Cycle of study:         Polish         obligatory           Cycle of study:         First-cycle studies         Form of study (full-time, part-time)         Inc. of credits           No. of nours         Lecture:         30         Classes:         -         Project/seminars:         15         4           Status of the course in the study program (Basic, major, other)         (university-wide, from another field)         (Urak)         ECTS distribution (number and %)         3         100%           Education areas and fields of science and at         ECTS distribution (number and %)         3         100%         3         100%           Responsible for subject / lecturer:         Responsible for subject / lecturer:         dr inz. Adam Meissner         email: adam meissner @put.poznan.pl         tel. 61 665 37 24         Wydzial Elektryczny         Eacture ada Meissner           U. Piotrowa 86 0-965 Poznaf         U. Piotrowa 36 60-965 Poznaf         U. Piotrowa 36 60-965 Poznaf         U. Piotrowa 36 60-965 Poznaf           1         Knowledge         Student has a theoretical and practical knowledge on software engineering and computing. Knowledge of usal Paradigm. computer science fundamentals with emphasize on OOP, fundamental algorithms (e.g. as given in AOCP vol.1)           2         Skills         Software engineering as covered in previous semester (class, use case and requirements diagrams). Proficiency in C.C++, C# or java. Podstawy baz danych. data base basics			STUDY MODULE D	ESCRIPTION FORM			
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Address       Skorski       dr in2. Andrzej Sikorski       dr in2. Adam Meissner         email: andrzej sikorski@put.poznan.pl       email: adam.meissner@put.poznan.pl       tel. 6653958         Wdział Elektryczny       Faculty of Electrical Engineering       ul. Piotrowo 3A 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge       Student has a theoretical and practical knowledge on software engineering. Student is knowledge of Visual Paradigm.         computer science fundamentals with emphasize on OOP, fundamental algorithms (e.g. as given in AOCP vol.1)       Model relacyiny.         2       Skills       Software engineering as covered in previous semester (class, use case and requirements diagrams).         ata base basics.       Proficiency in C,C++,C# or java.         3       Social       Ability to work in a team.         competencies       Tustworthiness, loyalty and discretion.         Knowledge of OP and advanced programming & modeling techniques.         The impact of modeling on software quality.         Proficiency in UIL modeling.         The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge of Itaest tools, technologies and trends within IT industry [K_W19] <td>lecin</td> <td></td> <td>ances</td> <td></td> <td></td>	lecin		ances				
dr inz. Andrzej Sikorski dr inz. Adam Meissner email: adam.meissner@put.poznan.pl tel. 6653958 tel. 653958 tel. 653958 tel. 653958 tel. 653958 tel. 61 665 37 24 Wydział Elektryczny Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań ul. Piotrowo 3A 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies: 1 Knowledge Student has a theoretical and practical knowledge on software engineering. Student is knowledgeable with the state of art and modern trends in software engineering and computing. Knowledge of Visual Paradigm. computer science fundamentals with emphasize on OOP, fundamental algorithms (e.g. as given in AOCP vol.1) Model relacyjny. 2 Skills Software engineering as covered in previous semester (class, use case and requirements diagrams) Proficiency in C, C++, C# or java. Podstawy baz danych. data base basics. 3 Social Ability to work in a team. Trustworthiness, loyalty and discretion. Assumptions and objectives of the course: Familiarizing a student with selected methods of software modelling and design and also with methods of software testing, validation and verification. Knowledge of OOP and advanced programming & modeling techniques. The impact of modeling on software quality. Proficiency in UML modeling. The main objective is to provide necessary knowledge and to support student project and lab work. Study outcomes and reference to the educational results for a field of study Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12] 2. Knowledge of latest tools, technologies and trends within 1T industry [K_W19] Skills:					5 100%		
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Ability to work in C,C++,C# or java.         Podstawy baz danych.         data base basics.         3       Social competencies         Trustworthiness, loyalty and discretion.         Assumptions and objectives of the course:         Familiarizing a student with selected methods of software modelling and design and also with methods of software testing, validation and verification.         Knowledge of OOP and advanced programming & modeling techniques.         The impact of modeling on software quality.         Proficiency in UML modeling.         The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]         2. Konowledge of latest tools, technologies and trends within IT industry [K_W19]         Skills:	Software engineering as covered in previous semester (class, use case and			use case and requirements			
data base basics.         3       Social competencies         Ability to work in a team.         Trustworthiness, loyalty and discretion.         Assumptions and objectives of the course:         Familiarizing a student with selected methods of software modelling and design and also with methods of software testing, validation and verification.         Knowledge of OOP and advanced programming & modeling techniques.         The impact of modeling on software quality.         Proficiency in UML modeling.         The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]         2. Konowledge of latest tools, technologies and trends within IT industry [K_W19]         Skills:			• /	L.			
3       Social competencies       Ability to work in a team.         73       Assumptions and objectives of the course:         Familiarizing a student with selected methods of software modelling and design and also with methods of software testing, validation and verification.         Knowledge of OOP and advanced programming & modeling techniques.         The impact of modeling on software quality.         Proficiency in UML modeling.         The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]         2. Konowledge of latest tools, technologies and trends within IT industry [K_W19]         Skills:			Podstawy baz danych.				
Competencies       Trustworthiness, loyalty and discretion.         Assumptions and objectives of the course:         Familiarizing a student with selected methods of software modelling and design and also with methods of software testing, validation and verification.         Knowledge of OOP and advanced programming & modeling techniques.         The impact of modeling on software quality.         Proficiency in UML modeling.         The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]         2. Konowledge of latest tools, technologies and trends within IT industry [K_W19]         Skills:							
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The main objective is to provide necessary knowledge and to support student project and lab work.         Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]         2. Konowledge of latest tools, technologies and trends within IT industry [K_W19]         Skills:							
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<ol> <li>Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]</li> <li>Konowledge of latest tools, technologies and trends within IT industry [K_W19]</li> <li>Skills:</li> </ol>		Study outco	mes and reference to the	educational results for	a field of study		
2. Konowledge of latest tools, technologies and trends within IT industry [K_W19] Skills:	Know	/ledge:					
Skills:	1. Knowledge of Software Engineering and CASE tools (ie. Visual Paradigm) - [K_W12]						
			, technologies and trends within	T industry [K_W19]			
I Knowledge adultion from APL tools and software tramework documentation - IK 11161							
2. Ability to map the requirement to the functionality and strucutre offered by software tools [K_U03]					- [K   ]03]		

