	1
11	Balance of payments and exchange rates	1
Total hours		15

Type of course - classes		Number of hours
1	The concept and the basic problems of macroeconomics	2
2	Creation and distribution of national income and its calculation	2
3	Cycle. counter-cyclical policy	2
4	The monetary - credit. The essence, the policy tools	2
5	Budget - fiscal policy	2

6	Inflation and unemployment	2
7	International trade. Balance of payments. exchange rates	2
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 PEK U02	Practical exercises test
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. Almamere, 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 **Business information systems 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)	K2_ZARZ_W01 K2_Zarz_W02	C1	Wy1÷Wy11	N1, N2, N3
PEK_W02	K2_ZARZ_W02 K2_ZARZ_W03	C2, C3	Wy1÷Wy11	N1, N2, N3,
PEK_U01 (knowledge)	K2_ZARZ_W01 K2_Zarz_W02 K2_Zarz_U01 K2_ZARZ_U02 K2_Zarz_U03	C1 C2	Wy1, Wy3÷Wy11 Ćw3÷Ćw7	N2, N3, N4, N5
PEK_U02	K2_Zarz_W02 K2_ZARZ_W03 K1_Zarz_U03	C3	Wy1, Wy2, Wy5÷Wy11	N3,N4
PEK_K01 (competence)	K2_Zarz_K01 K2_Zarz_K08	C3	Wy1÷Wy11 Ćw1÷Ćw7	N1, N3, N4, N5

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

*** - from the table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish** Rachunkowość zarządcza**Name in English** Management Accounting**Main field of study (if applicable):** Management**Specialization (if applicable):** Business Information Systems**Level and form of studies:** 2nd level, full-time**Kind of subject:** obligatory**Subject code** FBZ1201**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. basic information on accounting system
2. basics of financial statements (balance sheet, income statement, cash flow statement)
3. basics of finance management (cost of capital, time value of money, NPV method)
4. practical use of spreadsheet (Excel)

SUBJECT OBJECTIVES

C1 to provide an overview of how management accounting information supports decision-making process regarding traditional and modern management strategies

C2 to provide a managerial emphasis stressing value creation over accounting techniques

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows the difference between management and financial accounting

PEK_W02 Knows the meaning of costs, costs behavior, and how costs are assigned to product and services

PEK_W03 Knows the C-V-P Analysis and ABC Method

PEK_W04 Knows the way accounting is used for planning and control

relating to skills:

PEK_U01 Has ability to define and describe fixed and variable costs

PEK_U02 Can determine the break-even point, explain the impact of risk, uncertainty, and

changing variables on cost-volume-profit analysis
 PEK_U03 Is able to prepare operating budget and flexible budget for a small business, and capital budget for a simple project

relating to social competences:
 PEK_K01 Is able to predict potential results of a decision
 PEK_K02 Is able to identify costs relevant for a decision

PROGRAMME CONTENT

Form of classes – lecture		Number of hours
Lec 1	<i>Introduction to Cost Behavior and Cost-Volume. Relationships Measurement of Cost Behavior</i>	2
Lec 2	<i>Cost Management Systems and Activity Based Costing</i>	2
Lec 3	<i>Accounting for Planning and Control: The Master Budget</i>	2
Lec 4	<i>Accounting for Planning and Control: Flexible Budgets and Variance Analysis. Management Control Systems and Responsibility Accounting</i>	2
Lec 5	<i>Capital Budgeting</i>	2
Lec 6	<i>Product Costing: Cost Allocation</i>	2
Lec 7	<i>Product Costing: Job-Costing Systems, Process-Costing Systems. Overhead Application: Variable and Absorbtion Costing</i>	2
Lec 8	<i>Final test</i>	1
	Total hours	15
Form of classes – class		Number of hours
Cl 1	<i>Introduction: fianancial vs managerial accounting</i>	1
Cl 2	<i>Cost behavior models</i>	2
Cl 3	<i>Cost-Volume-Profit Analysis</i>	2
Cl 4	<i>Break-even Point Analysis for one and many products</i>	2
Cl 5	<i>Traditional vs Activity Based Costing - case study</i>	2
Cl 6	<i>How to prepare Master Budget for a Trading Company - case study</i>	2
Cl 7	<i>Cost of Capital and Capital Budgeting for Manufacturing Company</i>	2
Cl 8	<i>How much the product costs – cost calculation using spreadsheet</i>	2
	Total hours	15

TEACHING TOOLS USED

- N1. lecture
- N2. multimedia presentation
- N3. case studies

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_W02 PEK_W03 PEK-U01 PEK_U02	series of homeworks (problems to solve) – done correctly and on time
F2	PEK_W04 PEK_U03	series of homeworks (problems and cases to solve) - done correctly and on time
C class attendance and final test (multiple choice) score min 50%		
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
<p>[1] PowerPoint presentation handouts available on instructors web page</p> <p>[2] Zofia Krokosz-Krynke, Management Accounting Exercises. <i>download from</i> http://www.studia.pwr.wroc.pl/materialy/433/business_information_systems.html</p> <p>[3] Horngren Ch.T., Sundem G.L., Stratton W.O., Introduction to Management Accounting. Prentice Hall, 2002</p>		
<u>SECONDARY LITERATURE:</u>		
<p>[1] Atkinson A.A., Banker R.D., Kaplan R.S., Young S.M., Management Accounting. Prentice Hall, 1995</p> <p>[2] Burch J.G., Cost and Management Accounting. A Modern Approach. West Publishing Co. 2001</p> <p>[3] Garrison R.H. , Noreen E.W., Managerial Accounting, IRWIN, 1994</p> <p>[4] Horngren Ch.T., Foster G., Datar S.M., Cost Accounting. A Managerial Emphasis. Prentice-Hall, 1994</p> <p>[5] Ostwald P.F., Cost Estimating. Prentice-Hall, 1984</p>		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
Zofia Krokosz-Krynke, zofia.krokosz-krynke@pwr.wroc.pl		

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Management Accounting
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)	K2_ZARZ_W06	C1	Lec 1, Cl 1	N1, N2
PEK_W02	K2_ZARZ_W08 S2_BIS_W02	C2	Lec 2, Cl 2	N1, N2
PEK_W03	K2_ZARZ_W08 S2_BIS_W02	C2	Lec 3, Cl 3, Cl 4, Cl 5	N1, N2, N3
PEK_W04	K2_ZARZ_W08 K2_ZARZ_W11	C2	Lec 4, Lec 5, Lec 6, Lec 7, Cl 6, Cl 7, Cl 8	N1, N2, N3
PEK_U01 (skills)	K2_ZARZ_U06, K2_ZARZ_U15, K2_ZARZ_U16, S2_BIS_U02	C1, C2	Lec 1, Lec 2, Lec 6, Lec 7, Cl 2, Cl 8	N1, N2, N3
PEK_U02	K2_ZARZ_U11, K2_ZARZ_U14, K2_ZARZ_U15, K2_ZARZ_U16	C2	Lec 2, Cl 3, Cl 4, Cl 5	N1, N2, N3
PEK_U03	K2_ZARZ_U11, K2_ZARZ_U14, K2_ZARZ_U15, K2_ZARZ_U16	C2	Lec 3, Lec 4, Lec 5, Cl 6, Cl 7	N1, N2, N3
PEK_K01 (competences)	K2_ZARZ_K04	C2	Lec 1, Lec 2, Lec 3, Lec 4, Cl 3, Cl 4, Cl 6	N1, N2, N3
PEK_K02	K2_ZARZ_K04	C2	Lec 5, Lec 6, Lec 7, Cl 2, Cl 5, Cl 6, Cl 7, Cl 8	N1, N2, N3

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

*** - from table above

WYDZIAŁ INFORMATYKI I ZARZĄDZANIA**KARTA PRZEDMIOTU**

Nazwa w języku polskim Rachunkowość zarządcza
Nazwa w języku angielskim Management Accounting
Kierunek studiów (jeśli dotyczy): Management
Specjalność (jeśli dotyczy): Business Information Systems
Stopień studiów i forma: II stopień*, stacjonarna
Rodzaj przedmiotu: obowiązkowy
Kod przedmiotu FBZ1201
Grupa kursów NIE

	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium
Liczba godzin zajęć zorganizowanych w Uczelni (ZZU)	15	15			
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	0,5			

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. basic information on accounting system
2. basics of financial statements (balance sheet, income statement, cash flow statement)
3. basics of finance management (cost of capital, time value of money, NPV method)
4. practical use of spreadsheet (Excell)

CELE PRZEDMIOTU

C1 to provide an overview of how management accounting information supports decision-making process regarding traditional and modern management strategies
 C2 to provide a managerial emphasis stressing value creation over accounting techniques

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01 Knows the difference between management and financial accounting

PEK_W02 Knows the meaning of costs, costs behavior, and how costs are assigned to product and services

PEK_W03 Knows the C-V-P Analysis and ABC Method

PEK_W04 Knows the way accounting is used for planning and control

Z zakresu umiejętności:

PEK_U01 Has ability to define and describe fixed and variable costs

PEK_U02 Can determine the break-even point, explain the impact of risk, uncertainty, and changing variables on cost-volume-profit analysis

PEK_U03 Is able to prepare operating budget and flexible budget for a small business, and capital budget for a simple project

Z zakresu kompetencji społecznych:

PEK_K01 Is able to predict potential results of a decision

PEK_K02 Is able to identify costs relevant for a decision

TREŚCI PROGRAMOWE

Forma zajęć – wykład		Liczba godzin
Wy1	<i>Introduction to Cost Behavior and Cost-Volume. Relationships Measurement of Cost Behavior</i>	2
Wy2	<i>Cost Management Systems and Activity Based Costing</i>	2
Wy3	<i>Accounting for Planning and Control: The Master Budget</i>	2
Wy4	<i>Accounting for Planning and Control: Flexible Budgets and Variance Analysis. Management Control Systems and Responsibility Accounting</i>	2
Wy5	<i>Capital Budgeting</i>	2
Wy6	<i>Product Costing: Cost Allocation</i>	2
Wy7	<i>Product Costing: Job-Costing Systems, Process-Costing Systems. Overhead Application: Variable and Absorption Costing</i>	2
Wy8	<i>Final test</i>	1
	Suma godzin	15

Forma zajęć – ćwiczenia		Liczba godzin
Ćw1	<i>Introduction: financial vs managerial accounting</i>	1
Ćw2	<i>Cost behavior models</i>	2
Ćw3	<i>Cost-Volume-Profit Analysis</i>	2
Ćw4	<i>Break-even Point Analysis for one and many products</i>	2
Ćw5	<i>Traditional vs Activity Based Costing - case study</i>	2
Ćw6	<i>How to prepare Master Budget for a Trading Company - case study</i>	2
Ćw7	<i>Cost of Capital and Capital Budgeting for Manufacturing Company – case study</i>	2
Ćw8	<i>How much the product costs – cost calculation using spreadsheet</i>	2
	Suma godzin	15

STOSOWANE NARZĘDZIA DYDAKTYCZNE

- N1. wykład problemowy
- N2. prezentacja multimedialna
- N3. studia przypadków (case studies)

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_W02 PEK_W03 PEK_U01 PEK_U02	series of homeworks (problems to solve) – done correctly and on time
F2	PEK_W04 PEK_U03	series of homeworks (problems and cases to solve)- done correctly and on time
P – class attendance and final test (multiple choice) score min 50%		

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA

LITERATURA PODSTAWOWA:

- [1] PowerPoint presentation handouts available on instructors web page
- [2] Zofia Krokosz-Krynke, Management Accounting_ Exercises. *download from* http://www.studia.pwr.wroc.pl/materialy/433/business_information_systems.html
- [3] Horngren Ch.T., Sundem G.L., Stratton W.O., Introduction to Management Accounting. Prentice Hall, 2002

LITERATURA UZUPEŁNIAJĄCA:

- [1] Atkinson A.A., Banker R.D., Kaplan R.S., Young S.M., Management Accounting. Prentice Hall, 1995
- [2] Burch J.G., Cost and Management Accounting. A Modern Approach. West Publishing Co. 2001
- [3] Garrison R.H. , Noreen E.W., Managerial Accounting, IRWIN, 1994
- [4] Horngren Ch.T., Foster G., Datar S.M., Cost Accounting. A Managerial Emphasis. Prentice-Hall, 1994
- [5] Ostwald P.F., Cost Estimating. Prentice-Hall, 1984

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

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MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Management Accounting
Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU Management
I SPECJALNOŚCI Business Information Systems

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)	K2_ZARZ_W06	C1	Wy1, Ćw1	N1, N2
PEK_W02	K2_ZARZ_W08 S2_BIS_W02	C2	Wy2, Ćw2	N1, N2
PEK_W03	K2_ZARZ_W08 S2_BIS_W02	C2	Wy3, Ćw3, Ćw4, Ćw5	N1, N2, N3
PEK_W04	K2_ZARZ_W08 K2_ZARZ_W11	C2	Wy4, Wy5, Wy6, Wy7, Ćw6, Ćw7, Ćw8	N1, N2, N3
PEK_U01 (umiejętności)	K2_ZARZ_U06, K2_ZARZ_U15, K2_ZARZ_U16, S2_BIS_U02	C1, C2	Wy1, Wy2, Wy6, Wy7, Ćw2, Ćw8	N1, N2, N3
PEK_U02	K2_ZARZ_U11, K2_ZARZ_U14, K2_ZARZ_U15, K2_ZARZ_U16	C2	Wy2, Ćw3, Ćw4, Ćw5	N1, N2, N3
PEK_U03	K2_ZARZ_U11, K2_ZARZ_U14, K2_ZARZ_U15, K2_ZARZ_U16	C2	Wy3, Wy4, Wy5, Ćw6, Ćw7	N1, N2, N3
PEK_K01 (kompetencje)	K2_ZARZ_K04	C2	Wy1, Wy2, Wy3, Wy4, Ćw3, Ćw4, Ćw6	N1, N2, N3
PEK_K02	K2_ZARZ_K04	C2	Wy5, Wy6, Wy7, Ćw2, Ćw5, Ćw6, Ćw7, Ćw8	N1, N2, N3

** - wpisać symbole kierunkowych/specjalnościowych efektów kształcenia

*** - z tabeli powyżej

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

Name in Polish Analiza systemów informacyjnych
Name in English Information Systems Analysis
Main field of study (if applicable): Management
Specialization (if applicable): Business Information System (BIS)
Level and form of studies: 2nd, level,
Kind of subject: obligatory
Subject code IEZ1201W
Group of courses NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
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	0,5				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. No prerequisites

This is the initial systems unit and it introduces students to the fundamental concepts and terminology used in information systems analysis and design by examining procedures, systems, the components of information systems, common business information systems, types of information systems, and organizational levels.

SUBJECT OBJECTIVES

- C1 Provide an organizational context and background for the information system;
- C2 Introduce general information systems analysis concepts and principles for information requirements gathering and specification process.
- C3 Asses alternative approaches to developing information systems and information strategies for a business organization.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows and understands the business context of information system.

PEK_W02 Knows a typical information Systems Development Life Cycle (SDLC) and principles of information strategy planning.

PEK_W02 Knows the principles, terminology and techniques associated with information systems analysis – especially with information requirements identification.

relating to skills:

relating to social competences:

PEK_K01 Capable 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 information system development projects from a stakeholder/analyst point of view.

