Name of the moduleitability Databases and technologies in internet Policy Pol			STUDY MODULE D	ESCRIPTION FORM			
Electrical Engineering (greenal academic, practical) (brak) 3 / 6 Electrical Engineering Subject offered in: Polish Course (computery, elective; Polish No. of readits No. of hours Electrical Subject Field full-time No. of credits 3 Status of the course in the study program (Basic, major, other) (university-wide, from another field) No. of credits Education areas and fields of science and art ECTS distribution (number and %) ECTS distribution (number and %) Education areas and fields of science and art ECTS distribution (number and %) 3 100% Education areas and fields of science and art ECTS distribution (number and %) 3 100% Responsible for subject / lecturer: Dr in2, Jarosław Jajczyk ermail; izrosław, jajczyk ECTS distribution (number and %) 3 100% 1 Knowledge Basic knowledge, skills and social competencies: 1 Skills Support browsers: The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Socia			ologies in Internet				
Elective path/specially Electrical and Computer Systems in Cycle of study: Subject offered in: Polish Course (compulsory, elective; obligatory Cycle of study: First-cycle studies Form of study (full-time_part-time) No. of readits No. of hours Lactorizer: 15 Classes: - Laboratory: 30 Project/seminars: No. of oredits Status of the course in the study program (Back, major, other) (university-wide, from another field) ECTS distudentor (number and %) Education areas and fields of science and art ECTS distudentor (number and %) ECTS distudentor (number and %) Education areas and fields of science and art ECTS distudentor (number and %) ECTS distudentor (number and %) Education areas and fields of science and art ECTS distudentor (number and %) ECTS distudentor (number and %) Education areas and fields of sciences J 100% J 100% J 100% Responsible for subject / lecturer: Driz, Jarostaw Jajczyk email; jarostaw, jajczyk @put.poznan.pl tel. 616652659 Elektry, with anotacory). J 100% 1 Knowledge Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Cocaprize							
Electrical and Computer Systems in Polish obligatory Cycle of study: First-cycle studies Form of study (full-time.part-time) full-time No. of hours Lecture: 15 Classes: Laboratory: 30 Project/seminars: No. of oredits Status of the course in the study program (Basic, major, other) (university-wide, from another field) (Drak) ECT 3 distribution (number and %). Education areas and fields of science and att (Drak) (Drak) ECT 3 distribution (number and %). 3 100%. 3	Elec	trical Engineerin	g	(brak)			
First-cycle studies full-time No. of hours No. of oredits Lecture: 15 Classes: - Laboratory: 30 Project/seminars: - 3 Status of the course in the study program (Basic, major, other) (university-wide, from another fields) (brak) ECTS distribution (number and %) Education areas and fields of science and art (brak) ECTS distribution (number and %) 3 100% Education areas and fields of sciences 3 100% 3 100% Technical sciences 3 100% 3 100% Responsible for subject / lecturer: Dr.iz. Jarostaw Jajczyk @put.poznan.pl iel of 16652659 ielektryczny ielektryczny i.elektryczny i.elektryczny <td>Elective</td> <td></td> <td>nd Computer Systems in</td> <td>-</td> <td></td>	Elective		nd Computer Systems in	-			
No. of hours No. of credits Lacture: 15 Classes: - Laboratory: 30 Project/seminars: - 3 Status of the course in the study program (Basic, major, other) (university-wide, from another field) (brak) Education areas and fields of solence and attechnical sciences 3 100% 3 100% Education areas and fields of solence and attechnical sciences 3 100% 3 100% Responsible for subject / lecturer: Drinz, Jaroslaw Jajczyk 3 100% 3 100% Incl. Jaroslaw Jajczyk (@put.poznan.pl tel. 616652659 Elektryczny ul. Piotrowo 3A, 60-965 Poznań 10 Knowledge Basic knowledge of computer science, the relational database model and programming in higt 1 Knowledge Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand their competencies Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational database in SQL server using Transact-SQL contains wives, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server s	Cycle of	f study:		Form of study (full-time,part-time)			
Lecture: 15 Classes: - Laboratory: 30 Project/seminars: - 3 Status of the course in the study program (Basic, major, other) (university-wide, from another field) (brak) Education areas and fields of science and at (brak) (brak) ECTS distribution (number and %) technical sciences 3 100% 3 100% Responsible for subject / lecturer: Dr in2: Jaroslaw Jajczyk and %) 3 100% Dr in2: Jaroslaw Jajczyk email; jaroslaw.jajczyk@put.poznan.pl tet. 616652659 Elektryczry 3 100% Ide. 616652659 Elektryczry ul. Piotrowo 3A, 60-965 Poznań Prerequisites in terms of knowledge of computer science, the relational database model and programming in higt level languages. 1 Knowledge Support browsers, The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Competencies. 3 Social competencies. Recognizes the importance of working tools in electrical engineering, the ability to expand the technology building dymamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational databases. Sample Implementation of the project web page containing ITML tage, cascading style shests, scirtes, Java Scirty and XUL flies.	First-cycle studies			full-time			
Status of the course in the study program (Basic, major, other) (university-wide, from another field) Status of the course in the study program (Basic, major, other) (university-wide, from another field) Education areas and fields of science and art (brak) Education areas and fields of science and art Education areas and fields of science and art technical sciences 3 100% Technical sciences 3 100% Responsible for subject / lecturer: Dr in2: Jaroslaw Jajczyk @put.poznan.pl tel. 166652659 Elektryczyy ul. Piotrowo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Basic knowledge of computer science, the relational database model and programming in higt level languages. 2 Skills Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand their corpect metalswills related to the creation of modern websites and designing relational databases. Sample Implementation of the project relational database in MS SOL Server using Transact-SOL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational features we	No. of h	ours			No. of credits		
(brak) (brak) Education areas and fields of science and at ETS distribution (number and %) technical sciences 3 100% Technical sciences 3 100% Responsible for subject / lecturer: Dr inz. Jarostaw Jajczyk emait: jarostaw Jajczyk emait: jarostaw Jajczyk Elektryczny ul. Piotrowo 3A, 60-965 Poznań 3 100% Prerequisites in terms of knowledge, skills and social competencies: 1 1 Knowledge Basic knowledge of computer science, the relational database model and programming in higt level languages. 2 Skills Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tag, cascading style sheets, scirtys, Java Sciript and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+, Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to	Lectur	e: 15 Classes	s: - Laboratory: 30	Project/seminars:	- 3		
