FACULTY OF COMPUTER SCIENCE AND MANAGEMENT / DEPARTMENT…
SUBJECT CARD
Name in Polish Modelowanie i analiza biznesowa
Name in English Business Modeling and Analysis
Main field of study (if applicable):   Computer Science
Specialization (if applicable): Computer Engineering
Level and form of studies: 1st/ 2nd* level, full-time / part-time*
Kind of subject: obligatory / optional / university-wide*
Subject code INZ0152Wc
Group of courses YES / 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)	45	45			
Form of crediting	Examination / crediting with grade*	Examination / crediting with grade*	Examination / crediting with grade*	Examination / crediting with grade*	Examination / crediting with grade*
For group of courses mark (X) final course	x				
Number of ECTS points	3				
including number of ECTS points for practical (P) classes	1				
including number of ECTS points for direct teacher-student contact (BK) classes	1,8				

*delete as applicable

 PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES
1. None
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SUBJECT OBJECTIVES
C1 Educating the abilities of using business processing modeling and analysis methods in computer engineering practice.
C2 Providing the knowledge of relationships between business processes, real objects, models and business process life cycle. Providing the knowledge of using deterministic and stochastic models in business modeling and analysis.
C3 Educating the abilities of using diagrams, charts and other formal and practical tools in analysing and modeling of business processes.

SUBJECT EDUCATIONAL EFFECTS
relating to knowledge:
PEK_W01 Student has a knowledge about business process life cycle, relationships between business processes, real objects and models, business analysis tools and charts, business process cost metrics and practical applications of them.
PEK_W02 Student knows contemporary methods and tools for business modeling and analysis.
relating to skills:
PEK_U01 Student has an ability to understand and analyses business processes in computer engineering.
PEK_U02 Student is able to identify and to describe main parts of business processes and life-cycles. He has ability to practical use of business process analysis tools.
relating to social competences:
PEK_K01 Student is able to cooperate in modeling and analysis business processes.
PEK_K02 Student has competence for solving ethical and society problems related to contemporary business processes in computer engineering.

PROGRAMME CONTENT

Form of classes - lecture		Number of hours
Lec 1	Introduction to business modeling and analysis.	2
Lec 2	Business process and information systems. Relationships between business processes, real objects and models. Business process life cycle. Analytical modeling versus simulation. Using IDEFF format for the business process mapping	2
Lec 3	Business process cost metrics. Analytical business process modeling. Steps of modeling. Classification of business process models Deterministic and stochastic models. Simulation and output analysis. case study of the business process modeling.	2
Lec 4	Business processes and software design. Formal description, analysis and tools. UML, Petri nets and other solutions.	2
Lec 5	Business analysis tools and charts. Part 1. Activity diagram, block diagram, business process diagram, business use-case diagram, cause and effect diagram, class diagram, communication diagram, data flow and context diagram, decision table. Examples in computer engineering.	2
Lec 6	Business analysis tools and charts. Part 2. Entity relationship diagram, flowchart, functional decomposition chart, FURPS+, object diagram, Pareto diagram, requirements attribute table, requirements traceability matrix, role map, root-cause analysis work plan, sequence diagram, state machine diagram . Examples in computer engineering.	2
Lec 7	Petri nets and business modeling and analysis. Structure, behavior transition. Reachability graphs. Typical structures for business analysis. Extending Color and time Petri Nets in business modeling. Structural and simulation-based analysis.	2
Lec 8	Final test	1
	Total hours	15

Form of classes - class		Number of hours
Cl 1	Business process life cycle. Theoretical solutions, exercises and examples.	2

Cl 2	Business process cost metrics . Theoretical solutions, exercises and examples.	2
Cl 3	Business processes and software design. Theoretical solutions, exercises and examples.	2
Cl 4	Business analysis tools. Theoretical solutions, exercises and examples.	2
Cl 5	Business analysis charts. Theoretical solutions, exercises and examples.	2
Cl 6	Petri nets and business modeling and analysis . Theoretical solutions, exercises and examples.	2
Cl 7	UML. Theoretical solutions, exercises and examples.	2
Cl 4	Final test.	1
	Total hours	15

Form of classes - laboratory		Number of hours
Lab 1		
Lab 2		
Lab 3		
…		
	Total hours	

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

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

TEACHING TOOLS USED
N1. Multimedia presentations N2. The course Web page N3. Electronics and paper books and library references

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		Short tests.

F2		Evaluation of exercises, activity, classes final test.
F3		Final test
C=F1+F2+F3		

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Gooma H.: Software Modeling and Design: UML, Use cases, Patterns and Software Architectures. Cambridge University Press 2011.
[2] Aalst W.V.D., Stahl Ch.: Modeling Business Processes: A Petri Net-Oriented Approach. MIT Press 2011.
[3] Daoust N.: UML Requirements Modeling For Business Analysts. Technics Publications, LLC 2012.
[4] Podeswa H.: The Business Analyst's Handbook. Course Technology PTR 2008.

SECONDARY LITERATURE:

[1] Eriksson H.E., Penker M.: Business Modeling with UML: Business Patterns at work. Wiley & Sons, Fall 1999.
[2] Carkenord B.: seven Steps to Mastering Business Analysis. J. Ross Publishing 2008.

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

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MATRIX OF CORRELATION BETWEEN EDUCATIONAL EFFECTS FOR SUBJECT
…………………………
AND EDUCATIONAL EFFECTS FOR MAIN FIELD OF STUDY
………………………..
AND SPECIALIZATION ……………………………..

Subject educational effect	Correlation between subject educational effect and educational effects defined for main field of study and specialization (if applicable)**	Subject objectives***	Programme content***	Teaching tool number***
PEK_W01	K2INF _W03	C1-C3	Lec1-Lec7	N1, N2, N3
PEK_W02	K2INF _W03	C1-C3	Lec1-Lec7	N1, N2, N3
PEK_U01	K2INF _U06	C1-C3	Lec1-Lec7 Cl1- Cl7	N1, N2, N3
PEK_U02	K2INF _U06	C1-C3	Lec1-Lec7 Cl1- Cl7	N1, N2, N3
PEK_K01	K2INF _W03, K2INF _U06	C1-C3	Lec1-Lec7 Cl1- Cl7	N1, N2, N3
PEK_K02	K2INF _W03, K2INF _U06	C1-C3	Lec1-Lec7 Cl1- Cl7	N1, N2, N3

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

*** - from table above