PEK_K02. Capable to effectively communicate ideas of information systems analysis during information requirements gathering and specification process.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to information systems – general systems theory and business context. Components of information system.	2
Lec 2	Information Systems Development Life Cycles (SDLC) models.	2
Lec 3	Analysts and stakeholders perspectives of information system analysis	2
Lec 4	Information system architecture.	2
Lec 5	Methods and techniques for information requirements gathering.	2
Lec 6	Information requirements analysis and specification process.	2
Lec 7	Information strategy planning.	2
Lec 8	Acceptance written test.	1
	Total hours	15
Form of classes - class		Number of hours
CI 1		
CI 2		
CI 3		
CI 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. Lecture		
N2. Multimedia presentation		
N3. 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	<i>PEK_W01</i> <i>PEK_W02</i> <i>PEK_W03</i> <i>PEK_K01(partialy)</i> <i>PEK_K02(partialy)</i>	Written test
P=1, F=0		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Kendall, K.E. & Kendall, J.E., Systems Analysis & Design, 7th ed., Upper Saddle River : Pearson/Prentice Hall, cop. 2008.
[2] Chaffey, D. & White, D., Business Information Management, 2nd ed., Harlow [etc.] : Pearson Education, 2011.
[3] Ward J., Peppard J., Strategic Planning for Information Systems, 3rd ed., Chichester : John Wiley & Sons, 2009.

SECONDARY LITERATURE:

- [1] Alexander I.F., Stevens R., Writing Better Requirements, Addison-Wesley, 2002.
[2] Cadle J., Paul D, Turner P., Business Analysis Techniques, British Informatics Society, Swindon, 2010
[3] Robertson S & Robertson J., Mastering Requirements Process, 2nd ed., Addison-Wesley, Boston 2006.

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

Maria Galant-Pater, maria.galant-pater@pwr.wroc.pl

**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Information Systems Analysis
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)	K2_ZARZ_W05; K2_ZARZ_W06	C1	Lec 1, Lec 3, Lec 4, Lec 5, Lec 7	N1, N2, N3
PEK_W02	S2_BIS_W05	C3	Lec 2, Lec 4	N1, N2, N3
PEK_W03	S2_BIS_W05	C2	Lec 1, Lec 5, Lec 6	N1, N2, N3
PEK_K01 (competences)	K2_ZARZ_K06	C1,C3	Lec 2, Lec 3, Lec 5, Lec 6	N1, N2, N3
PEK_K02	K2_ZARZ_K06	C2	Lec 2, Lec 3, Lec 5, Lec 6	N1, N2, N3

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

*** - from table above

FACULTY Computer Science and Management / DEPARTMENT

SUBJECT CARD**Name in Polish Internetowe serwisy i systemy informacyjne****Name in English Internet Information Services and Systems****Main field of study (if applicable): Business Information Systems****Specialization (if applicable):****Level and form of studies: 2nd level, full-time****Kind of subject: obligatory****Subject code IEZ1202****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					
including number of ECTS points for direct teacher-student contact (BK) classes	0.5		1.0		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Basic knowledge of and skills in the information technology, programming and networking.

SUBJECT OBJECTIVES

C1 To acquire knowledge of the computer networks and protocols – operation, diagnostics, applications and security.

C2 To acquire knowledge of the properties and features of the hosting providers and their services.

C3 To acquire knowledge of the Internet application servers, their programming languages and database types.

C4 To acquire knowledge of the various Internet information systems, their features and applications in management.

C5 To identify the commercial and free Internet information systems on the market.

C6 To acquire skills in installing and configuring server-side information systems and databases.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Understands how computer networks and protocols operate and how to diagnose them.

PEK_W02 Is aware of and has elementary knowledge of the threats and preventive measures for securing the network communications.

PEK_W03 Knows main properties and features of the hosting service providers.

PEK_W04 Has elementary knowledge of the Internet application servers, their programming frameworks and databases.

PEK_W05 Knows the types of the Internet information systems and their applications in organizations.

relating to skills:

PEK_U01 Can use appropriate network diagnostic tools.

PEK_U02 Is able to send and receive digitally signed and encrypted messages.

PEK_U03 Can compare features of application hosting service platforms and match them to the needs of an organization.

PEK_U04 Can match an Internet information system to the needs of an organization.

PEK_U05 Can sign up for and configure an application hosting service account.

PEK_U06 Can transfer to the server, install and configure server-side information system applications.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction	1
Lec 2	Computer networks, protocols, diagnostics and security	2
Lec 3	Internet information systems: idea, architecture and types	1
Lec 4	Hosting services and application servers	1
Lec 5	The market of client-server software: an overview of free and commercial solutions and areas of their application	1
Lec 6	Description, features, applications and overview of the CMS systems	1
Lec 7	Description, features, applications and overview of the ECMS and eCommerce/Shopping Cart systems	1
Lec 8	Description, features, applications and overview of the LMS and CRM systems	1
Lec 9	Other types of web applications. Voice and audio-video systems	1
Lec 10	A web browser as the application execution platform	1
Lec 11	The client-side programming – an overview	1
Lec 12	The server-side programming and databases – an overview	1
Lec 13	Grading, remarks and conclusions	2
	Total hours	15
Form of classes - laboratory		Number of hours
Lab 1	Introduction to the subject, the computer lab environment and safety rules	2
Lab 2	Assignment 1: networking services and protocols, diagnostics and security	4
Lab 3	Assignment 1: presentation and assessment of results	2
Lab 4	Assignment 2: identification of the hosting services on the market, creating accounts, testing the features of the accounts, script interpreters and databases	4
Lab 5	Assignment 2: presentation and assessment of results	2
Lab 6	Assignment 3: identification of the available solutions, installing and testing a system of type 1 (mandatory type: CMS)	4

Lab 7	Assignment 3: presentation and assessment of results	2
Lab 8	Assignment 4: identification of the available solutions, installing and testing a system of type 2 (individual choice)	2
Lab 9	Assignment 4: presentation and assessment of results	2
Lab 10	Assignment 5: identification of the available solutions, installing and testing a system of type 3 (individual choice)	2
Lab 11	Assignment 5: presentation and assessment of results	2
Lab 12	Summing-up and remarks about problems and solutions	2
	Total hours	30

TEACHING TOOLS USED

- N1. Traditional lecture with overhead slides
N2. Short movies demonstrating some features of the information systems being addressed
N3. Assignments to carry out individually or in teams, in the computer lab and at home
N4. Discussion of the achievements (causes of failures if applicable) during each presentation of students' results

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_W05	Answers to questions (written or at a computer)
F2	PEK_U01-PEK_U06	Assessment of achievements and understanding of the assignment issues (during presentation and discussion)
F3	PEK_U01-PEK_U06	Assessment of the reports of the assignments
F4	PEK_W01-PEK_W05	Lecture attendance (bonus credits)
P=F1+F2+F3+F4		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Course resources published at the course website.
- [2] Stallings W., Case T., Business Data Communications – Infrastructure, Networking and Security, Prentice Hall, 2012.
- [3] Nixon R., Learning PHP, MySQL, JavaScript, and CSS: A Step-by-Step Guide to Creating Dynamic Websites, O'Reilly Media, 2012.
- [4] Szemplinski P.E., ECM Buyer Beware: Real Insights & Answers for Decision Makers, lulu.com, 2011.

SECONDARY LITERATURE:

- [1] Websites of software vendors and others on the subject.
- [2] Kurose J.F., Ross K.W., Computer Networking, Prentice Hall, 2012.
- [3] Ullman L., PHP and MySQL for Dynamic Web Sites, Peachpit Press, 2011.
- [4] Rockoff L., The Language of SQL: How to Access Data in Relational Databases, Course Technology PTR, 2010.
- [5] Canavan T., CMS Security Handbook: The Comprehensive Guide for WordPress, Joomla, Drupal, and Plone, Wiley, 2011.

[6] Cameron S.A., Enterprise Content Management - A Business and Technical Guide,
British Informatics Society Ltd, 2011.

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

Wiesław Dobrowolski, wieslaw.dobrowolski@pwr.wroc.pl

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Internet Information Services and Systems
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY Business Information
Systems
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	S2_BIS_W03	C1	Wy2	N1
PEK_W02	S2_BIS_W03	C1	Wy2	N1
PEK_W03	S2_BIS_W03	C2	Wy4	N1, N2
PEK_W04	S2_BIS_W03	C3	Wy10–Wy12	N1
PEK_W05	S2_BIS_W03	C4, C5	Wy3, Wy5–Wy9	N1, N2
PEK_U01	S2_BIS_U05	C1	La2, La3	N3, N4
PEK_U02	S2_BIS_U05	C1	La2, La3	N3, N4
PEK_U03	S2_BIS_U05	C2, C3	La4, La5	N3, N4
PEK_U04	S2_BIS_U05	C4	La6–La11	N3, N4
PEK_U05	S2_BIS_U05	C6	La4, La5	N3, N4
PEK_U06	S2_BIS_U05	C6	La6–La11	N3, N4
PEK_W01	S2_BIS_W03	C1	Wy2	N1

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

*** - from table above

WYDZIAŁ INFORMATYKA I ZARZĄDZANIE

KARTA PRZEDMIOTU

Nazwa w języku polskim Modelowanie systemów informacyjnych zarządzania

Nazwa w języku angielskim **Management Information Systems Modeling**

Kierunek studiów (jeśli dotyczy): Zarządzanie

Specjalność (jeśli dotyczy): **Business Information Systems**

Stopień studiów i forma: II stopień, stacjonarna

Rodzaj przedmiotu: obowiązkowy

Kod przedmiotu: IEZ1203W, IEZ1203L

Grupa kursów: NIE

	Wykład	Ćwiczenia	Laboratorium	Projekt	Seminarium
Liczba godzin zajęć zorganizowanych w Uczelni (ZZU)	15		15		
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		0.5		

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. Wiedza o metodach analizy potrzeb użytkowników SIZ
2. Znajomość podstaw i umiejętność użytkowania komputerów

CELE PRZEDMIOTU

C1. Zdobycie wiedzy dotyczącej umiejętności budowy modeli systemów informacyjnych zarządzania w różnych obszarach funkcjonalnych organizacji.

C2. Zdobycie umiejętności zastosowania odpowiednich narzędzi komputerowego wspomaganie tworzenia modeli systemów informacyjnych zarządzania.

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01 – ma uporządkowaną wiedzę w zakresie metod i technik budowy modeli funkcji systemów informatycznych zarządzania przy podejściu strukturalnym.

PEK_W02 – ma uporządkowaną wiedzę w zakresie metod i technik budowy modeli danych systemów informatycznych zarządzania przy podejściu strukturalnym.

Z zakresu umiejętności:

PEK_U01 - umie tworzyć modele prostych aplikacji komputerowych wspierających rozwiązania typowych problemów zarządczych i merytorycznych w poszczególnych obszarach funkcjonalnych organizacji.

PEK_U02 – potrafi zastosować narzędzia informatyczne do wspomagania konstrukcji modeli aplikacji komputerowej.

Z zakresu kompetencji społecznych:

TREŚCI PROGRAMOWE

Forma zajęć - wykład		Liczba godzin
Wy1	Wprowadzenie do problematyki modelowania. Modelowanie funkcji biznesowych - DHF.	2
Wy2	Rodzaje zależności i diagramy następstw - DZF.	2
Wy3	Podstawy modelowania danych. Związki wieloargumentowe, rekurencyjne, gen/spec i agregacji.	2
Wy4	Model konceptualny danych (DO-Z).	2
Wy5	Modelowanie klasycznych struktur informacyjnych i wzorce – DO-Z.	1
Wy6	Metody kontroli spójności i kompletności modelu strukturalnego – macierz funkcja/encja, DPD.	2
Wy7	Zasady transformacja DO-Z do schematu relacyjnej bazy danych.	2
Wy8	Kolokwium	2
	Suma godzin	15

Forma zajęć - ćwiczenia		Liczba godzin
Ćw1		
Ćw2		
Ćw3		
Ćw4		
..		
	Suma godzin	

Forma zajęć - laboratorium		Liczba godzin
La1	Konstrukcja modelu funkcji biznesowych w postaci hierarchii funkcji (DHF) – Office Visio.	2
La2	Analiza zależności funkcji elementarnych i budowa diagramu następstw (DZF) - Office Visio.	2
La3	Analiza potrzeb informacyjnych. Klasyfikacja zbiorów informacji, identyfikacja kategorii encji	2
La4	Budowa modelu konceptualnego danych - Office Visio.	2
La5	Analiza macierzy powiązań funkcja/encja F/E.	2
La6	Kontrola spójności i kompletności modelu strukturalnego za pomocą diagramu przepływu danych (DPD) - Office Visio.	2
La7	Wykonanie projektu relacyjnej bazy danych za pomocą reguł transformacji – Office Access.	2

La8	Ocena końcowa	1
	Suma godzin	15

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

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

STOSOWANE NARZĘDZIA DYDAKTYCZNE
N1. komputer N2. rzutnik multimedialny N3. komputerowe aplikacje użytkowe: Ms PowerPoint, Ms Word, Ms Visio N4. tablica

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_U01, PEK_U02	raport
F2	PEK_U01, PEK_U02	raport
F3	PEK_U01, PEK_U02	raport
P1 wykład	PEK_W01, PEK_W02	kolokwium
PW (wykład) = P1 PL (laboratorium) = F1+F2+F3		

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA
<u>LITERATURA PODSTAWOWA:</u> [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
<u>LITERATURA UZUPEŁNIAJĄCA:</u> [1] Gane C., Sarson T., Structured Systems Analysis - Tools and Techniques, Prentice-Hall, Englewood Cliffs, New Jersey, 1989
OPIEKUN PRZEDMIOTU (IMIĘ, NAZWISKO, ADRES E-MAIL)
Grażyna, Hołodnik-Janczura, grazyna.holodnik-janczura@pwr.wroc.pl

MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Modelowanie systemów informacyjnych zarządzania
Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU Zarządzanie
I SPECJALNOŚCI Business Information Systems

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)	S2_BIS_W04	C1	Wy1, Wy2, Wy6	N1, N2, N3, N4
PEK_W02	S2_BIS_W04	C1	Wy3, Wy4, Wy5, wy6, Wy7	N1, N2, N3, N4
PEK_U01 (umiejętność i)	S2_BIS_U03	C2	La1, La2, La3, La4, La5, La6, La7	N1, N2, N3, N4
PEK_U02	S2_BIS_U03	C2	La1, La2, La4, La6, La7	N1, N2, N3, N4
PEK_K01 (kompetencje)				

** - wpisać symbole kierunkowych/specjalnościowych efektów kształcenia

*** - z tabeli powyżej

FACULTY 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):** **Business Information Systems****Level and form of studies:** 2nd level, full-time**Kind of subject:** obligatory**Subject code** IEZ1203W, IEZ1203L**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		

*

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 on skills building models of management information systems in different functional areas of the organization.

