1.3. Module/ course form

To be completed by Course Team							
	Module name : **Block of elective subjects**					Module code:M23	
	Course name: Subject to choose. **WWW Servers**.					Course code:	
	Faculty: **Institute of Applied Informatics**						
	Field of study: **INFORMATYKA**						
	Mode of study : **Full-time**		Learning profile: **Practical**			Speciality	
	Year/ semester: **3/6**		Module/ course status: **optional**			Module/ course language: **Polish/English**	
	Type of classes	lecture	lessons	lab	project	tutorial	other (please specify)
	Course load	**15**		**30**			

Module/ course coordinator	**Jacek Paluszak, PhD Eng.**
Lecturer	**Jacek Paluszak, PhD Eng.**
Module/ course objectives	To familiarize students with the principles of installation, configuration and capabilities of web server services. Discussion of the tasks of web servers, virtual hosts, principles of operation of the Apache server and server installation and configuration (Apache - XAMPPa, Samba). Virtual servers, issues related to authentication and security of information in www networks (based on Apache server), redirection as well as issues related to proxy servers will be presented. In addition, students will be acquainted with issues related to server performance as well as new technologies and issues of web server security. Server installation for Windows 2003/2008 and Linux. Planning for the implementation of term services and applications will be discussed.
Entry requirements	Basics of programming, HTML and UML. Knowledge of computer architecture and computer networks.

LEARNING OUTCOME		
Nr	LEARNING OUTCOME DESCRIPTION	Learning outcome reference
1	Identifies keywords and structures of modern web servers	K_W04, K_W05, K_W12, K_W13

2	Knows the principles of managing ICT networks, including determining the level of data security and their access in the network	K_W04, K_W05, K_W08, K_W09 K_W15 K_W16, K_W17 K_W18, K_W19
3	Designs and plans data management	K_W14, K_W18 K_W19
4	Is able to design, create and manage servers with communication with the database	K_U01, K_U02, K_U03, K_U06, K_U08, K_U12, K_U16, K_U17, K_U21, K_U23
5	Is able to manage ICT networks, taking into account data security	K_U09, K_U12 K_U14, K_U22 K_U10, K_U11 K_U21, K_U24
6	He can create his own applications and software in selected tools	K_U01, K_U06 K_U12, K_U13 K_U19
7	He adheres to the principles of professional ethics, in particular honesty, respect for copyrights and respect for diversity of views	K_K02, K_K03
8	Describes, positions and diversifies the scope of knowledge and skills they possess	K_K04, K_K05 K_K07
9	He declares the need for continuous training and professional development	K_K01, K_K02

CURRICULUM CONTENTS

Lecture

Services and tasks of WWW servers. Selected security issues related to application applications and network services. Universal protection mechanism applicable to any application - limiting the execution environment.

2. Virtual hosts. Determining the hostname. Creating hosts and networks files. Configuring the interface for IP. Creating a subnet.

3. Apacze server. History. Configuration. Global Environment. Virtual Hoss. Security. Multithreading and scalability. Access control and CGI authentication. Apache internal server architecture, its basic configuration parameters, server log structure and applications. mechanisms for mapping logical access paths to physical paths.

4. Authentication and security of information on the World Wide Web. Server Authentication. Command line references for the Telnet server. User identification and authorization. E-MAIL mail with anti-spam and anti-virus protection. Access to email from the WWW level.

5. Proxy servers. Tracking user activity by the proxy server service provider. Security against tracking users of the service by analyzing the traffic generated by the proxy server and the nodes cooperating with it. Limiting the set of elements that can be downloaded. The presence of some HTML extending technologies (such as JavaScript) in uploaded HTML files. Threats to the functioning of the entire system.

6. Website sharing - security. Website from the user's local environment and other Internet users. VAST system service providers. Web server security. Attacks based on motion analysis.

7. New technologies and security issues. Protection against attacks based on long-term observation. Converting the agent applet to a local proxy server. Local saving of WWW pages in the scope of user sessions (cache). A mechanism that allows the user to directly enter URLs. New WWW services.

8. Planning network services, including DNS and IPv4-to-IPv6 connectivity.

9. Designing forests, domains and topologies and Active Directory®

10. Planning the application of group policy at company level and their administration, including delegation 11. Designing a solution using NAP (Network Access Protection), PKI and certificate services 12. Planning migration, cooperation and branch structure 13. Application preparation - implementation, updating and compliance 14. Designing system virtualization, 15. Data management and solutions to ensure business continuity
Tutorial
Lab.1. Installation and configuration of XAMPPa (Apach) - hours. 2 Lab.2. Server capabilities and services - diagnostics - hours. 2 Lab.3. Authorizing access to the server and sharing users' home pages - at 2 Lab.4. Virtual servers - hours. 2 Lab.5 Apache server and a security problem. 2 Lab.6. Catalog indexing - hours. 2 Lab 7. Planning name resolution and IP addressing - hours. 2 Lab 8. Designing domain services in Active Directory - hours. 2 Lab 9. Planning migration, trust and cooperation - at 2 Lab 10. Designing Active Directory administration and Group Policy strategies - at. 2 Lab 11. Designing a network access strategy and implementing a branch office - at 2 Lab 12. Planning implementation of Terminal Services and applications - at. 2 Lab 13. Virtualization of servers and applications - hours. 2 Lab 14. Planning and design of public key infrastructure - hours. 2 Lab 15. Designing solutions for data sharing, their security and business continuity, and designing software update infrastructure and compliance management - hours. 2

Basic literature	Apache: The Definitive Guide, 3rd Edition, By Ben Laurie, Peter Laurie, O'Reilly Media, 2009
Additional literature	

Teaching methods	Lecture with a multimedia presentation discussing problem issues. Research laboratories with discussion of obtained results. Laboratory classes related to learning practical IT phenomena using the project method and server programming.

Assessment method	Learning outcome number
Laboratory: A1 - Test for preparation for laboratory classes	01,02,03,05,06,07,08
Laboratory: A2 - Preparation of reports on the results of tests and analyzes	01,03,04,05,06,07,08
Laboratory: A3 - Solving posed test issues during classes and activity	07,08,09
Lecture: B - test	01,02,03,04,05,06,08,09

Form and terms of an exam	Percentage distribution: Laboratory - 50%, Lecture 50% Laboratory: A1 - 50%, A2 - 30%, A3 - 20%, Lecture: B - 100%

STUDENT WORKLOAD		
	Number of hours	
	In all	including practical
Participation in lectures	15	
Independent study of lecture topics	5	
Participation in tutorials, labs, projects and seminars	30	30
Independent preparation for tutorials*	40	40
Preparation of projects/essays/etc.*		
Preparation/ independent study for exams	10	
Participation during consultation hours	2	2
Other		
TOTAL student workload in hours	**102**	**72**
Number of ECTS credit per course unit	**4 ECTS**	
Number of ECTS points assigned to the scientific discipline	Technical informatics and telecommunications **4 ECTS**	
Number of ECTS credit associated with practical classes	**2,8 ECTS**	
Number of ECTS for classes that require direct participation of professors	**1,8 ECTS**	