Education areas and fields of science and art ECTS distribution (number and %) technical sciences 3 100% Responsible for subject / lecturer: 3 100% Dr in2. Jaroslaw Jajczyk email: jaroslaw.jajczyk@put.poznan.pl tel. 616652659 Elektryczny ul. 910trowo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Basic knowledge of computer science, the relational database model and programming in high level languages. 2 Skills Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand theil competencies. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Soript and XML files. The project relational databases in Algorithmic with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11+] 2. propose a method of data collection an	Status o	of the course in the study	program (Basic, major, other)	(university-wide, from another f	field)		
and %) technical sciences 3 100% Responsible for subject / lecturer: 3 100% Dr in2. Jaroslaw Jajczyk email: jaroslaw.jajczyk@put.poznan.pl tel. 616652659 Elektryczry ul. Piotrwo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Basic knowledge of computer science, the relational database model and programming in high level languages. 2 Skills Support browers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts. Java Script and XML files. The project relational database in SOL Server using Transact-SOL contain views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11+] 2. propose a method of data collection and define dependencies and constraints ass			(brak)		(brak)		
Technical sciences 3 100% Responsible for subject / lecturer: Dr in2. Jaroslaw Jajczyk email: jaroslaw Jajczyk @put.poznan.pl tel. 616652659 Elektryczny ul. Piotrowo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge 2 Skills 3 Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies: Recognizes the importance of working tools in electrical engineering, the ability to expand their competencies. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the roge period web page containing on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W10+, K_W11++] 3. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 3. choose the appropriate Internet technologies to the set of functional features website, use the SQL gueries - [K_U04+, K_U05+] 3. to design and exec	Education	on areas and fields of sci	ence and art				
Responsible for subject / lecturer: Dr inž. Jaroslaw Jajczyk email: jaroslaw jajczyk @put.poznan.pl tel. 616652659 Biektryczny ul. Piotrowo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Basic knowledge of computer science, the relational database model and programming in high level languages. 2 Skills 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scipts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11+1] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+1] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and ex	techr	nical sciences			3 100%		
Dr inz. Jarosław Jajczyk emai: jarosław jajczyk @put.poznan.pl tel. 616652659 Elektryczny ul. Piotrowo 3A, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Basic knowledge of computer science, the relational database model and programming in high level languages. 2 Skills 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competences. Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP. NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - (K_U04+, K_U05+] Social competencies: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - (K_U04+, K_U05+]	Technical sciences				3 100%		
Knowledge Basic knowledge of computer science, the relational database model and programming in high level languages. 2 Skills Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand their competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineerin	Dr inż. Jarosław Jajczyk email: jarosław.jajczyk@put.poznan.pl tel. 616652659 Elektryczny						
1 Knowledge level languages. 2 Skills Support browsers. The use of communication protocols. Algorithmic thinking. Collaboration in a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	Prere	quisites in term	s of knowledge, skills and	d social competencies:			
2 Skills a team (group of laboratory). 3 Social competencies Recognizes the importance of working tools in electrical engineering, the ability to expand thei competencies. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL gueries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	1	Knowledge	Basic knowledge of computer science, the relational database model and programming in high level languages.				
S competencies competences. Assumptions and objectives of the course: Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	2	Skills		ommunication protocols. Algorit	thmic thinking. Collaboration in		
Practical skills related to the creation of modern websites and designing relational databases. Sample Implementation of the project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	3			orking tools in electrical engine	ering, the ability to expand their		
project web page containing HTML tags, cascading style sheets, scripts, Java Script and XML files. The project relational database in MS SQL Server using Transact-SQL contains views, stored procedures and functions and triggers. Familiar with the technology building dynamic websites running on the server side (ASP.NET). Study outcomes and reference to the educational results for a field of study Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	Assu	mptions and obj	ectives of the course:				
Knowledge: 1. choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] 2. propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL gueries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	project databa	web page containing se in MS SQL Server	HTML tags, cascading style shee using Transact-SQL contains view	ts, scripts, Java Script and XMI vs, stored procedures and func	files. The project relational		
 choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: design, implement and publish a Web site - [K_U04+, K_U05+] to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+] 		Study outco	mes and reference to the	educational results for	a field of study		
 choose the appropriate Internet technologies to the set of functional features website - [K_W10+, K_W11++] propose a method of data collection and define dependencies and constraints associated - [K_W11+] Skills: design, implement and publish a Web site - [K_U04+, K_U05+] to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+] 	Know	/ledge:					
Skills: 1. design, implement and publish a Web site - [K_U04+, K_U05+] 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	1. choo	ose the appropriate Int	ternet technologies to the set of fu	nctional features website - [K_	W10+, K_W11++]		
 design, implement and publish a Web site - [K_U04+, K_U05+] to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+] 	2. prop	ose a method of data	collection and define dependencie	es and constraints associated -	[K_W11+]		
 2. to design and execute an MS SQL Server database applications engineering, define database objects, use the SQL queries - [K_U04+, K_U05+] Social competencies: awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+] 	Skills						
queries - [K_U04+, K_U05+] Social competencies: 1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]	1. desi	gn, implement and pu	blish a Web site - [K_U04+, K_U0)5+]			
1. awareness of the need for tools to improve the efficiency of electrical engineering and improve the economic importance of the company - [K_K05+]				tions engineering, define datab	ase objects, use the SQL		
the company - [K_K05+]	Socia	al competencies:	<u> </u>				
Accomment matheda of study subserves			tools to improve the efficiency of	electrical engineering and impr	rove the economic importance of		
			•	la af ata ba ard			