C2 Getting the skills to apply the right tools 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 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 use software tools to support the design of computer systems 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		
Cl 2		
Cl 3		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1	Case study “Hydraulics”: business terms - repository.	2
Lab 2	The subject (functional) areas extraction. Decomposition and grouping functions (FHD).	2
Lab 3	Analysis of the interdependencies between functions and the events – process model building (FDD).	2
Lab 4	Analysis of information needs: an entity type identification. Analysis of the business relationship – definition and representation (ERD)	2
Lab 5	Analysis of the movement of data between processes. Consistency and completeness checking.	2
Lab 6	Using the basic technique of logical relational database design	2
Lab 7	Analysis of rules and details of business functions – the usage of an entity type by a function	2
Lab 8	Signing indexes	1
	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. 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, PEK_U02	report
F2	PEK_U01, PEK_U02	report
F3	PEK_U01, PEK_U02	report
P1	PEK_W01, PEK_W02	test
PLec = P1 PLab = F1+F2+F3		

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)

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**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)	S2_BIS_W04	C1	Lec1, Lec2, Lec6	N1, N2, N3, N4
PEK_W02	S2_BIS_W04	C1	Lec3, Lec4, Lec 5, Lec6, Lec 7	N1, N2, N3, N4
PEK_U01 (skills)	S2_BIS_U03	C2	Lab 1, Lab 2, Lab 3, Lab 4, Lab 5, Lab 6, Lab 7	N1, N2, N3, N4
PEK_U02	S2_BIS_U03	C2	Lab 1, Lab 2, Lab 4, Lab 6, Lab7	N1, N2, N3, N4
PEK_K01 (competences)				

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

*** - from table above

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

SUBJECT CARD**Name in Polish Zintegrowane systemy informatyczne****Name in English Management Information Systems****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems****Level and form of studies: 2nd level, full-time****Kind of subject: obligatory****Subject code IEZ1204****Group of courses NO**

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

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Knowledge about:

1. essentials of informatics,
2. technologies of data operations,
3. information systems,
4. theory of organisation and management
5. essentials of enterprise management
6. basics of logistics

SUBJECT OBJECTIVES

C1 Knowledge of integrated management information systems (IMIS)

C2 Knowledge of the implementation of IMIS

C3 Ability to use ERP IMIS

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W03

relating to skills:

PEK_U04

PEK_U05

relating to social competences:

PEK_K02
PEK_K05

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Managing the contemporary enterprise at market layouts.	2
Lec 2	Typology of informational systems at the angle of primary criterions. Types MPR II/ERP.	2
Lec 3	General characteristics of management information system sets.	2
Lec 4	Computer aid management at areas: supply, production, stock, distribution	2
Lec 5	Supporting marketing functioning by informatics management systems	2
Lec 6	Informatics strategies of enterprise management.	2
Lec 7	Choosing and implementation of system set.	2
Lec 8	Conclusion	1
	Total hours	15
Form of classes - class		Number of hours
Form of classes - laboratory		Number of hours
Lab 1	Introduction to ERP system	2
Lab 2	General settings	2
Lab 3	Data management in ERP system	2
Lab 4	Reporting tools	2
Lab 5	Financial functions	2
Lab 6	HR functions	2
Lab 7	Cost functions	2
Lab 8	General ledger	2
Lab 9	Assets	2
Lab 10	Logistics	2
Lab 11	Purchase orders	2
Lab 12	Work orders	2
Lab 13	MRP planning	2
Lab 14	Accounting	2
Lab 15	Conclusion	2
	Total hours	30
Form of classes - seminar		Number of hours
Sem 1	Introduction	2
Sem 2	MIS systems and APICS	2

Sem 3	Basic MIS systems	2
Sem 4	Advanced MIS systems	2
Sem 5	Integrated MIS systems	2
Sem 6	New trends in IMIS systems	2
Sem 7	Computer Integrated Manufacturing	2
Sem 8	Conclusion	1
	Total hours	15

TEACHING TOOLS USED

N1. Traditional lecture
N2. Using ERP IT tool
N3. Self-learning

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_W03	Exam (test)
F2	PEK_U04 PEK_U05 PEK_K02 PEK_K05	Evaluation of the seminar and lab work
C = F1 + F2		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [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

SECONDARY LITERATURE:

- [1] Computerworld magazine

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Business Process Modeling
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 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_W03	K2_ZARZ_W03 K2_ZARZ_W14	C1	Lec1-Lec7	N1
PEK_U04 PEK_U05	K2_ZARZ_U05 K2_ZARZ_U13	C2 C3	Lab1 - Lab7 Proj1 – Proj7	N1 N2 N3
PEK_K02 PEK_K05	K2_ZARZ_K01 K2_ZARZ_K02	C3	Proj1 – Proj7	N2 N3

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

*** - from table above

FACULTY Computer Science and Management

SUBJECT CARD

Name in Polish Analiza danych biznesowych

Name in English Business Data analysis

Main field of study (if applicable): Management

Specialization (if applicable): Business Information System (BIS)

Level and form of studies: 2nd level, full-time

Kind of subject: obligatory

Subject code IEZ1205W, IEZ1205L

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. Basic knowledge of statistics

SUBJECT OBJECTIVES

C1 Getting to know the methods and techniques of business data analysis

C2 Gaining knowledge of statistical packages with particular emphasis on R environment supporting analytical processes.

C3 The ability to select and apply the methods of data analysis specific to the defined research problem.

C4 The ability to present and visualize the results of model building process.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 – The student has knowledge of the methods and techniques of business data analysis, knows its assumptions and conditions of applicability.

relating to skills:

PEK_U01 – he/she is capable of planning and implementing the scheme of data analysis referring to the real problems known from business's practice

PEK_U02 – he/she is capable of using statistical packages as a tool supported analysis

relating to social competences:

PEK_K01 – he/she is well-prepared to critically evaluation of the problem's solutions and his/her views and arguments can defend using scientific research methods.

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	From data to knowledge; types of business data, tools to support the process of data analysis and data visualization.	2
Lec 2	Introduction to R environment: methods and class data storage in R, the structure of objects, missing values, the basics of R, comparison of IBM SPSS package.	2
Lec 3	Basic methods of description and visualization of business data	2
Lec 4	Sales forecasting - introduction	2
Lec 5	Time series forecasting with exponential smoothing methods based on the state space approach.	2
Lec 6	Seasonal autoregressive integrated moving-average models with covariates	2
Lec 7	Functions and procedures that support the forecasting process in R	1
Lec 8	Test	1
Lec 9	Factor analysis – the basis and assumptions.	2
Lec 10	Products positioning map (factor analysis).	2
Lec 11	Modeling purchase decisions using multinomial logit models.	2
Lec 12	Examples of the use of logit models in business practice implemented in R package.	2
Lec 13	Discriminant analysis.	2
Lec 14	Conjoint analysis as an instrument of research preferences.	2
Lec 15	Market simulation and segmentation using conjoint analysis	2
Lec 16	Test	2
	Total hours	30
Form of classes - laboratory		Number of hours
Lab 1	Introduction to R: programming language basics, data acquisition, selecting variables and observations for analysis.	3
Lab 2	Presenting data (bar plots, histogram and kernel smooth, empirical distribution, dot charts, scatter plots etc.); basic data analysis using descriptive statistics.	2
Lab 3	Time series analysis and forecasting	2

Lab 4	Data reduction technique	2
Lab 5	Perceptual and preference positioning maps (discriminant analysis and factor analysis)	2
Lab 6	Discrete choice models with application to purchase decision	2
Lab 7	Conjoint analysis	2
	Total hours	15

TEACHING TOOLS USED

- N1. Presentation
N2. Videos
N3. Information lecture
N4. Case study
N5. Own work - preparation for laboratory

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	Two written tests
F2	PEK_U01, PEK_U02	Oral answers, a written report
P=F1+F2		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Mooi E., Sarstedt M. (2011) *A Concise Guide to Market Research The Process, Data, and Methods Using IBM SPSS Statistics*, Springer.
[2] Kung-Sik Ch., Cryer J.D. (2008) *Time Series Analysis with Applications in R*, Springer.
[3] Hyndman R., Koehler A.B., Ord J.K., Snyder R.D. (2008), *Forecasting with Exponential Smoothing. The State Space Approach*, Springer.
[4] Muenchen R.A. (2011) *R for SAS and SPSS Users*, Springer.

SECONDARY LITERATURE:

- [1] Chambers J.M. (2008) *Software for Data Analysis Programming with R*, Springer.
[2] Johnson R.A., Wichern D.W (2002), *Applied Multivariate Statistical Analysis*, Prentice Hall.

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Business Data analysis
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Business Information System (BIS)**

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	K2_ZARZ_W13 S2_BIS_W01	C1, C2	Lec1-Lec15	N1-N4
PEK_U01	K2_ZARZ_U14 S2_BIS_U01	C3, C4	Lab2, Lab4- Lab7	N2, N4, N5
PEK_U02	K2_ZARZ_U12 S2_BIS_U01	C3, C4	Lab1-Lab7	N4, N5
PEK_K01	K2_ZARZ_K05 K2_ZARZ_K08	C1, C2, C3	Lec1-Lec15, lab1-Lab7	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: Optymalizacja Dyskretna i Przepływy w Sieciach
Name in English: Discrete Optimization and Network Flows
Main field of study (if applicable): Management
Specialization (if applicable): Business Information Systems
Level and form of studies: 2nd level, full-time
Kind of subject: obligatory
Subject code: IEZ1206
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. Basic skills in operations research, algebra and logic.
2. Basic skills in computer programming.

SUBJECT OBJECTIVES

- C1. Presenting some basic network flow problems such as the shortest (longest) path, maximum flow, minimum cost flow and transportation problems.
- C2. Presenting some basic combinatorial optimization problems such as the traveling salesperson, minimum spanning tree, minimum assignment, minimum cut and 0-1 knapsack problems.
- C3. Showing some algorithms which can be applied to solve the problems listed in points C1 and C2, in particular presenting the network simplex algorithm for the minimum cost flow problem.
- C4. Showing some practical applications of discrete optimization and network flow problems.
- C5. Presenting some computer software which can be used to solve network flow and discrete optimization problems.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

S2_BIS_W02 - Zna i rozumie podstawy teoretyczne i zaawansowane metody formalne i narzędzia wspomagania procesów decyzyjnych, w tym optymalizacji

dyskretnej, teorii decyzji i gier w rozwiązywaniu praktycznych problemów decyzyjnych.

relating to skills:

S2_BIS_U02 - Potrafi dobrać i zastosować zaawansowane metody formalne i narzędzia wspomagania procesów decyzyjnych.

relating to social competences:

K2_ZARZ_K04 - Wykazuje gotowość do identyfikowania, krytycznej analizy i rozstrzygnięcia problemów pojawiających się w miejscu pracy. Potrafi przewidywać skutki podejmowanych decyzji.

K2_ZARZ_K05 - Wykazuje gotowość do samodzielnego elastycznego poszukiwania oraz krytycznego doboru metod i narzędzi rozwiązywania problemów pojawiających się w miejscu pracy.

PROGRAMME CONTENT

Form of classes - lecture		Number of h.
Lec 1	Introduction to network flow problems – basic definitions and models	2
Lec 2	Algorithms, running time of algorithms, network representations and some basic network algorithms	2
Lec 3	The shortest path problem – formulation and applications	2
Lec 4	Algorithms for solving the shortest path problem	2
Lec 5	The longest path problem and its applications to project scheduling (the critical path method)	2
Lec 6	The maximum flow and minimum cut problems – formulation and applications. Fulkerson-Ford algorithm for the maximum flow and minimum cut problems	2
Lec 7	Minimum cost flow problem – formulation and applications; cycle cancelling algorithm for the minimum cost flow problem	2
Lec 8	The network simplex algorithm for the minimum cost flow problem	2
Lec 9	The network simplex algorithm for the minimum cost flow problem and the sensitivity analysis	2
Lec 10	The transportation problem – formulation and applications	2
Lec 11	The network simplex algorithm for the transportation problem	2
Lec 12	The minimum assignment and the minimum spanning tree problems – formulation, applications and methods of solving	2
Lec 13	The traveling salesperson problem – formulation, applications and methods of solving	2
Lec 14	Some methods of solving hard discrete optimization problems – local search, branch and bound algorithm and Lagrangean relaxation.	2

Lec 15	Written test	2
	Total hours:	30

Form of classes - laboratory		Number of hours
Lab 1	Introduction; presenting some computer software which can be used to solve network flow and discrete optimization problems	1
Lab 2	Building and solving network flow models for practical problems	2
Lab 3	Building and solving network flow models for practical problems	2
Lab 4	Building and solving network flow models for practical problems	2
Lab 5	Building and solving network flow models for practical problems	2
Lab 6	Building and solving discrete optimization models for practical problems	2
Lab 7	Building and solving discrete optimization models for practical problems	2
Lab 8	Written test	2
	Total hours:	15

TEACHING TOOLS USED
N1. Presentation N2. Case study N3. Solving exercises N4. Using computer software

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	S2_BIS_W02	Written test
P	S2_BIS_U02	Written test
C=1		

PRIMARY AND SECONDARY LITERATURE
<p><u>PRIMARY LITERATURE:</u></p> <p>[1] R. K. Ahuja, T. L. Magnanti, J. B. Orlin. Network flows: theory, algorithms and applications. Prentice Hall, New Jersey 1993</p> <p>[2] M. S. Bazaara, J.J. Jarvis, H.D. Sherali. Linear programming and network flows. John Wiley and Sons, 1990.</p> <p>[3] A. Kasperski. Discrete optimization and network flows. Business Information Systems, PRINTPAP 2011</p>

SECONDARY LITERATURE:

- [1] E. L. Lawler. Combinatorial optimization. Network flows and matroids. Holt Reinhart and Wilson 1976.
- [2] C. H. Papadimitriou, K. Steiglitz. Combinatorial optimization. Algorithms and complexity. Dover Publications Inc. 1998
- [3] H. Taha. Operations research. An introduction. Prentice Hall 2011.

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Discrete Optimization and Network Flows
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	S2_BIS_W02	C1, C2, C3, C4	Lec1 –Lec14	N1, N2, N3
PEK_U01	S2_BIS_U02	C4, C5	Lab1 - Lab7	N3, N4
PEK_K01	K2_ZARZ_K04 K2_ZARZ_K05	C4	Lab1 – Lab7	N3, N4

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

*** - from table above

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

SUBJECT CARD**Name in Polish Modelowanie procesów biznesowych****Name in English Business Process Modeling****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems****Level and form of studies: 2nd level, full-time****Kind of subject: obligatory****Subject code IEZ2201****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		60	60	
Form of crediting	crediting with grade	crediting with grade	crediting with grade	crediting with grade	crediting with grade
For group of courses mark (X) final course					
Number of ECTS points	2		2	2	
including number of ECTS points for practical (P) classes					
including number of ECTS points for direct teacher-student contact (BK) classes	0,3		0,3	0,3	

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

Knowledge about:

1. essentials of informatics,
2. technologies of data operations,
3. information systems,
4. theory of organisation and management
5. essentials of enterprise management

SUBJECT OBJECTIVES

C1 Knowledge of approaches to business process modeling

C2 Knowledge of main BPM methodologies and notations

C3 Ability to state requirements and modeling business processes

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W04

relating to skills:

PEK_U05

relating to social competences:

PEK_K02

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to process modeling	2
Lec 2	Process modeling as a optimization tool	2
Lec 3	Methods of business process modeling	2
Lec 4	Business process perspectives	2
Lec 5	Perspective of processes	2
Lec 6	Maps of processes	2
Lec 7	BPR	2
Lec 8	Conclusion	1
	Total hours	15
Form of classes - class		Number of hours
Form of classes - laboratory		Number of hours
Lab 1	Introduction to BPM IT tools	2
Lab 2	Designing of organization structure	2
Lab 3	Designing of data structure	2
Lab 4	Designing of functional tree	2
Lab 5	Designing of EPC models	2
Lab 6	Designing of business processes using BPMN	2
Lab 7	Planning the tusiness proces implementation	2
Lab 8	Conclusion	1
	Total hours	15
Form of classes - project		Number of hours
Proj 1	Selectiong of the organization	2
Proj 2	Organizational chart	2
Proj 3	EPM model	2
Proj 4	Functional tree	2
Proj 5	EPC model	2
Proj 6	Value Add Chain model	2
Proj 7	BPMN model	2
Proj 8	Conclusion	1

Total hours	15
Form of classes - seminar	Number of hours
TEACHING TOOLS USED	
N1. Traditional lecture N2. Using BPM IT tool N3. Self-learning	

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_W04	test
F2	PEK_W04 PEK_U05 PEK_K02	Evaluation of the project
C = F1 + F2		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] White, Stephen A, and Miers, Derek (2008 August 28). BPMN Modeling and Reference Guide. Future Strategies Inc.. ISBN 978-0-9777-5272-0.
 [2] Debevoise, Neilson T, et. al (2008 July 4). The MicroGuide to Process Modeling in BPMN. BookSurge Publishing. ISBN 978-1-4196-9310-6.
 [3] Briol P. (2008 April 12). BPMN, the Business Process Modeling Notation Pocket Handbook. LuLu. ISBN 978-1-4092-0299-8.

