



MODULE DESCRIPTION

Module code	ID1_ISI6
Module name	Inżynieria systemów informacyjnych
Module name in English	Information Systems Engineering
Valid from academic year	2012/13

MODULE PLACEMENT IN THE SYLLABUS

Subject	Computer Science
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	
Unit conducting the module	The Department of Computer Science
Module co-ordinator	Karol Wieczorek, MSc, Eng.
Approved by:	

MODULE OVERVIEW

Type of subject/group of subjects	Major <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	Polish
Module placement in the syllabus - semester	6th semester
Subject realisation in the academic year	Summer semester <i>(winter / summer)</i>
Initial requirements	The Fundamentals of Programming Engineering, Object-oriented Programming (Java), and Databases <i>(module codes / module names)</i>
Examination	Yes <i>(yes / no)</i>
Number of ECTS credit points	5

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	30		15	15	

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

Module target	The aim of the module is to familiarise students with the notions and principles of designing information systems; another aim is to master the skills which concern using the MVC pattern in the process of creating an implementation of an information system. Furthermore, the students are acquainted with the skills of applying JavaEE – JSP, Servlets, EL, and JavaBeans technologies. Finally, students become acquainted with various attacks on the Internet applications as well as the methods of preventing them.
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Effect symbol	Teaching results	Teaching methods (l/c/lp/other)	Reference to subject effects	Reference to effects of a field of study
W_01	Knowledge concerning the notion of an information system and the principles of the designing process as regards such system.	l	K_W15 K_W17	T1A_W03, T1A_W07, T1A_W10
W_02	Knowledge of designing patterns facilitating the process of software manufacturing.	l	K_W15	T1A_W03, T1A_W07
W_03	Knowledge concerning JavaEE technology as a tool which serves creating extended Internet applications.	l	K_W10 K_W11	T1A_W03, T1A_W07
W_04	Familiarising students with common Internet attacks and the methods of preventing them.	l	K_W10	T1A_W04, T1A_W07
U_01	The ability to design an information system.	p	K_U21	T1A_U07, T1A_U08, T1A_U10, T1A_U13, T1A_U15
U_02	The ability to create an extended business Internet application.	p	K_U16 K_U21	T1A_U07, T1A_U16
U_03	The ability of implementing an Internet application in Java technology (protected against common attacks).	l	K_U17	T1A_U15, T1A_U16
K_01	Teamwork.	p	K_K03 K_K05	T1A_K03, T1A_K04, T1A_K06

Teaching contents:

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Introduction to information systems; presenting basic notions.	W_01
2	Revising information concerning the process of creating software (UML diagrams), design patterns.	W_01, W_02
3	The architecture of a WWW application.	W_03
4	HTTP and HTTPS protocols.	W_04
5	Introduction to Java Servlets – implementing the logic of a business application.	W_03
6	JSP – implementing presentation layers.	W_03
7	'Division of duties' – the MVC pattern.	W_02, W_03
8	Java Beans components as construction elements concerning the logic of a business application.	W_01, W_03
9	'Desktop' or Internet applications? The advantages of the MVC model.	W_02
10	Expression Language – an alternative for complicated JSP tags.	W_02, W_03



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11	JavaServer Pages Non-Standard Tag Library - extending the possibilities of JSP.	W_03
12	Frameworks supporting creating applications based on the MVC model, part 1 – Struts.	W_02,W_03
13	Frameworks supporting creating applications based on the MVC model, part 2 – JSF.	W_02,W_03
14	The co-operation of an application with a database.	W_01,W_03
15	The most common attacks on Internet applications; protection methods.	W_04

Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	Creating a static Internet website in the HTML + CSS language.	U_03
2	Creating a simple Internet application using only Java Servlets.	U_03
3	Creating a simple Internet application using only dynamic JSP with standard JSP tags.	U_03
4	Separating the presentation layer from business logic – JSP + servlets.	U_03
5	Implementing an application according to the MVC pattern.	U_03
6	Modifying the presentation layer from the previous exercise through eliminating a Java code from JSP and replacing with JSTL tags.	U_03
7	Protecting an application from the previous exercise against popular attacks; a hacking attempt into the implemented application.	U_03

The characteristics of project assignments

The subject matter covers designing and implementing an information system for the selected industrial, commercial, and service branches. As part of the project, students ought to do the following:

1. Design a database storing the necessary data
2. Design and implement a business logic of the system (complete functionality)
3. Design and implement the presentation layer (user interaction tool – through an Internet browser or a graphical user interface for a desktop application)
4. Implement a system of protection against user's errors and hacking into an application
5. Prepare technological documentation of the project containing the application project (e.g. through UML diagrams), source code documentation (e.g. Javadoc), installation instruction (implementation) and operating the created system

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A written test
W_02	A written test
W_03	A written test
W_04	A written test
U_01	Obtaining a credit for the project based on technological documentation
U_02	Obtaining a credit for the project based on the submitted application
U_03	Obtaining a credit for laboratory classes based on reports from particular classes

STUDENT'S INPUT



ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	30
2	Participation in classes	
3	Participation in laboratories	15
4	Participation in tutorials (2-3 times per semester)	3
5	Participation in project classes	15
6	Project tutorials	15
7	Participation in an examination	2
8		
9	Number of hours requiring a lecturer's assistance	80 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS credit point=25-30 hours)</i>	3
11	Unassisted study of lecture subjects	10
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	
14	Unassisted preparation for laboratories	
15	Preparing reports	7
16	Preparing for a final laboratory test	
17	Preparing a project or documentation	15
18	Preparing for an examination	30
19	Preparing questionnaires	
20	Number of hours of a student's unassisted work	52 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS credit point=25-30 hours)</i>	2
22	Total number of hours of a student's work	132
23	ECTS credit points per module <i>1 ECTS credit point=25-30 hours</i>	5
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	67
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS credit point=25-30 hours)</i>	3