Lecture:

- assess the knowledge and skills listed on the completion of a written test and problematic.

Laboratory:

- assess the knowledge and skills related to the implementation of IT projects (two projects including: website and relational database in MS SQL Server),

- checking and rewarding knowledge and skills for the implementation issues of problem (homework).

Get extra points for the activity in the classroom, and in particular for:

- Activity classes in any attempt solutions to problems,

- ability to work as a team.

Course description

Markup Language (HTML), Cascading Style Sheets (CSS), Extensible languages XML, XSL stylesheets. The combination of HTML and CSS. Java Script scripting language. Connecting to Web pages with XML documents and Java Script. Publishing a Web site. Characteristics of MS SQL Server, SQL and Transact-SQL - create database objects (tables, views, stored procedures and functions, triggers) and queries. Fundamentals of ASP.NET. Environment Web Developer Express Edition, web development using ASP.NET. Web collaboration with relational databases.

Basic bibliography:

1. Schafer S. M.: HTML, XHTML i CSS. Biblia, Wydawnictwo Helion, Gliwice 2012.

2. Moncur M.: JavaScript dla każdego, Wydawnictwo Helion, Gliwice 2007.

3. Szeliga M.: Transact-SQL. Czarna księga, Wydawnictwo Helion, Gliwice 2003.

4. Connolly R.: ASP.NET 2.0. Projektowanie aplikacji internetowych, Wydawnictwo Helion, Gliwice 2008.

Additional bibliography:

1. Young M. J.: Krok po kroku XML, Wydawnictwo RM, Warszawa 2000.

2. Mendrala D., Potasiński P., Szeliga M., Widera D.: Serwer SQL 2008. Administracja i programowanie, Wydawnictwo Helion, Gliwice 2009.

3. Jahołkowski T., Matulewski J.: Technologie ASP.NET i ADO.NET w Visual Web Developer, Wydawnictwo Helion, Gliwice 2007.

Result of average stue	dent's workload	
Activity	Time (working hours)	
1. Participation in class lectures		15
2. Participation in laboratory classes	30	
3. Participate in the consultations on the lecture	3	
4. Participate in the consultations on the lab	3	
5. Preparation laboratory	14	
6. Implementation of project tasks		20
Student's wo	rkload	
Source of workload	hours	ECTS
Total workload	85	3
Contact hours	51	2
Practical activities	67	2