SECONDARY LITERATURE:

- [1] BABOK (www.iiba.org)
 [2] Business Process Modeling forums

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Business Process Modeling
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
 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_W04	K2_ZARZ_W06 K2_ZARZ_W13	C1	Lec1-Lec7	N1
PEK_U05	K2_ZARZ_U13	C2 C3	Lab1 - Lab7 Proj1 – Proj7	N1 N2 N3
PEK_K02	K2_ZARZ_K02	C3	Proj1 – Proj7	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:	Obiektowe modelowanie biznesu				
Name in English:	Object Business Modeling				
Main field of study (if applicable):	Management				
Specialization (if applicable):	Business information systems				
Level and form of studies:	2nd* level, full-time				
Kind of subject:	obligatory				
Subject code:	IEZ2202				
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		0,5		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge and capability from the area information system analysis.
2. Knowledge and capability from the area information system modeling.

SUBJECT OBJECTIVES

- C1 To get knowledge about application possibilities of the object approach to business modeling.
- C2 To acquire capability to building of object business models by means of unified modeling language UML.
- C3 To acquire social competences specific for the activity connected to the application of the object approach to business modeling.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows the UML constructs having application to multi-aspect, object business modeling.

PEK_W02 Knows object business patterns and their use in business modeling.

PEK_W03 Understands the meaning of business modeling for the computerization concept.

relating to skills:

PEK_U01 Capable to build object business models by means of the UML language.

PEK_U02 Capable to use UML software tools.

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 object business modeling.

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 object business modeling.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	<u>Introduction</u> : the business model concept, the role of business models and business modeling motivation, business model components, UML in business modeling.	1
Lec 2	<u>UML use case modeling</u> : business use case concept, use case scenario, use case relationships, business actors and their relationships, use case diagram.	1
Lec 3	<u>UML in conceptual modeling</u> : object concept, attributes, object diagram, classes and relationships between them, class diagram.	1
Lec 4	<u>UML in behavioral modeling</u> : activity diagrams, interaction concept, objects and messages, interaction diagrams, state-chart diagrams.	1
Lec 5	<u>Business architecture</u> : the business architecture concept, business architecture characteristics, business as a system, concepts used to define the business, basic meta-model of business modeling concepts, UML extensions: processes, process steps, business events.	1
Lec 6	<u>Business views</u> : business vision view, business process view, business structure view, business behavior view.	2
Lec 7	<u>Business rules</u> : business rule concept, business rule syntax, rules in UML, specifying business rules with OCL. Business rules categories: derivations, constraints, existence rules, fuzzy business rules.	2
Lec 8	<u>patterns</u> : business pattern concept, types of patterns: business patterns, architectural patterns, design patterns, pattern categories, patterns in UML.	1
Lec 9	<u>Resource and rule patterns</u> .	1
Lec 10	<u>Goal patterns</u> : Business Goal Allocation, Business Goal Decomposition, Business Goal-Problem and <u>process patterns</u> : Action Workflow, Basic Process	1

	Structure, Process Instance State , Process Feedback.	
Lec 11	Process patterns: Process Interaction, Process Layer Control, Process Layer Supply, Process Process-Instance, Resource Use, Time-To-Customer.	1
Lec 12	From Business Architecture to Software Architecture: software development process, software architecture, principles of a good software architecture, using the business architecture to define the software architecture.	1
Lec 13	Written test.	1
	Total hours	15
Form of classes - class		Number of hours
CI 1		
CI 2		
CI 3		
CI 4		
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1	Introduction to the UML tool: functionality, user interface, structure of the project.	2
Lab 2	Creating class model/diagram for the reality given by the natural language description.	2
Lab 3	Creating class model/diagram for the reality given by the formalized document.	2
Lab 4	Creating object model/diagram for class model/diagram given.	2
Lab 5	Practical test.	2
Lab 6	Creating state machine model/diagram for the reality given by the natural language description.	2
Lab 7	Creating activity model/diagram for the reality given by the natural language description.	2
Lab 8	Creating sequence model/diagram for the reality given by the natural language description.	2
Lab 9	Creating sequence model/diagram for the reality given by the natural language description.	2
Lab 10	Practical test.	2
Lab 11	Creating business use case model/diagram for the reality given by the natural language description.	2
Lab 12	Creating goal model/diagram for the reality given by the natural language.	2
Lab 13	Creating proces model/diagram for the reality given by the natural language description.	2

Lab 14	Practical test.	2
Lab 15	Summary and 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 UML Tool 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, PEK_U02	Practical test.
F2	PEK_W01, PEK_U01, PEK_U02	Practical test.
F3	PEK_W01, PEK_U01, PEK_U02	Practical test.
P	PEK_W01, PEK_W02, PEK_W03,	Written test.

	PEK_K01(partially) PEK_K02(partially)	
P=1, F=3		
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
[1] Eriksson H.-E., Penker M. "Business Modeling with UML: Business Patterns at Work", John Wiley & Sons © 2000, ISBN:0471295515		
<u>SECONDARY LITERATURE:</u>		
[2] Roques P. "UML in Practice", John Wiley and Sons, 2004		
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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Object Business 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	K1_Zarz_W24, K1_Zarz_W26, S2BIS_W04, S2BIS_W05	C1	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N8
PEK_W02	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Lec 8, Lec 9, Lec 10, Lec 11	N1, N2, N8
PEK_W03	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Lec 12	N1, N2, N8
PEK_U01	K1_ZARZ_U12, S2BIS_U03	C2	Lab 1, Lab 2, Lab 3, Lab 4, Lab 6, Lab 7, Lab 8, Lab 9, Lab 11, Lab 12, Lab 13	N3, N4, N6, N7
PEK_U02	K1_ZARZ_U12, S2BIS_U03	C2	Lab 1, Lab 2, Lab 3, Lab 4, Lab 6, Lab 7, Lab 8, Lab 9, 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:	Obiektowe modelowanie biznesu
Nazwa w języku angielskim:	Object Business Modeling
Kierunek studiów (jeśli dotyczy):	Zarządzanie
Specjalność (jeśli dotyczy):	Business Information Systems (BIS)
Stopień studiów i forma:	II stopień, stacjonarna
Rodzaj przedmiotu:	obowiązkowy
Kod przedmiotu:	IEZ2202
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		0,5		

*niepotrzebne skreślić

WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

1. Wiedza i umiejętności z zakresu analizy systemów informacyjnych.
2. Wiedza i umiejętności z zakresu modelowania systemów informacyjnych.

CELE PRZEDMIOTU

- C1 Przystwojenie wiedzy o możliwościach zastosowania podejścia obiektowego do modelowania biznesu.
- C2 Opanowanie umiejętności budowania obiektowych modeli biznesu i użycia do tego celu zunifikowanego języka modelowania UML.
- C3 Nabycie kompetencji społecznych specyficznych dla działalności związanej z zastosowaniem modelowania obiektowego biznesu

PRZEDMIOTOWE EFEKTY KSZTAŁCENIA

Z zakresu wiedzy:

PEK_W01 Zna konstrukcje języka UML mające zastosowanie do wieloaspektowego, obiektowego modelowania biznesu.

PEK_W02 Zna obiektowe wzorce biznesowe i ich użycie w modelowaniu biznesu.

PEK_W03 Rozumie znaczenie modelowania biznesu dla formułowania koncepcji informatyzacji.

Z zakresu umiejętności:

PEK_U01 Potrafi budować obiektowe modele biznesu posługując się językiem UML.

PEK_U02 Potrafi posługiwać się narzędziami programowymi UML.

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 obiektowego modelowania biznesu.

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

TREŚCI PROGRAMOWE

Forma zajęć – wykład		Liczba godzin
Wy1	<u>Wprowadzenie</u> : pojęcie modelu biznesu, rola modeli biznesu i motywacja, składniki modelu biznesu, UML w modelowaniu biznesu.	1
Wy2	<u>UML w modelowaniu przypadków użycia</u> : pojęcie biznesowego przypadku użycia, scenariusz, powiązania między przypadkami użycia, aktorzy biznesowi i ich powiązania, diagram przypadków użycia.	1
Wy3	<u>UML w modelowaniu konceptualnym</u> : pojęcie obiektu, atrybuty, diagram obiektów, klasy i związki między nimi, diagram klas.	1
Wy4	<u>UML w modelowaniu zachowania</u> : diagramy czynności, pojęcie interakcji, obiekty i komunikaty, diagramy interakcji, diagramy maszyny skończenie stanowej	1
Wy5	<u>Architektura biznesu</u> : pojęcie architektury biznesu, cechy architektury biznesu, biznes jako system, pojęcia służące definiowaniu biznesu jako systemu, bazowy metamodel kategorii modelowania biznesu, rozszerzenia UML: procesy, kroki procesów, zdarzenia biznesowe.	1
Wy6	<u>Perspektywy biznesowe</u> : perspektywa wizji, perspektywa procesowa, perspektywa struktury biznesu, perspektywa zachowania biznesu.	2
Wy7	<u>Reguły biznesowe</u> : pojęcie reguły biznesowej, składnia reguły biznesowej, reguły w UML, specyfikacja reguł w OCL. kategorie reguł biznesowych: produkcji, więzy, reguły istnienia, rozmyte reguły biznesowe.	2
Wy8	<u>Wzorce biznesowe</u> : pojęcie wzorca biznesowego, typy wzorców: wzorce biznesu, wzorce architektoniczne, wzorce projektowe, kategorie wzorców, wzorce w UML	1
Wy9	<u>Wzorce środków i reguł</u> .	1

Wy10	<u>Wzorce celów</u> : alokacja celów biznesowych, dekompozycja celów biznesowych, problem – cel biznesowy. <u>Wzorce procesowe</u> : przepływ pracy, bazowy model procesu, stan instancji procesu , sprzężenia zwrotne.	1
Wy11	<u>Wzorce procesowe</u> : interakcja procesów, procesowa warstwa kontroli, procesowa warstwa zasilania, instancje procesów, użycia środków, Time-To-Customer	1
Wy12	<u>Od architektury biznesu do architektury oprogramowania</u> : proces budowy oprogramowania, architektura oprogramowania, zasady dobrej architektury oprogramowania, użycie architektury biznesu do definiowania architektury oprogramowania.	1
Wy13	Sprawdzian pisemny	1
	Suma godzin	15

Forma zajęć - ćwiczenia		Liczba godzin
Ćw1		
Ćw2		
Ćw3		
Ćw4		
..		
	Suma godzin	0

Forma zajęć - laboratorium		Liczba godzin
La1	Narzędzie UML: funkcjonalność, interfejs użytkownika, projekt i jego struktura. Użytkowanie narzędzia UML.	2
La2	Tworzenie modelu/diagramu klas dla rzeczywistości danej opisem naturalnym	2
La3	Tworzenie modelu/diagramu klas dla rzeczywistości danej dokumentem sformalizowanym	2
La4	Tworzenie modelu/diagramu obiektów dla zadanego diagramu klas.	2
La5	Sprawdzian praktyczny przy komputerze.	2
La6	Tworzenie modelu/diagramu maszyny skończenie stanowej dla rzeczywistości danej opisem naturalnym.	2
La7	Tworzenie modelu/diagramu czynności dla rzeczywistości danej opisem naturalnym.	2
La8	Tworzenie modelu/diagramu sekwencji dla rzeczywistości danej opisem naturalnym.	2
La9	Tworzenie modelu/diagramu komunikacji dla rzeczywistości danej opisem naturalnym	2
La10	Sprawdzian praktyczny przy komputerze.	2
La11	Tworzenie modelu/diagramu przypadków użycia dla rzeczywistości danej opisem naturalnym.	2
La12	Tworzenie modelu/diagramu celów dla rzeczywistości danej opisem naturalnym.	2
La13	Tworzenie modelu/diagramu procesów dla rzeczywistości danej opisem naturalnym.	2
La14	Sprawdzian praktyczny przy komputerze.	2
La15	Podsumowanie i zaliczenie	2

Suma godzin	30
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Forma zajęć - projekt		Liczba godzin
Pr1		
Pr2		
Pr3		
Pr4		
...		
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 (angielskojęzycznym) środowisku MS Windows oraz Enterprise Architect 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, PEK_U02	Sprawdzian praktyczny przy komputerze
F2	PEK_W01, PEK_U01, PEK_U02	Sprawdzian praktyczny przy komputerze
F3	PEK_W01, PEK_U01, PEK_U02	Sprawdzian praktyczny przy komputerze
P	PEK_W01, PEK_W02, PEK_W03, PEK_K01(częściowo) PEK_K02(częściowo)	Sprawdzian pisemny
P=1, F=3		

LITERATURA PODSTAWOWA I UZUPEŁNIAJĄCA
<u>LITERATURA PODSTAWOWA:</u> [1] Eriksson H.-E., Penker M. “Business Modeling with UML: Business Patterns at Work”, John Wiley & Sons © 2000, ISBN:0471295515
<u>LITERATURA UZUPEŁNIAJĄCA:</u> [1] Roques P. “UML in Practice”, John Wiley and Sons, 2004
OPIEKUN PRZEDMIOTU (IMIE, NAZWISKO, ADRES E-MAIL) Witold Rekuć, witold.rekuc@pwr.wroc.pl

MACIERZ POWIĄZANIA EFEKTÓW KSZTAŁCENIA DLA PRZEDMIOTU
Obiektowe modelowanie biznesu
Z EFEKTAMI KSZTAŁCENIA NA KIERUNKU Zarządzanie
I SPECJALNOŚCI Business information systems

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_W26, S2BIS_W04, S2BIS_W05	C1	Wy1, Wy2, Wy3, Wy4, Wy5, Wy6, Wy7	N1, N2, N8
PEK_W02	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Wy8, Wy9, Wy10, Wy11	N1, N2, N8
PEK_W03	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Wy12	N1, N2, N8
PEK_U01	K1_ZARZ_U12, S2BIS_U03	C2	La1, La2, La3, La4, La6, La7, La8, La9, La11, La12, La13	N3, N4, N6, N7
PEK_U02	K1_ZARZ_U12, S2BIS_U03	C2	La1, La2, La3, La4, La6, La7, La8, La9, La11, La12, L13	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