## Social competencies:

1. Reliability and dependability. Understanding of the software modeling importance. - [K\_K07]

2. Responsibility for the work results. - [K\_K04]

Assessment methods of s	tudy outcomes	
Examination. UML and coding assigments.		
Seminary or mid-term exam.		
Challenges offered by the lecturer.		
Solution of technical problems presented within the lecture.		
Course descrip	tion	
Course update 2017: Scrum methodology.		
Dynamic UML diagrams: state, timing, interaction, sequence and activit	y.	
Concurrent programming design patterns. UML specification of high lev	el synchronization objects.	
Real time system modeling. Relational design and modeling. Relationa query re-writing.	l modeling. Relational divis	ion, semi anti-join, SQL
Formal methods. Agile programming and extreme programming. Scrun verification and testing.	n methodology. Methods of	software validation,
Teaching methods:		
- lectures supported by slides and examples presented on the table		
<ul> <li>projects - a usage of tools enabling students to perform tasks at hom discussion of common errors.</li> </ul>	e, reviewing student projec	t documentation with a
Basic bibliography:		
1. Bath G., McKay J., The Software Test Engineer's Handbook, Rocky	Nook, 2011	
2. Paulish D.J., Architecture-Centric Software Project Management: A I	Practical Guide, Addison-W	esley Professional, 2001
3. Schwaber K., Sutherland J., The Scrum Guide TM. The Definitive Gu http://www.scrumguides.org/docs/scrumguide/v2016/2016-Scrum-Guid		f the Game, July 2016,
4. Shore S., Warden S., The Art of Agile Development, O'Reilly Media,	2007	
Additional bibliography:		
1. Jeffries R., Extreme Programming Adventures in C#, Microsoft Press	s, 2004	
<ol> <li>Rad N.K., Turley F., The Scrum Master Training Manual. A Guide to Management Plaza, 2013, https://mplaza.pm/downloads/Scrum%20Tra</li> </ol>		Scrum Master (PSM) Exan
3. Sutherland J., Jeff Sutherland?s Scrum Handbook, Scrum Training I http://www.ugrad.cs.ubc.ca/~cs310/2014W1/slides/Sutherland_Scrum_		
Result of average studer	nt's workload	
Activity		Time (working hours)
1. Lecture		30
2. Individual activity	20	
3. Project labs	15	
Student's work	oad	
Source of workload	hours	ECTS
Total workload	65	4
Contact hours	45	3
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