Software Engineering

Course Description

Basic Information

Field of Study : Analytical Computer Science

Path : -

Organizational Unit : Faculty of Mathematics and Computer Science

Education Level : first-cycle studies

Form of Studies : full-time studies

Study Profile : general academic

Obligatory Status : mandatory

Education Cycle : 2022/23

Course Code : UJ.WMIIANS.180.01923.22

Languages of Instruction : Polish

Disciplines : Computer Science

ISCED Classification : 0613 Software and applications development and analysis

USOS Code : WMI.TCS.IO.OL

Course Coordinator

Bartosz Walczak

Course Instructor

Bartosz Walczak

Period Semester 4	Form of verification of learning outcomes graded credit Form of instruction and hours laboratory classes: 30	Number of ECTS points 3.0

Learning Outcomes for the Course

Code	Effects in terms of	Field-specific learning outcomes	Verification methods

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Knowledge – The student knows and understands:			
W1	the software development process and tools and environments for its design, testing, versioning, and maintenance	IAN_K1_W03, IAN_K1_W15	graded credit
Skills – The student can:			
U1	prepare, design, and implement a simple IT system using appropriate methods and tools, both independently and in a team	IAN_K1_U04, IAN_K1_U11, IAN_K1_U18, IAN_K1_U20	graded credit
U2	design software according to the object-oriented methodology, using object modeling tools and design patterns	IAN_K1_U15, IAN_K1_U16, IAN_K1_U21	graded credit
Social competences – The student is ready to:			
K1	work in a team, ask questions, engage in discussions, and critically evaluate statements and opinions	IAN_K1_K01, IAN_K1_K02	graded credit

ECTS Credit Balance

Student activity form	Average number of hours* dedicated to completed activity types	
laboratory classes	30	
project preparation	40	
test preparation	10	
problem solving	5	
Total student workload	Number of hours 85	ECTS 3.0

* hour (lesson) means 45 minutes

Program Content

No.	Program Content	Learning outcomes for the course
1.	1) Software development process 2) Requirements analysis, object modeling, and UML language 3) Principles and patterns of object-oriented software design 4) Software architecture design 5) Software testing 6) Software refactoring and TDD 7) Software versioning and continuous integration	W1, U1, U2, K1

Extended Information

Teaching Methods:

laboratory classes

Type of classes	Forms of credit	Course completion conditions
laboratory classes	graded credit	appropriate activity during classes or in project preparation, solving an adequate number of tasks, sufficiently high result on the test or project defense

Prerequisites and Additional Requirements

1. Ability to program in Java
2. Ability to work in a programming environment
3. Knowledge of basic concepts of object-oriented programming

Literature

Required

1. Original course – material covered during classes

Additional

1. R. C. Martin: "Zwinne wytwarzanie oprogramowania. Najlepsze zasady, wzorce i praktyki"