COMPUTER SCIENCE AND MANAGEMENT FACULTY					
SUBJECT CARD					
Eksploracja danych					
Data Mining					
Main field of study (if applicable): Management					
Specialization (if applicable): Business Information Systems (BIS)					
Level and form of studies: 2st level, full-time					
Kind of subject: obligatory					
Subject code: IEZ2203					
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)	90		60		
Form of crediting	Examination with grade		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	0,5		1		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Student has a basic knowledge of statistical tools.
2. Student has a basic practical skills in working with statistical 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 collection data for decision problem.
- PEK_U02: Student can identify and propose ways of solving data mining problems.
- PEK_U03: 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.	1
Lec 2	Pre-processing.	2
Lec 3	Cluster analysis: nearest (Furthest) algorithm, group average (median) algorithm.	2
Lec 4	k-means algorithm.	2
Lec 5	Hierarchical classification algorithms.	2
Lec 6	Classification and decision trees: CART, C4.5, C5.0 algorithms.	2
Lec 7	Regression trees.	2
Lec 8	Association Methods: A priori methods, FP-growth algorithm, one attribute rule algorithm.	2
	Total hours	15
Form of classes - class		Number of hours
Form of classes - laboratory		Number of hours
Form of classes - project		Number of hours
Proj 1	Data collection; team work.	2
Proj 2	Pre-processing data; team work.	2
Proj 3	Nearest (Furthest) algorithm implementation; team work.	2
Proj 4	k-Means algorithm implementation; team work.	2
Proj 5	Group average (median) algorithm implementation; team work.	2
Proj 6	Hierarchical classification algorithm implementation; team work.	2
Proj 7;	Comparison results of cluster and classification algorithms; team	4

Proj 8	work.	
Proj 9	Presentation result; team work.	2
Proj 10, Proj 11	Classification and regression tree implementation; team work.	4
Proj 12	Comparison results of classification algorithms; team work.	2
Proj 13	Presentation result; team work.	2
Proj 14	Choosing the best method; team work.	2
Proj 15	Final presentation; team work.	2
	Total hours	30
Form of classes - seminar		Number of hours
TEACHING TOOLS USED		
N1. Multimedia presentation . N2. Data collection. N3. Computer data analysis. N4. Team work. N5. Written test (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
F1	PEK_U01	Report
F2	PEK_U01, PEK_U02, PEK_U03 PEK_K01, PEK_K02	Team presentation
P1	PEK_W01, PEK_W02	Written test.
P2	PEK_U01, PEK_U02, PEK_U03	Report of team work.

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
Data Mining
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)	S2_BIS_W01 K2_ZARZ_W08	C1, C2	Lec01, Lec02, Lec03, Lec 04, Lec 05, Lec 06, Lec07, Lec 08	N1, N5
PEK_W02 (knowledge)	S2_BIS_W01 K2_ZARZ_W08	C1, C2	Lec01, Lec02, Lec03, Lec04, Lec05, Lec 06, Lec07, Lec08	N1, N5
PEK_U01 (skills)	K2_ZARZ_U03	C1, C2	Proj01	N2, N4
PEK_U02 (skills)	S2_BIS_U01 K2_ZARZ_U03	C1, C2	Proj02, ...,Proj15	N1, N3, N4
PEK_U03 (skills)	S2_BIS_U01 K2_ZARZ_U03	C1, C2	Proj02, ...,Proj15	N1, N3, N4
PEK_K01 (social competencies)	K2_ZARZ_K01 K2_ZARZ_K02 K2_ZARZ_K05	C3	Proj01, ...,Proj15	N4
PEK_K02 (social competencies)	K2_ZARZ_K01 K2_ZARZ_K02 K2_ZARZ_K05	C3	Proj01, ...,Proj15	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: Gry i decyzje w zarządzaniu****Name in English: Games and decisions in management****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems****Level and form of studies: 2nd level, full-time****Kind of subject: obligatory****Subject code: IEZ2204****Group of courses YES**

	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	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	0.5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic skills in operations research, algebra and logic.

SUBJECT OBJECTIVES

C1. Presenting various types of decision situations depending on the number of participants and the type of environment.

C2. Presenting noncooperative and cooperative games and their applications to decision making.

C3. Showing some methods of decision making under risk and uncertainty.

C4. Showing some practical applications of game theory and decision theory; solving exercises on game theory and decision theory.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

S2_BIS_W02 - Zna i rozumie podstawy teoretyczne i zaawansowane metody formalne i narzędzia wspomagania procesów decyzyjnych, w tym optymalizacji dyskretnej, teorii decyzji i gier w rozwiązywaniu praktycznych problemów decyzyjnych.

relating to skills:

S2_BIS_U02 - Potrafi dobrać i zastosować zaawansowane metody formalne i narzędzia wspomagania procesów decyzyjnych.

relating to social competences:

K2_ZARZ_K04 - Wykazuje gotowość do identyfikowania, krytycznej analizy i rozstrzygnięcia problemów pojawiających się w miejscu pracy. Potrafi przewidywać skutki podejmowanych decyzji.

K2_ZARZ_K05 - Wykazuje gotowość do samodzielnego elastycznego poszukiwania oraz pojawiających się w miejscu pracy krytycznego doboru metod i narzędzi

PROGRAMME CONTENT		
Form of classes - lecture		Number of h.
Lec 1	Classification of decision situations; games in extensive and normal form	2
Lec 2	Games in extensive and normal form, the concepts of strategy and equilibrium	2
Lec 3	Noncooperative 2-person zero-sum games – formulation, applications and methods of solving	
Lec 4	Noncooperative 2-person nonzero-sum games – formulation, applications and methods of solving, part I	2
Lec 5	Noncooperative 2-person nonzero-sum games – formulation, applications and methods of solving, part II	2
Lec 6	Noncooperative n -person games – applications. Price of anarchy and price of stability.	2
Lec 7	Cooperative 2-person games – applications and Nash solution concept	2
Lec 8	Cooperative n -person games – applications, the concept of a core and Shapley value, part I	2
Lec 9	Cooperative n -person games – applications, the concept of a core and Shapley value, part II	2
Lec 10	Decision making under risk – von Neumann and Morgenstern utility theory	2
Lec 11	Decision making under uncertainty – basic criteria for decision making	2
Lec 12	Decision making under uncertainty – advanced topics and applications to optimization	2
Lec 13	Group decision making, Arrow's paradox	2
Lec 14	Applications of decision theory, part I	2
Lec 15	Applications of decision theory, part II	2
	Total hours:	30

Form of classes - class		Number of hours
Cl 1	Applications and methods of solving 2-person zero-sum games	1
Cl 2	Applications and methods of solving 2-person nonzero-sum games	2
Cl 3	Applications and methods of solving 2-person nonzero-sum games	2
Cl 4	Applications and methods of solving cooperative n -person games	2
Cl 5	Applications and methods of solving cooperative n -person games	2
Cl 6	Applications and methods of solving decision problems under risk and uncertainty	2
Cl 7	Applications and methods of solving decision problems under risk and uncertainty	2
Cl 8	Written test	2
Total hours		15

TEACHING TOOLS USED
N1. Presentation N2. Case study N3. Solving 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	S2_BIS_W02	Exam
P	S2_BIS_U02	Written test
C=1		

PRIMARY AND SECONDARY LITERATURE
<p><u>PRIMARY LITERATURE:</u></p> <p>[1] R.D. Luce, H. Raiffa. Games and decisions. Introduction and critical survey. Dover Publication Inc. 1957</p> <p>[2] H. Peters. Game Theory. A multi-level approach. Springer 2008</p> <p>[3] R. Myerson. Game Theory: Analysis of conflict, Harvard University Press, 1997</p> <p><u>SECONDARY LITERATURE:</u></p> <p>[1] M. Osborne, A. Rubinstein. A course in game theory. MIT 1994</p> <p>[2] Algorithmic game theory. N. Nisan, T. Roughgarden, E. Tardos, V. Vazirani (eds.). Cambridge University Press 2007</p> <p>[3] E. Gura, M. B. Maschler. Insights into game theory. An alternative mathematical experience. Cambridge University Press 2008</p> <p>[4] A. Kelly. Decision making using game theory. An introduction for managers. Cambridge University Press 2003</p>

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

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT

Games and decisions in management

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	S2_BIS_W02	C1, C2, C3	Lec1 –Lec15	N1, N2, N3
PEK_U01	S2_BIS_U02	C1, C2, C3, C4	C11 - C17	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:					
Name in English: E-economy					
Main field of study (if applicable): Management					
Specialization (if applicable): Business information systems					
Level and form of studies: 2nd level, full-time					
Kind of subject: obligatory					
Subject code: IEZ2205					
Group of courses: NO					
	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
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					
including number of ECTS points for direct teacher-student contact (BK) classes	0,5				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge about management in organization.
2. Basic knowledge about computer networks, Internet and Internet websites

SUBJECT OBJECTIVES

C1 To prepare students (to give them the foundations of technical and economic infrastructure) for starting a business activity using modern technologies and for using them safely in everyday life.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01. Knows the basis of electronic economy and knows how to carry successfully business activity in Internet

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Development of the Internet. Idea of e-economy.	2
Lec 2	Models of e-business.	2

Lec 3	e-Commerce on B2B, B2C and C2C markets.	2
Lec 4	Methods of payment in the Internet.	2
Lec 5	e-administration, e-government.	2
Lec 6	Mobility, security.	2
Lec 7	Technologies	2
Lec 8	Written test	1
	Total hours	15
Form of classes - class		Number of hours
Cl 1		
	Total hours	
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. 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	Written test
P = 1		
PRIMARY AND SECONDARY LITERATURE		

PRIMARY LITERATURE:

- [1] Chaffey D., "E-Business and E-Commerce Management", Longman, 2007.
[2] Laudon K. C, Traver C. G., "E-commerce: business, technology, society", Prentice Hall, 2006.
[3] Awad E. M., "Electronic commerce: from vision to fulfillment", Pearson/Prentice Hall, 2006.

SECONDARY LITERATURE:

- [1] Internet sites

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
E-economy
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	S2_BIS_W03	C1	Lec1-Lec8	N1, N2, N3, 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:	Obiektowe modelowanie biznesu				
Name in English:	Business Object Modeling				
Main field of study (if applicable):	Management				
Specialization (if applicable):	Business information systems				
Level and form of studies:	2nd* level, full-time				
Kind of subject:	obligatory				
Subject code:	IEZ2206				
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		1,0		

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge and capability from the area information system analysis.
2. Knowledge and capability from the area information system modeling.

SUBJECT OBJECTIVES

- C1 To get knowledge about application possibilities of the object approach to business modeling.
- C2 To acquire capability to building of object business models by means of unified modeling language UML.
- C3 To acquire social competences specific for the activity connected to the application of the object approach to business modeling.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 Knows the UML constructs having application to multi-aspect, object business modeling.

PEK_W02 Knows object business patterns and their use in business modeling.

PEK_W03 Understands the meaning of business modeling for the computerization concept.

relating to skills:

PEK_U01 Capable to build object business models by means of the UML language.

PEK_U02 Capable to use UML software tools.

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 object business modeling.

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 object business modeling.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	<u>Introduction</u> : the business model concept, the role of business models and business modeling motivation, business model components, UML in business modeling.	1
Lec 2	<u>UML use case modeling</u> : business use case concept, use case scenario, use case relationships, business actors and their relationships, use case diagram.	1
Lec 3	<u>UML in conceptual modeling</u> : object concept, attributes, object diagram, classes and relationships between them, class diagram.	1
Lec 4	<u>UML in behavioral modeling</u> : activity diagrams, interaction concept, objects and messages, interaction diagrams, state-chart diagrams.	1
Lec 5	<u>Business architecture</u> : the business architecture concept, business architecture characteristics, business as a system, concepts used to define the business, basic meta-model of business modeling concepts, UML extensions: processes, process steps, business events.	1
Lec 6	<u>Business views</u> : business vision view, business process view, business structure view, business behavior view.	2
Lec 7	<u>Business rules</u> : business rule concept, business rule syntax, rules in UML, specifying business rules with OCL. Business rules categories: derivations, constraints, existence rules, fuzzy business rules.	2
Lec 8	<u>patterns</u> : business pattern concept, types of patterns: business patterns, architectural patterns, design patterns, pattern categories, patterns in UML.	1
Lec 9	<u>Resource and rule patterns</u> .	1
Lec 10	<u>Goal patterns</u> : Business Goal Allocation, Business Goal Decomposition, Business Goal-Problem and <u>process patterns</u> : Action Workflow, Basic Process	1

	Structure, Process Instance State , Process Feedback.	
Lec 11	Process patterns: Process Interaction, Process Layer Control, Process Layer Supply, Process Process-Instance, Resource Use, Time-To-Customer.	1
Lec 12	From Business Architecture to Software Architecture: software development process, software architecture, principles of a good software architecture, using the business architecture to define the software architecture.	1
Lec 13	Written test.	1
	Total hours	15
Form of classes - class		Number of hours
CI 1		
CI 2		
CI 3		
CI 4		
..		
	Total hours	
Form of classes - laboratory		Number of hours
Lab 1	Introduction to the UML tool: functionality, user interface, structure of the project.	2
Lab 2	Creating class model/diagram for the reality given by the natural language description.	2
Lab 3	Creating class model/diagram for the reality given by the formalized document.	2
Lab 4	Creating object model/diagram for class model/diagram given.	2
Lab 5	Practical test.	2
Lab 6	Creating state machine model/diagram for the reality given by the natural language description.	2
Lab 7	Creating activity model/diagram for the reality given by the natural language description.	2
Lab 8	Creating sequence model/diagram for the reality given by the natural language description.	2
Lab 9	Creating sequence model/diagram for the reality given by the natural language description.	2
Lab 10	Practical test.	2
Lab 11	Creating business use case model/diagram for the reality given by the natural language description.	2
Lab 12	Creating goal model/diagram for the reality given by the natural language.	2
Lab 13	Creating proces model/diagram for the reality given by the natural language description.	2

Lab 14	Practical test.	2
Lab 15	Summary and 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 UML Tool 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, PEK_U02	Practical test.
F2	PEK_W01, PEK_U01, PEK_U02	Practical test.
F3	PEK_W01, PEK_U01, PEK_U02	Practical test.
P	PEK_W01, PEK_W02, PEK_W03,	Written test.

