

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Computer science applications		Code 1010332521010330123
Field of study Information Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 30 Classes: - Laboratory: 30 Project/seminars: -		No. of credits 5
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 5 100%
Responsible for subject / lecturer: Prof. dr hab. inż. Czesław Jędrzejek email: czeslaw.jedrzejek@put.poznan.pl tel. 61 665 35 32 Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K_W04: mStudent has organized knowledge with theoretical foundations of basic program constructions, algorithm implementations, paradigms and programming styles, software verification methods, formal languages, compilers, platforms. K_W08: possesses structured and theoretically founded knowledge of databases and data warehouses;
2	Skills	K_U02: is able to work independently and in a team, is able to estimate the time needed for the commissioned tasks, able to develop and implement a schedule of work to ensure deadlines, K_U03: is able to develop documentation of engineering tasks and prepare a text containing a discussion of the results of this task realizacji tego zadania
3	Social competencies	K_K01: Student is able to think and work in a creative and inventive way.
Assumptions and objectives of the course: To familiarize students with the importance of information systems for business firms. Analyzed will be discussed will be the practice of software development, including best practices for the provision of services (ITIL). Laboratories are devoted to practical aspects of the software architecture and design patterns, and discuss their implementation. NET using special tools for commercial software development in practice. oznanie studentów ze znaczeniem systemów informatycznych dla działalności firm. Zanalizowane będą Omówione zostaną praktyki wytwarzania oprogramowania, w tym najlepsze praktyki świadczenia usług (ITIL). Laboratoria poświęcone są praktycznym aspektom architektury oprogramowania oraz omówieniu wzorców projektowych oraz ich implementacji w środowisku .NET z wykorzystaniem specjalistycznych narzędzi do komercyjnego wytwarzania oprogramowania w praktyce.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. has knowledge of advanced programming techniques and methods - [K_W08]		
2. Student has basic knowledge of special purpose IT systems. - [K_W12]		
Skills:		
1. Student (in cooperative tasks) is able to design and implement parts of unusual and intricate IT systems. - [K_U09]		
2. Student is able to evaluate the usefulness of IT tools and technologies for a given IT task. - [K_U10]		

Social competencies:
1. Student understands the necessity of distributing information on computer science advancements and other issues related to computer engineer work. Student tries to distribute the information in a clear way and to present the facts from different points of view. - [K_K02]

Assessment methods of study outcomes
Lecture: written examination checking the knowledge of the latest analysis of the methodology software development of the organization and the business and the importance of information systems for business firms.
Laboratory: design and implementation of small features, but in a way that its subsequent use by others. The result of operation is independent of the software component of a well-defined and documented interface, ready to be used in other laboratories. Students also learn to use tools such as version control and project management system? communication with the teacher based on these two systems.

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Procesy biblioteki ITIL w wersji 3 (rok 2007) oraz w wersji 2 rok 2005.
Systemy informatyczne w firmie globalnej (wykłady zaproszone prowadzone przez menedżerów Roche Poland) ? usługi, CRM, ERP, łańcuch dostaw, systemy obsługujące podstawową działalność.
Najnowsze trendy w zarządzaniu procesami: BPMN 2.0, systemy analityczne (systemy regułowe, big data).
Laboratoria. Tematem zajęć są szeroko pojęte obszary komercyjnego wytwarzania oprogramowania. Studenci zapoznają się z systemami zarządzania projektami (Redmine, Mantis), systemami kontroli wersji (SVN, GIT) oraz systemem wsparcia klientów (SugarCRM). Poruszane są zagadnienia praktycznych zabezpieczeń systemów informatycznych, jak współczesne metody łamania haseł i sposoby na wzmacnianie odporności systemów oraz stosowanie podpisów cyfrowych w kontekście oprogramowania (code signing). Studenci zapoznają się także z narzędziami do testowania oprogramowania ? testy jednostkowe (NUnit oraz MSTest) i metodologią TDD (Test Driven Development). Pozostałe zajęcia poświęcone są praktycznym aspektom architektury oprogramowania oraz omówieniu wzorców projektowych oraz ich implementacji w środowisku .NET.

Basic bibliography:
1. Selected articles: Harvard Biznes Review: M. Porter, Strategy and Competitive Advantage: The New role of Information Technology
2. Materials: Mc. Kinsey, Transforming the company Avoiding the Black Swans Success Factors and core beliefs in Value Assurance Istanbul, April 2012
3. Report Oxford Sa?d Business School: AUGUST, 2011, A. Budzier , B.Flyvbjerg, Double Whammy ? How ICT Projects are Fooled by Randomness and Screwed by Political Intent
4. Hans Wierenga, Towards BPM 2.0, BPTrends, April 2012

Additional bibliography:
1. Documentation of tools supporting software development.
2. Training materials on ITIL standard

Result of average student's workload

Activity	Time (working hours)
1. Lectures	30
2. Laboratories	30
3. Preparation to laboratories	30
4. Doing laboratory reports.	15
5. Independent work on the lecture topics	20

Student's workload		
Source of workload	hours	ECTS

Total workload	125	5
Contact hours	60	2
Practical activities	75	3