

## COURSE DESCRIPTION CARD

Course name	Software Reuse				
Course type	elective	Course code	SDPB0043	ECTS credits	2
Forms and number of hours	lecture: 10h project: 10h	Scientific discipline	information and communication technology		
Course objectives	The objective of this course is to familiarize students with newest trends, principles, practicalities and key research issues in software reuse and, in particular, a Product Line approach to reuse. This course is based on lecture notes and readings of selected chapters from books and papers. In recent decades, we have observed proliferation of many trends in software technology, making promises that have remained mostly unfulfilled. The course will emphasize the interplay between some of those trends and the way they contribute to the overall goal of improving software quality and productivity. Active participation of students in the project, discussions and research topic presentations is expected. Students are exposed to mixed-strategy reuse approach, in which conventional OO and component-based techniques are complemented with meta-programming technique of ART (Adaptive Reuse Technique). Mixed-strategy achieves considerably higher rates of reuse than conventional methods alone.				
Course content	1. Design for reuse 2. Software Product Lines 3. Domain engineering, 4. Component-based software engineering 5. Generative techniques 6. Industrial case studies				
Teaching methods	Lectures Project				
Assessment method	Project evaluation; written test/exam				

Symbol of learning outcome	Learning outcomes	Reference to the learning outcomes for the field of study for the 8 <sup>th</sup> level of Polish Qualification Framework (PRK)	Methods of assessing the learning outcomes
L01	Understands newest approaches to software reuse	SD_W1	Project, Exam
L02	Knows trends in software engineering, their relationships and potentials to improve software productivity	SD_W2	Project, Exam
L03	Knows how to conduct controlled experiment and draw conclusions	SD_W3	Project, Exam
L04	Knows how to evaluate innovative approaches to software development	SD_U1	Project, Exam

Student workload (in hours)	
Lecture / project	10 / 10
Consultations	1
The unassisted student work	10
Implementation of project tasks and preparation for and participation in exams/tests	10
Total	41
ECTS credits	2

Basic references	1. Software product lines : practices and patterns / Paul Clements, Linda Northrop. 2. Effective software maintenance and evolution: Reuse-based Approach /S. Jarzabek
Supplementary references	1. Generative programming : methods, tools, and applications / Krzysztof Czarnecki and Ulrich W. Eisenecker 2. Facts and fallacies of software engineering / Robert L. Glass.
Author of the programme	dr hab. inż. Stanisław Jarzabek, prof. PB
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