	PEK_K01(partially) PEK_K02(partially)	
P=1, F=3		
PRIMARY AND SECONDARY LITERATURE		
<u>PRIMARY LITERATURE:</u>		
[1] Eriksson H.-E., Penker M. "Business Modeling with UML: Business Patterns at Work", John Wiley & Sons © 2000, ISBN:0471295515		
<u>SECONDARY LITERATURE:</u>		
[2] Roques P. "UML in Practice", John Wiley and Sons, 2004		
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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Business Object 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	K1_Zarz_W24, K1_Zarz_W26, S2BIS_W04, S2BIS_W05	C1	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N8
PEK_W02	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Lec 8, Lec 9, Lec 10, Lec 11	N1, N2, N8
PEK_W03	K1_ZARZ_W26, S2BIS_W04, S2BIS_W05	C1	Lec 12	N1, N2, N8
PEK_U01	K1_ZARZ_U12, S2BIS_U03	C2	Lab 1, Lab 2, Lab 3, Lab 4, Lab 6, Lab 7, Lab 8, Lab 9, Lab 11, Lab 12, Lab 13	N3, N4, N6, N7
PEK_U02	K1_ZARZ_U12, S2BIS_U03	C2	Lab 1, Lab 2, Lab 3, Lab 4, Lab 6, Lab 7, Lab 8, Lab 9, 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

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish: Badania Operacyjne****Name in English: Operations Research****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems****Level and form of studies: 2nd level, full-time****Kind of subject: obligatory****Subject code: MAZ1201****Group of courses YES**

	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	Examination		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

1. Basic skills in algebra, logic and computer programming.

SUBJECT OBJECTIVES

- C1. Presenting linear programming problems and their applications to management.
 C2. Presenting some methods of solving linear programming problems, in particular the simplex algorithm and the branch and bound method for solving integer programs.
 C3. Showing some methods of model building and postoptimality analysis
 C4. Presenting some computer software which can be used to solve linear programming problems.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

K2_ZARZ_W13 - Zna zasady budowy modeli ekonometrycznych i symulacyjnych. Ma specjalistyczną wiedzę w zakresie modelowania ilościowego i prognozowania stanów i procesów w organizacji.

relating to skills:

K2_ZARZ_U10 - Potrafi stosować metody badań operacyjnych jako narzędzia

wspomagającego zaawansowane analizy decyzyjne.

K2_ZARZ_U18 - Potrafi formułować i wyczerpująco uzasadniać opinie, wygłaszać prezentacje problemów z zakresu nauk o zarządzaniu, na tematy związane ze środowiskiem pracy, a także uczestniczyć w dyskusjach naukowych i zawodowych - w języku polskim i obcym.

relating to social competences:

PROGRAMME CONTENT		
Form of classes - lecture		Number of hours
Lec 1	History and methodology of operations research; linear programming problems and the graphical method of solving linear programming problems	2
Lec 2	The simplex algorithm for solving linear programming problems	2
Lec 3	Sensitivity analysis in linear programming problems	2
Lec 4	Integer linear programming problems and their applications to advanced modeling	2
Lec 5	Integer linear programming problems and their applications to advanced modeling	2
Lec 6	The Branch and bound and cutting plane algorithms for solving integer linear programming problems	2
Lec 7	Multicriteria linear programming problems – applications and methods of solving	2
Lec 8	Repetition and preparation for the exam	1
Total hours:		1

Form of classes - laboratory		Number of hours
Lab 1	Introduction; presenting some computer software for solving linear programming problems.	2
Lab 2	Building and solving linear programming models for practical problems	2
Lab 3	Building and solving linear programming models for practical problems	2
Lab 4	Building and solving linear programming models for practical problems	2
Lab 5	Building and solving linear programming models for practical problems	2
Lab 6	The simplex algorithm for solving linear programming problems	2
Lab 7	Sensitivity analysis of solutions of linear programming problems	2
Lab 8	Building and solving integer linear programming models for practical problems	2

Lab 9	Building and solving integer linear programming models for practical problems	2
Lab10	Building and solving integer linear programming models for practical problems	2
Lab 11	Building and solving integer linear programming models for practical problems	2
Lab 12	Building and solving integer linear programming models for practical problems	2
Lab 13	Branch and bound algorithm for solving integer linear programming problems	2
Lab 14	Repetition and preparation for the test	2
Lab 15	Written test	2
	Total hours:	30

TEACHING TOOLS USED
N1. Presentation N2. Case study N3. Solving exercises N4. Using computer software

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	K2_ZARZ_W13	Exam
P2	K2_ZARZ_U10	Written test
C		

PRIMARY AND SECONDARY LITERATURE
<u>PRIMARY LITERATURE:</u> [1] H. Taha. Operations research. An introduction, Prentice Hall 2011 [2] F. S. Hiller, G. J. Liberman. Introduction to operations research, Mc Graw Hill 2003 [3] W. L. Winston. Operations research: applications and algorithms. PWS-KENT Publishing Company 1987 [4] M. Kulej. Operations research. Business Information Systems. PRINTPAP, 2011
<u>SECONDARY LITERATURE:</u> [1] H. P. Williams. Model building in mathematical programming. Wiley 1990. [2] R.K. Ahuja, T. L. Magnanti, J. B. Orlin. Network flows: theory algorithms and applications. Prentice Hall, Inc., 1993 [3] A. Schrijver. Theory of linear and integer programming, John Wiley & Sons, 1998 [4] R. Garfinkel, G.L. Nemhauser. Integer programming, Wiley 1972

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Operations Research
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	K2_ZARZ_W13	C1, C3, C3	Lec1 -Lec8	N1,N2,N3
PEK_U01	K2_ZARZ_U10 K2_ZARZ_U18	C3, C4	Lab1- Lab14	N2, N3, 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** Statystyka biznesowa**Name in English** Business Statistics**Main field of study (if applicable):** Management**Specialization (if applicable):** Business Information systems**Level and form of studies:** 2nd level, full-time**Kind of subject:** obligatory**Subject code** MAZ1202**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			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. Mathematics

SUBJECT OBJECTIVES

C1 Presenting to the listeners elements of statistics and probability theory.

C2 Exercises are offered for practice in using statistical computer packages

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 He knows the methods of data analysis and methods of representation

PEK_W02 He knows and understands the theoretical foundations and advanced formal methods and tools for statistics.

relating to skills:

PEK_U01 He can choose the sources of information and use them to solve complex management problems and issues in the organization.

relating to social competences:

PEK_K01 – He recognizes the significance and limitations associated with the use of statistical data

PROGRAMME CONTENT

Form of classes - lecture	Number of hours
---------------------------	-----------------

Lec 1	One random variables and their distributional functions	2
Lec 2	Multi-dimensional random variables and their distributional functions	2
Lec 3	Independence of multi random variables and their parameters. Central- limit theorem	2
Lec 4	Estimating the mean and variance for population. The structure of population and its characteristics	2
Lec 5	Estimating the mean and variance for grouped data. The distribution of the most important statistics	2
Lec 6	Confidence intervals	2
Lec 7	Parametric and non-parametric tests	3
	Total hours	15
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	The average values, variability and distribution of elements in a sample	2
Lab 2	The average values, variability and distribution of elements in a sample – cont.	2
Lab 3	Calculating probabilities for given random variables	2
Lab 4	Calculating probabilities for given random variables – cont.	2
Lab 5	The central limit theorem	2
Lab 6	Confidence intervals	2
Lab 7	Parametric hypotheses	3
	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	
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TEACHING TOOLS USED

N1. Informative lecture
 N2. Computer packages
 N3. Case study

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	test
P=1		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Aczel A. D., Sounderpandian J.: Complete Business Statistics, MacGraw-Hill, Irwin, 2009
- [2] Mercik J.: BUSINESS STATISTICS. Six Lectures on Statistics, Wroclaw University of Technology Press, Wroclaw, 2011
- [3]
- [4]

SECONDARY LITERATURE:

- [1] Any text-book with “statistics” in its title
- [2]
- [3]

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**MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Business Statistics
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)	K2_ZARZ_W07, K2_ZARZ_W13	C1, C2	Lec1-Lec7 Lab1-Lab7	N1, N2, N3
PEK_W02	K2_ZARZ_W07, K2_ZARZ_W13	C1, C2	Lec1-Lec7 Lab1-Lab7	N1, N2, N3
PEK_U01 (skills)	K2_ZARZ_U03, K2_ZARZ_U08, K2_ZARZ_U11 K2_ZARZ_U12, K2_ZARZ_U14	C1, C2	Lec1-Lec7 Lab1-Lab7	N1, N2, N3
PEK_K01 (competences)	K2_ZARZ_K09	C1, C2	Lec1-Lec7 Lab1-Lab7	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: Ekonometria					
Name in English: Econometrics					
Main field of study (if applicable): Management					
Specialization (if applicable): Business Information systems					
Level and form of studies: 2nd level, full-time					
Kind of subject: obligatory					
Subject code MAZ1203					
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. Mathematics
2. Business Statistics

SUBJECT OBJECTIVES

C1 Knowledge and technology of econometric modeling and application to economy

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 He knows the methods of data analysis and methods of representation

PEK_W02 He knows and understands the theoretical foundations and advanced formal methods of econometrics

relating to skills:

PEK_U01 He can choose the sources of information and use them to model complex management problems and issues in the organization via econometrics

relating to social competences:

PEK_K01 He recognizes the significance and limitations associated with the use of econometric models

PROGRAMME CONTENT

Form of classes - lecture	Number of hours
----------------------------------	------------------------

Lec 1	One-way and Multi-way analysis of variation	2
Lec 2	Gauss-Markov assumption	2
Lec 3	Least-square method and model's determination	2
Lec 4	Least-square method and model's determination –cont.	2
Lec 5	Estimation of explaining variables	2
Lec 6	Model parameters' verification and testing	2
Lec 7	Real-life examples of applications	3
	Total hours	15
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	Collection of data of chosen economical phenomena, building of econometric model and its verification and validation, forecasting of future values of the phenomena (forecasting)	15
	Total hours	15
Form of classes - seminar		Number of hours
Sem 1		
Sem 2		
Sem 3		
...		
	Total hours	
TEACHING TOOLS USED		
N1. Informative lecture N2. Computer packages N3. Case study		

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	Project's report
P=1		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Aczel A. D., Sounderpandian J.: Complete Business Statistics, MacGraw-Hill, Irwin, 2009
 [2] Mercik J.: BUSINESS STATISTICS. Six Lectures on Statistics, Wroclaw University of Technology Press, Wroclaw, 2011
 [3] G. S. Maddala: Introduction to econometrics, John Wiley & Sons, Ltd.

SECONDARY LITERATURE:

- [1] Any text-book with "econometrics" in its title

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Econometrics
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)	K2_ZARZ_W07, K2_ZARZ_W13	C1	Lec1-Lec7 Proj 1	N1, N2, N3
PEK_W02	K2_ZARZ_W07, K2_ZARZ_W13	C1	Lec1-Lec7 Proj 1	N1, N2, N3
PEK_U01 (skills)	K2_ZARZ_U03, K2_ZARZ_U08, K2_ZARZ_U11, K2_ZARZ_U12, K2_ZARZ_U14	C1	Lec1-Lec7 Proj 1	N1, N2, N3
PEK_K01 (competences)	K2_ZARZ_K04, K2_ZARZ_K09	C1	Lec1-Lec7 Proj 1	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****Name in English Civil law****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems (BIS)****Level and form of studies: 1st/ 2nd* level, full-time / part-time*****Kind of subject: obligatory****Subject code PRZ1205 PRZ1205Ć****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	the 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	0,5			

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge bases rights

SUBJECT OBJECTIVES

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

C2 In the course courses explanation of the grounds of civil law, 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, rights obligations, including in particular contract law

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W05

He is aware of issues of the identification and analysis of problems and management information systems in business and to formulate requirements for systems. He is aware at the very core of Computer management Project

PEK_U02

-It can choose and apply advanced methods and tools supporting formal decision making processes

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	The concept of civil law. Source of civil law	1
Lec 2	Taxonomy basic concepts in the field of civil law	1
Lec 3	Actors of civil law-the natural and legal persons. Legal capacity and capacity to act	1
Lec 4	Tangible and intangible-conditions legal protection	1
Lec 5	Right Commission-invented and judicial protection rights qualities	1
Lec 6	General characteristics right in rem	1
Lec 7	Economic and legal ownership concept. The content and scope of property rights. The acquisition and loss of property ownership	1
Lec 8	The limited rights in rem and their characteristics	1
Lec 9	The right to property and its protection	1
Lec 10	Commitments-creature, content and subject matter into a contractual relationship	
Lec 11	The legal status creditor and debtor-rules and conditions Legal liability	1
Lec12	The contract of sale on the market economic	1
Lec 13	Agreement on the use of goods	1
Lec14	Agreement on relations credit	1

	Total hours	15
Form of classes class		Number of hours
CI1	General characteristics civil contracts	2
CI2	The types of contracts governed by the code of conduct aviation	2
CI3	Agreements and their special characteristics-modes and forms conclude contracts. Conversion contracts. Performance of the contracts	2
CI4	Responsibility in the course non economic	2
CI5	Agreement on representation	2
CI6	Agreement for the marketing of goods	2
CI7	Agreement in the investment	2
	Total hours	15
Form of classes - laboratory		
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 by information N2. multimedia presentation N3. lecture by have		

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_W05	written examination
PRIMARY AND SECONDARY LITERATURE		
PRIMARY LITERATURE:		
<p>[1] Frankowski S., <i>Introduction to the Polish Law</i>, Wyd. Kluwer Law International, Warszawa 2005</p> <p>[2] Kienkowska D. (Ed.), <i>The Polish Law Collection. Business Law</i>, Warszawa 2004</p> <p>[3] Lewandowski P., <i>Angielski od podstaw – Prawo</i>, Wyd. Led, warszawa 2012</p> <p>[4] Gil I., Marszałkowska-Krześ E., <i>Code of civil procedure</i>, Wyd. Wolters Kluwer Warszawa 2011</p> <p>[5] <i>”Handbook of Polish Law”</i>, Wyd. szkolne PWN Warszawa 2011</p>		
SECONDARY LITERATURE:		
<p>[1] <i>Kodeks cywilny Civil Code – wydanie dwujęzyczne</i>, Wyd. Wolters Kluwer warszawa 2011</p> <p>[2] Wolter A. i in., <i>Prawo cywilne, zarys części ogólnej</i>, warszawa 2002</p> <p>[3] Rossini C., <i>English as a legal Language</i>, London 1998</p> <p>[4] Lewandowski J., <i>Prawo cywilne</i>, Warszawa 2000</p>		
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)		
<p style="text-align: center;">Aldona- Małgorzata Dereń</p> <p>aldona.deren@pwr.wroc.pl</p>		

MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
... Civil law
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Business Information Systems (BIS)**.

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)				
PEK_W05	K2_ZARZ_W12 K2_ZARZ_W01 K2_ZARZ_W10	C1 C2 C3	Lec4 Lec5 lec6 lec7 Lec8 Lec9 Lec 10 Lec11 Lec12 Lec13 Lec14 Lec15 C11 C12 C13 C14 C15 C16 C17	N1, N2, N3
				N2
PEK_U01 (skills)				
PEK_U02	K2_ZARZ_U20 K2_ZARZ_U01 K2_ZARZ_U16 K2_ZARZ_U05	C2 C3	lec5 lec7lec9lec10Lec11lec12 Lec13 lec14 Lec15 C11C12 C13 C14 C15 C16C17	N1, N2, N3
				N2
PEK_K01 (competences)	K2_ZARZ_K07 K2_ZARZ_K09	C3	Lec4 Lec5 Lec9 Lec10 Lec11Lec12 Lec13 Lec14 Lec15 C11 C12 C13 C14 C15 C16 C17	N2

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish ...Prawo handlowe.****Name in English Commercial law****Main field of study (if applicable): Management****Specialization (if applicable): Business Information Systems (BIS).****Level and form of studies: 1st/ 2nd* level, full-time / part-time*****Kind of subject: obligatory****Subject code PRZ2203W****Group of courses NO***

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
Number of hours of total student workload (CNPS)	30				
Form of crediting	Examination / 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	0,5				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge bases rights

C1 The object is to illustrate the importance of commercial law in the field taking up and running a business

C2 In the course is explained by courses and is characterized by organizational forms-legal taking up and pursuit of economic activities, guided by the study within the scope and the future professional practice graduates

C3 In the course courses in detail the content of the legal framework related to the taking up and conduct of business

SUBJECT OBJECTIVES

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01

- he is aware of the methods of analysis and ways knowledge representation. He is aware of specialist advanced methods and tools for data collection, analysis and presentation of data.

relating to skills:

PEK_U01

- it can chosen and applied formal methods as well as intelligent techniques and advanced tools in the analysis and data exploration of business

relating to social competences:

PEK_K06

is prepared to initiate changes in the workplace and participation in their planning and implementation. It can think and act in a red

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	The concept of commercial law-taxonomy sources of commercial law	2
Lec 2	Taxonomy basic concepts of the law on freedom of economic activity: concept of economic activities, the concessions regulated activities etc.	2
Lec 3	The company-taxonomy types of enterprises and criteria for their awards	2
Lec 4	Company law-commercial partnerships and equity in circulation	2
Lec 5	General characteristics a limited liability company. The term capital-types in the company capital z o.o. and their importance in activity of the company	2
Lec.6	Responsibility to the authorities company for the obligations on the market economic-civil liability, criminal, administrative, tax and fiscal	2
Lec 7	Joint Stock Company-rules and conditions formation. Responsibility founders	2
Lec 8	Shares-types, rules for the marketing shares. Conditions for acquiring shares	2
Lec 9	Taxonomy kinds of securities and their characteristics	2
Lec 10	The procedure results and the conditions for its application	2
Lec 11	The investigation corrective	2

Lec.12	Right to protect free competition	2
Lec. 13	Judicial system operators. Mediation as an instrument economic settlement of disputes	2
Lec.14	Basis of the business environment in the European Union	2
Lec.15	The terms and conditions of establishment in the area of the European Union	2
	Total hours	30
	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. lecture by information		

N2. multimedia presentation

N3. lecture by hale 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
	PEK_W01	written examination

P=1

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] „The Commercial Companies Code, Wyd. C.H.Beck, Warszawa 2010
[2] Bińkowska M., Niemirska-Fido K., Richard A. Walawader, The Bankruptcy and Reorganistation Law, Wyd. C.H. Beck, Warszawa 2010
[2]Koniczna-Purchała A., Practical english for lawyers, Wyd. C.H. Beck, Warszawa 2009
żga E., The great dictionary of law and economic, Wyd. C.H.Beck, Warszawa 2009
aślan H., Jaślan J., Słownik terminologii prawniczej i ekonomicznej angielsko-polski, l. C.H. Beck, Warszawa 2009
idyba A., Prawo handlowe, Wyd. C.H.Beck, Warszawa 2011
[6]„Prawo spółek handlowych”, t.I i II, Wyd. C.H.Beck, Warszawa 2012

SECONDARY LITERATURE:

- [1] Prawo handlowe. Teksty ustaw”, Wyd. C.H.Beck, Warszawa 2012
[2]Kuraś A. Kuros S., Toczek M., Spółki osobowe. Prawo spółek, Wyd. Difin, Warszawa 2012
[3]Zdanikowski P., Prawo udziałowe w spółce z.o.o., Wyd. Difin, Warszawa 2011
[4]Adamik A., Kształtowanie konkurencyjności i przewagi konkurencyjnej małych i średnich przedsiębiorstw, Wyd.C.H.Beck, Warszawa 2011
[5]Sitkowska K., Stepień T., Problematyka spółek ze szczególnym uwzględnieniem odpowiedzialności cywilnej i karnej, Wyd. Wolters Kluwer, Warszawa 2011
[6]„Prawo handlowe. Zbiór przepisów”, Wyd. Wolters Kluwer, Warszawa 20112

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
... Commercial law
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
AND SPECIALIZATION **Business Information Systems (BIS)**

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)	K2_ZARZ_W12 K2_ZARZ_W01 K2_ZARZ_W10 K2_ZARZ_W07	C1 C2 C3	Lec1 lec2 lec3 lec4 lec5 lec6 lec7 lec8 lec9 lec.10	N1, N2, N3
PEK_U01 (skills)	K2_ZARZ_U20 K2_ZARZ_U01 K2_ZARZ_U16 K2_ZARZ_U05	C1 C2 C3	lec7 lec8 lec9 lec.10	N1, N2, N3
PEK_K06 (competences)	K2_ZARZ_K07 K2_ZARZ_K09	C1 C2 C3	Lec 2 lec4 lec5 lec6 lec7 lec10 lec14	N1, N2, N3 N2

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

Faculty of Computer Science and Management**SUBJECT CARD****Name in Polish: Psychologia w organizacji****Name in English: Organizational Psychology****Main field of study (if applicable): Management****Specialization (if applicable): ...Business Information Systems****Level and form of studies: 2nd* level, full-time****Kind of subject: obligatory****Subject code: PSZ2201W****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

1. Main ideas about psychology as a science.
- 2.
- 3.

SUBJECT OBJECTIVES

- C1 Present a picture of people working in organization from the psychological point of view and give the knowledge of the main psychological theories and models which can be applied in an organization
- C2 Give the knowledge about individual behaviour and teamwork in organization.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 The student has a knowledge about motivation, group dynamic, social influence and leadership

PEK_W02 The student can identify the main determinants which influence the effective work in organization

...

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	Learning about organizational behaviour – psychological perspective	2
Lec 2	Personality and attitudes	2
Lec 3	Perception and attribution	2
Lec 4	Individual problem-solving styles	2
Lec 5	Learning and reinforcement	2
Lec 6	Work motivation	2
Lec 7	Goal setting	2
Lec 8	Work stress	2
Lec 9	Dynamics within and between group.	2
Lec 10	Influence – Robert Cialdini’s approaches to the idea	2
Lec 11	Leadership	2
Lec 12	Introduction to the theory of conflict	2
Lec 13	Negotiation	2
Lec 14	Colloquium	2
Lec 15	Summary and final discussion	2
		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. Lecture
N2. Multimedia presentations
N3. Discussing the problems suggested by students during the 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] Slocum, J. W., Hellriegel, D., (2010) *Principles of Organizational Behavior*, Boston: South Western Publisher (International Edition)

[2] Cialdini, R. B., *Influence. Science and Practice* Boston: Allyn and Bacon

[3]

SECONDARY LITERATURE:

[1] Hellriegel, D., Slocum, J. W., Woodman, R. W. (1999) *Organizational Behavior*, St Paul & others: West Publishing Company

[2] Lewicki, R. J., Saunders, D. M., Barry, B. (2010) *Negotiation. Reading, Exercises and Cases*, Boston: McGraw-Hill (International Edition)

[3] Cameron, E. & Green, M. (2005) *Making sense of change management* London: Kogan Page

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Organizational Psychology
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)	K2_ZARZ_W11, K2-ZARZ_W12	C1, C2	Lec. 1 – Lec 13, Lec 15	N1, N2, N3
PEK_W02	K2_ZARZ_W11, K2-ZARZ_W12	C1, C2	Lec 1 – Lec 13, Lec 15	N1, N2, N3
...				
...				
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 English: **Process Management**
Name in Polish: *Zarządzanie procesowe*
Main field of study: **Management**
Specialization: **Business Information System (BIS)**
Level and form of studies: **2nd level**
Kind of subject: **obligatory**
Subject code: **ZMZ1201W**
Group of courses: **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
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	0.5				

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge of management concepts.
2. Basic knowledge of business and enterprise structures.

SUBJECT OBJECTIVES

- C1. The main objective of the course is to familiarize the students with the basic terms and concepts of process management and to present them the knowledge on identification, description, modelling, analysis and evaluation of processes.
- C2. The course introduces also students with the concepts, methods and architectures of process management modelling and implementation of models in organisations.
- C3. The students are expected to develop skills on process identification and design.

SUBJECT EDUCATIONAL EFFECTS*relating to knowledge:*

- PEK_W01 - Student knows aims, notations, methods and tools for structuring, modelling and analysis of business processes. Student knows basic approaches for structure and object-oriented modelling in order to analyse organisations and information systems.
- PEK_W02 - Student knows fundamentals of management problems identification and analysis with business information systems and also is able to formulate requirements for such systems. Additionally student develops basic knowledge for information systems' implementation projects, especially in BPM area.

relating to skills:

PEK_U01 -	Student is able to use structure and object-oriented methods and techniques for identification and analysis of business processes in order to specify and design structure and information systems for process-oriented management.
<i>relating to social competences:</i>	
PEK_K01 -	Student is prepared to initiate changes in organisations and to participate in planning and implementation, particularly as regard process management approaches. Student is able to predict multi-aspect effects of changes being introduced in organisations and is able to think and act in an entrepreneur way.

PROGRAMME CONTENT

Form of classes – lecture		Number of hours
Lec 1	Introductory lecture. Definition of business process. Types of business processes. Functional orientation versus process orientation in management. Evolution of the process management approaches in a history of management.	2
Lec 2	Idea of process orientation in management. Reasons and aims of process management implementation on organizations. Characteristic features of processes in process oriented organizations. Models of process management.	2
Lec 3	Planning the process management implementation. The techniques used to processes design.	2
Lec 4	Measurement and evaluation of processes. Reasons of measuring processes. Selecting a set of process measures. Process monitoring methods and process evaluations methods.	2
Lec 5	Implementing the process management in total quality management organizations.	2
Lec 6	The idea of Business Process Reengineering (BPR).	2
Lec 7	Applying the ideas of lean management, benchmarking and outsourcing in process oriented organizations.	2
Lec 8	Test.	1
	Total hours	15
Form of classes – class		Number of hours
Cl 1		
	Total hours	
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. Lecturing with multimedia - computer presentation.
 N2. Case studies.
 N3. Discussions and comparative study.

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, PEK_U01	Final test

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Pietroń, R., *Process management*, Wrocław Univ. of Technolgy, PRINTPAP Łódź 2011.

SECONDARY LITERATURE:

- [1] Bitkowska A., *Zarządzanie procesami biznesowymi w przedsiębiorstwie*, VIZJA PRESS & IT, Warszawa.2009 (in Polish).
 [2] Grajewski P., *Organizacja procesowa*, PWE, Warszawa 2007 (in Polish).
 [3] Hammer M., Champy J., *Reengineering the Corporation. A Manifesto for Business Revolution*. Jossey-Bass Inc.,Publisher. 1993.
 [4] Hammer M., *Beyond Reengineering. How the Process-Centered Organization is Changing our Work and our Lives*. HarperCollins Publishers, Inc., New York 1996.
 [5] Jacka, J. M., *Business process mapping: improving customer satisfaction*, New York, John Wiley & Sons.2002.
 [6] Kaplan R., S., Norton D.P., *The Balanced Scorecard. Translating Strategy into Action*, Harvard Bus. School Press 1996.
 [7] Kasprzak T., (red.), *Modele referencyjne w zarządzaniu procesami biznesu*, Wyd. Difin, Warszawa 2005 (in Polish).
 [8] Pacholski L., Cempel W., Pawlewski P., *Reengineering. Reformowanie procesów biznesowych i produkcyjnych w przedsiębiorstwie*, Wyd. Polit. Poznań 2009 (in Polish).
 [9] Rummler G.A., Brache A.P., *Improving performance. How to manage the white Space on the Organization Chart*. Jossey-Bass Inc.,Publisher, 1995.
 [10] Scheer A.-W., *ARIS - business process modeling*, Springer-Verlag, Berlin, 2000.
 [11] Van der Aalst W., et al. (eds), *Business process management: models, techniques, ...*, Springer, Berlin, 2002.
 [12] Selected papers from: professional journals: *Business Process Management Journal, Journal of Operations and Production Management*”, *Journal of Quality and Reliability Management*”, *The TQM Magazine, Quality Progress*.
 [13] Scheer A.-W., et al. (eds), *Business process excellence: ARIS in 2002 practice*, Springer-Verlag, 2002.
 [14] Weske, M., *Business process management:concepts, languages, architectures*. Springer, Berlin 2007.

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

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Process Management
 AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY **Management**
 AND SPECIALISATION **Business Information Systems (BIS)**

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)	K2_Zarz_W04 S2_BIS_W04 S2_BIS_W05	C1, C2, C3	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N3
PEK_W02	K2_Zarz_W06 K2_Zarz_W07 K2_Zarz_W14	C1, C2, C3	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N3
PEK_U01 (skills)	S2_BIS_U04 K2_Zarz_U15 K2_Zarz_U16	C1, C2, C3	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N3
PEK_K01 (competences)	K2_Zarz_K05 K2_Zarz_K06	C1, C2, C3	Lec 1, Lec 2, Lec 3, Lec 4, Lec 5, Lec 6, Lec 7	N1, N2, N3

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

*** - from table above

FACULTY of **Computer Science and Management** / DEPARTMENT **Management****SUBJECT CARD****Name in Polish** Logistyka**Name in English** **Logistics****Main field of study (if applicable):** Management**Specialization (if applicable):** **Business Information Systems****Level and form of studies:** 2nd level, full-time**Kind of subject:** obligatory**Subject code** ZMZ1202W**Group of courses** NO

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	15				
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	0,5				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. **Basic knowledge of management**

SUBJECT OBJECTIVES

C1 Getting by the students basic knowledge about the area of logistics in business organizations.

C2 Understanding the issues that are related to the area of logistics, including contemporary issues such as Just in Time, resource planning and electronic procurement.

C3 Ability of analysis, measurement and monitoring of supply chain.

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEK_W01 has structured knowledge of the supply chain and incorporates recent developments in logistics management

PEK_W02 is aware of the importance of logistics processes in performance of business organizations

relating to skills:

PEK_U01 has the ability to identify the factors influencing the supply chain

PEK_U02 has the ability to carry out economical calculations, which are the base to assessing the cost-effectiveness of the solutions used in the supply chain

relating to social competences:

PEK_K01 properly identify and resolve dilemmas related to the logistics profession

Form of classes - lecture		Number of hours
Lec 1	Definitions and Concepts of Logistics	2
Lec 2	Logistics customer service	4
Lec 3	Supply chain management (theoretical basis)	4
Lec 4	Supply chain strategies and analysis	4
Lec 5	Test	1
-		
	Total hours	15
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. [informative lecture](#)
 N2. [multimedia presentation](#)
 N3. [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	PEK_W01	test
P2		
P3		
P=1		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Quayle M., Jones B., *Logistics: an Integrated Approach*, Liverpool Business Publishing, 2002
 [2] Grzybowska K., Golińska P. (eds.), *Selected logistics problems and solutions: monograph*, Publishing House of Poznan University of Technology, 2011
 [3] Fertsch M., Grzybowska K. (eds.), *Logistics in the enterprises - selected aspects: monograph*, Publishing House of Poznan University of Technology, 2010

SECONDARY LITERATURE:

- [1] Coyle J.J., Bardi E. J., Langley C.J., (red.) Danuta Kempny, *Zarządzanie logistyczne*, Warszawa, Polskie Wydawnictwo Ekonomiczne, 2010

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Logistics
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)	S2_BIS_W02	C1, C2, C3	Lec1, Lec2, Lec3, Lec4	N1, N2, N3
PEK_W02	S2_BIS_W02	C1, C2, C3	Lec1, Lec2, Lec3, Lec4	N1, N2, N3
-				
-				
PEK_U01 (skills)		C1, C3	Lec1, Lec3, Lec4	N1, N2, N3
PEK_U02		C2, C3	Lec1, Lec3, Lec4	N1, N2, N3
-				
PEK_K01 (competences)	K2_ZARZ_K04 K2_ZARZ_K06	C1, C2, C3	Lec1, Lec2, Lec3, Lec4	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 **Koncepcje zarządzania**

Name in English **Contemporary Management**

Main field of study (if applicable): Management

Specialization (if applicable): **Business Information systems**

Level and form of studies: 2nd level, full-time

Kind of subject: obligatory

Subject code **ZMZ1228**

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	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	0,5	-	-	-

*delete as applicable

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

-

SUBJECT OBJECTIVES

To ensure fundamental knowledge (including application aspects) about:

C1. schools and approaches in the organization and management theory,

C2. management methods and concepts,

C3. organizational effectiveness,

C4. complex, dynamic, unpredictable and global environment of contemporary organizations.

To ensure fundamental skills to:

C5. choose, justify and apply the management methods and techniques when complex management and substantive issues in the organization are identified, analyzed and solved

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 - has a basic knowledge about schools and approaches in the organization and management theory

PEK_W02 - has expanded knowledge about management methods and concepts

PEK_W03 - identifies key management issues

PEK_W04 – understands the organizational efficiency concept

PEK_W05 – has expanded knowledge about organizational environment

Relating to skills:

PEK_U01 –can (at basic level) choose, justify and apply the methods and techniques to identify, analyze and solve complex management and substantive issues in the organization

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 prepared to be independent and flexible in finding and selecting methods and techniques for dealing with management and substantive issues

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec1-2	Classical management concepts: scientific management approach, general administrative theory, behavioral approach, systems theory, contingency approach, New Wave theory, postmodernism in management	4
Lec3	Challenges for Management in a Global Environment	2
Lec4	Change, Adaptability and Resiliency - Organizing for a Complex and Dynamic World	2
Lec5	Managing and Leading Today. Contemporary management concepts and methods	2
Lec6	Lean Management	
Lec7	Outsourcing	4
Lec8	Business Process Reengineering	2
Lec9	Time Based Management	2
Lec10	Benchmarking	
Lec11	Learning Organization	4
Lec12	Knowledge Management	2
Lec13	Network Organization.	2
Lec14	Virtual organization. Working in a Virtual Word	2
Lec15	Process Management	2
	Total hours	30

Form of classes - class		Number of hours
Cl 1	Introduction to management concepts	1
Cl 2-3	Classical management concepts today – case studies	4
Cl 4	Lean-oriented concepts – case studies	2
Cl 5	Change-oriented concepts – case studies	
Cl 6	Knowledge-oriented concepts – case studies	2
Cl 7	Concepts oriented towards inter-organizational cooperation – case studies	2
Cl 8	Market-oriented and quality-oriented concepts – case studies	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
C1	PEK_U01 PEK_K01-4	Scoring students' involvement and presentations during classes
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] Błaszczuk W., Metody organizacji i zarządzania, Wydawnictwo Naukowe PWN, Warszawa 2005
- [2] Brillman J., Nowoczesne koncepcje i metody zarządzania, PWE, Warszawa 2002.
- [3] Brzozowski M., Kopczyński T., Metody zarządzania, Wydawnictwo UE w Poznaniu, Poznań 2009.
- [4] Czekaj J., Metody organizacji i zarządzania, Wydawnictwo AE w Krakowie, Kraków 2007.
- [5] Easterby-Smith M., Thorpe R., Jackson P.R.: Management research, SAGE Publications, Los Angeles 2008.
- [6] Griffin R.W.: Management, Houghton Mifflin Company, New York 2008.
- [7] Hożej M., Struktury organizacyjne, Ossolineum, Wrocław – Warszawa - Kraków 2004.
- [8] Jones G.R., George J.M., Essentials of contemporary management, McGraw-Hill Irwin, Boston 2007 (2006).
- [9] Koźmiński A.K.: Management in transition, Difin, Warsaw 2008.
- [10] Koźmiński A.K., Piotrowski W. (red.), Zarządzanie. Teoria i praktyka, Wydawnictwo Naukowe PWN, Warszawa 2006
- [11] McKee A.: Management: a focus on leaders, Pearson, Boston 2012.
- [12] Messick D.M., Kramer R.M.: The psychology of leadership: new perspectives and research, Lawrence Erlbaum Associates, London 2005.
- [13] Robbins S.P., Coulter M.: Management, Pearson/Prentice Hall, 2009.
- [14] Zimniewicz K., Współczesne koncepcje i metody zarządzania, PWE, Warszawa 1999.

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Contemporary Management
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
Management
AND SPECIALIZATION BIS

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	K2_ZARZ_W04, K2_ZARZ_W05, K2_ZARZ_W08, K2_ZARZ_W10-11	C1	Lec 1-2	N1-4, N6
PEK_W02	K2_ZARZ_W04, K2_ZARZ_W05, K2_ZARZ_W08, K2_ZARZ_W10-11	C2	Lec1-2, Lec6-15	N1-4, N6
PEK_W03	K2_ZARZ_W06, K2_ZARZ_W09	C1-4	Lec1-15	N1-4, N6
PEK_W04	K2_ZARZ_W07	C3	Lec 1-2, Lec6-15	N1-4, N6
PEK_W05	K2_ZARZ_W03	C4	Lec3-4	N1-4, N6
PEK_U01	K2_ZARZ_U02, K2_ZARZ_U03, K2_ZARZ_U04, K2_ZARZ_U06-9, K2_ZARZ_U15-18	C2, C6	C11-8	N4-7
PEK_K01	K2_ZARZ_K01	C1-4	Lec 1-15, C11-8	N4-7
PEK_K02	K2_ZARZ_K02, K2_ZARZ_K04, K2_ZARZ_K06, K2_ZARZ_K07	C1-4	Lec 1-15, C11-8	N4-7
PEK_K03	K2_ZARZ_K08	C5-7	Lec 1-15, C11-8	N4-7
PEK_K04	K2_ZARZ_K05	C5-7	Lec 1-15, C11-8	N4-7

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

*** - from table above

FACULTY OF COMPUTER SCIENCE AND MANAGEMENT**SUBJECT CARD****Name in Polish** Etyka w zarządzaniu**Name in English** **Management Ethics****Main field of study (if applicable):** Management**Specialization (if applicable):** **Business Information systems****Level and form of studies:** 2nd level, full-time**Kind of subject:** obligatory**Subject code** ZMZ2201**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	credit with an exam	-	-	-	-
For group of courses mark (X) final course	-	-	-	-	-
Number of ECTS points	3	-	-	-	-
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

-

SUBJECT OBJECTIVES

C1. To deliver the basic conceptual foundations of business ethic theory.

C2. To explore the ethical issues and challenges typically encountered by the corporations in dealing with different stakeholder groups.

C3. To deliver the basic knowledge (including application aspects) how to manage ethics through specific tools, techniques practices and processes.

C3. To encourage making thoughtful judgments when faced with ethical complexity in business practice.

SUBJECT EDUCATIONAL EFFECTS**Relating to knowledge:**

PEK_W01 - reasons ethically by drawing on four major theories of ethics: utilitarianism, Kantian ethics, theories of justice, and an ethic of care

PEK_W02 - understands the ethical concepts of happiness, rights, justice, and caring

PEK_W03 - illustrates ethical issues and challenges typically encountered by the corporations in dealing with different stakeholder groups

PEK_W04 - knows specific tools, techniques and processes of managing ethics

Relating to social competences:

PEK_K01 – is prepared to behave in a professional and ethical manner, to recognize and formulate the ethical dilemmas associated with his/her own and others' work; to seek appropriate solutions and opportunities to correct deficiencies in their attitudes and behaviors in the workplace

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to business ethics. Framing business ethics	2
Lec 2-3	Evaluating business ethics. Making decisions in business ethics	4
Lec 4-5	Employees and business ethics	4
Lec 6-7	Consumers and business ethics	4
Lec 8	Shareholders and business ethics	2
Lec 9	Suppliers and competitors, and business ethics	2
Lec 10	Finance and business ethics	2
Lec 11	Civil society and business ethics	2
Lec 12	Government, regulation and business ethics	2
Lec 13	Cross-cultural differences and ethics	2
Lec 14	Managing business ethics. Codes of ethics.	2
Lec 15	Final assessment	2
	Total hours	30

TEACHING TOOLS USED

- N1. Traditional lecture with multimedia presentations
- N2. Case studies
- N3. Discussion of selected issues
- N4. Self-study: final assessment preparation

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_W01-4, PEK_K01	scoring students' involvement during lecture
F2	PEK_W01-4, PEK_K01	written assessment
C = F1 (up to 10%) + F2		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Crane A., Dirk M.: Business ethics, Oxford University Press, New York 2007.
- [2] Chrysidis G.D., Kaler J.H.: Essentials of business ethics, McGrawhill, 1996.
- [3] Sternberg E.: Just Business, Oxford University Press, New York 2002.

SECONDARY LITERATURE:

- [1] Budgol M.: Gry i zachowania nieetyczne w organizacji, Difin, Warszawa 2007.
- [2] Bourke V. J.: Historia etyki, przeł. A. Białek, Toruń, Krupski i S-ka, 1994.
- [3] Ferrell O. C., Business ethics: ethical decision making and cases, Houghton Mifflin Co., New York 2005.
- [4] Gini A. [ed.]: Case studies in business ethics, Pearson Pretice Hall, Upper Saddle River 2005.
- [5] Giacalone R.A., Jurkiewicz C.L., Dunn C. [ed.]: Positive psychology in business ethics and corporate responsibility, Information Age Pub., Greenwich 2005.
- [6] MacIntyre A.: Krótka historia etyki, Warszawa, PWN, 1995.
- [7] Murphy P.E., Laczniak G.R.: Marketing ethics : cases and readings, Pearson Prentice Hall, Upper Saddle River 2006.
- [8] Pratley P.: Etyka w biznesie, Gebethner i Ska, Warszawa 1998.
- [9] Singer P.: Przewodnik po etyce, Warszawa, Książka i Wiedza, 2002.
- [10] Styczeń T.: Wprowadzenie do etyki, Lublin, 1995.
- [11] Klimczak B.: Etyka gospodarcza, Wyd. AE im. Oskara Langego we Wrocławiu, Wrocław 2006.
- [12] Rybak M.: Etyka menedżera: społeczna odpowiedzialność przedsiębiorstwa, PWN, Warszawa 2004.
- [13] Sójka J. [red.]: Etyka biznesu po „Enronie”, Wyd. Fundacji Humaniora, Poznań 2005.
- [14] Tatarkiewicz W.: Historia filozofii, t.1-3, PWN, Warszawa 2005.

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
Management Ethics
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	K2_ZARZ_U05, K2_ZARZ_W01, K2_ZARZ_W04, K2_ZARZ_W11, K2_ZARZ_U02, K2_ZARZ_U06, K2_ZARZ_K03	C1	Lec1-3	N1-4
PEK_W02	K2_ZARZ_W01, K2_ZARZ_W04, K2_ZARZ_W11, K2_ZARZ_U02, K2_ZARZ_U06, K2_ZARZ_K03	C1	Lec1-3	N1-4
PEK_W03	K2_ZARZ_W01, K2_ZARZ_W04, K2_ZARZ_W11, K2_ZARZ_U02, K2_ZARZ_K03	C2-3	Lec4-12	N1-4
PEK_W04	K2_ZARZ_W08, K2_ZARZ_W01, K2_ZARZ_W04, K2_ZARZ_W11, K2_ZARZ_U02, K2_ZARZ_K03	C1,3	Lec1-14	N1-4
PEK_K01	K2_ZARZ_K09, K2_ZARZ_K04, K2_ZARZ_K05, K2_ZARZ_K07	C1-C4	Lec1-14	N1-4

Faculty of Computer Science and Management					
SUBJECT CARD					
Name in Polish Zarządzanie Strategiczne					
Name in English Strategic Management					
Main field of study (if applicable): Business Information Systems					
Specialization (if applicable):					
Level and form of studies: 2nd* level, full-time					
Kind of subject: obligatory					
Subject code ZMZ2204					
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)	90				90
Form of crediting	crediting with grade				crediting with grade
For group of courses mark (X) final course					
Number of ECTS points	3				3
including number of ECTS points for practical (P) classes					3
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.

SUBJECT OBJECTIVES

C1 The course discusses in general the essentials of strategic elements. Other elements of the course are instruments and methods, which can be used for strategic analyse

C2 The students will cover the main idea of strategic management. They should obtain the ability to use methodology and concepts of strategy procedure.

SUBJECT EDUCATIONAL EFFECTS

Relating to knowledge:

PEK_W01 Students know the idea of strategic management

PEK_W02 Knowledge about variety of strategies

PEK_W03 Familiarity with instruments (concepts, methods, models) of estimation a strategy

Relating to skills:

PEK_U01 Student is able to seek and interpret knowledge of strategic management

Relating to social competences:
 PEK_K01 Acquire an enthusiastic approach for business activity

Form of classes - lecture		Number of Hours
Lec 1	Genesis and definitions of a strategy	3
Lec 2	Mission statements - , definitions and functions	2
Lec 3	Strategic analyze - environment	2
Lec 4	Internal environment analyze	2
Lec 5	Strategic options at the strategic business units (SBU) level	2
Lec 6	Strategic choice models	2
Lec 7	Strategy implementation	2
	Total hours	15

Form of classes - seminar		Number of hours
Sem 1	Genesis of strategic management.	1
Sem 2	Models of strategy	2
Sem 3	Strategic management – main schools	2
Sem 4	Business concept – mission statement	2
Sem 5	Enterprise environment	2
Sem 6	Review of management concepts (strategic alliances, benchmarking, creativity and innovations)	3
Sem 7	Balanced score card	2
Sem 8	Strategy implementation	2
	Total hours	15

TEACHING TOOLS USED

- N1. Informational lecture
- N2. Multimedia presentations
- N3. Detailed lecture

EVALUATION OF SUBJECT EDUCATIONAL EFFECTS ACHIEVEMENT

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

end)		
P	K2_ZARZ_W03 K2_ZARZ_W07	Written test
P	K2_ZARZ_U02 K2_ZARZ_U03	Seminar performance

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Świda A, Strategic Management, Wrocław University of Technology, Wrocław 2011

SECONDARY LITERATURE:

[1] Porth S., J., Strategic Management – a cross-functional approach, Prentice Hall 2003

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR
SUBJECT
Strategic Management
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***
Knowledge				
PEK_W01	K2_ZARZ_W03 K2_ZARZ_U09 K2-ZARZ-U03	C1, C2, C3	Wy1, Wy2, Wy3..	N1, N2, N3
PEK_W02	K2_ZARZ_W05 K2_ZARZ_W03 K2_ZARZ_U09	C2, C3	Wy4, Wy5	N1, N2, N3
PEK_W03	K2_ZARZ_U08 K2_ZARZ_U04	C1, C3	Wy 4, Wy5, Wy6, Wy7	N1, N2, N3
Skills				
PEK_U01	K2_ZARZ_U06 K2_ZARZ_U03 K2_ZARZ_U18	C2, C3	Se1, Se2,, Se3, Se4, Se5, Se7, Se8	N1, N2, N3
Competences				
PEK_K01	K2_ZARZ_U02 K2_ZARZ_K06 K2_ZARZ_K02	C1, C2, C3	Wy1, Wy2, Wy3, Wy4, Se2, Se3, Se4, Se5, Se6, Se7, Se8	N1, N2, N3

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

*** - from table above