

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Object-oriented programming		Code
Field of study Mathematics in Technology	Profile of study (general academic, practical) general academic	Year /Semester 3 / 5
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First- cycle studies (Polish Qualifications Framework level six)	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: - Laboratory: 30 Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) basic		(university-wide, from another field) university-wide
Education areas and fields of science and art Technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: mgr inż. Damian Burzyński email: damian.burzynski@put.poznan.pl tel. 61 665 2449 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of high-level programming. [K_W06 (P6S_WG)]
2	Skills	Skills in the basics of architecture and software systems. [K_U04 (P6S_UW)]
3	Social competencies	Awareness of the need to expand their competences. [K_K01 (P6S_KK)]
Assumptions and objectives of the course: Knowledge of both theoretical and practical aspects of object-oriented programming, skills in object-oriented application development environment. NET Visual C # applications.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. knows the rules of high-level programming - [K_W06 (P6S_WG)]		
2. has knowledge of object-oriented programming useful when creating technical applications - [K_W06 (P6S_WG)]		
Skills:		
1. can be used a tool for programming using object-oriented programming elements -[K_U04 (P6S_UW), K_U09 (P6S_UW), K_U10 (P6S_UW), K_U13 (P6S_UK)]		
Social competencies:		
1. can think and act in a creative way - [K_K03 (P6S_KO)]		
Assessment methods of study outcomes		

<p>Lecture: -assessment of knowledge and skills listed on the completion of a written, -continuous evaluation for each course (rewarding activity).</p> <p>Laboratory: -end test and favoring knowledge necessary for the accomplishment of problems in the area of laboratory tasks, -continuous evaluation for each course - rewarding gain skills they met the principles and methods, -assessment of knowledge and skills related to the implementation of the tasks your practice.</p> <p>Extra points for the activity in the classroom, and in particular for: -propose to discuss additional aspects of the subject, -effectiveness of the application of the knowledge gained during solving the given problem, -ability to work within a team practice performing the task detailed in the laboratory, -subsequent to the improvement of teaching materials, -developed aesthetic-care tasks.</p>		
Course description		
<p>Basic issues of object-oriented programming, Visual Studio C # Express Edition, the issue of representation of physical reality in data structures, declarations of object types, static and dynamic object-oriented variables, fields, methods, constructors and destructor, encapsulation, inheritance, polymorphism, abstraction, etc. Create controls, overloaded operators, artwork, prints.</p> <p>Forms of conducting classes: Lectures - multimedia presentations (including drawings, photographs, animations) supplemented by examples given on the whiteboard, taking into account various aspects of the presented issues, including: economic, ecological, legal and social; presentation of a new topic preceded by reminder of related content known to students from other items. Laboratory - individual work at the computer Update: 10.2018</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. John Sharp: Microsoft Visual C# 2015 : krok po kroku, APN Promise, 2016 2. Boduch A.: Wstęp do programowania w języku C#, Wydawnictwo Helion, Gliwice 2006 3. Farbaniec Dawid: Visual Studio 2013 : tworzenie aplikacji desktopowych, mobilnych i internetowych, Helion, Warszawa 2015 4. Vieira R.: SQL Server 2005. Programowanie od podstaw, Wydawnictwo Helion, Gliwice 2007. 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. Perry S. C.: C# i .NET, Wydawnictwo Helion, Gliwice 2006. 		
Result of average student's workload		
Activity	Time (working hours)	
1. lectures	15	
2. laboratories	30	
3. participate in the consultations on the lecture	5	
4. participate in the consultations on the laboratories	5	
5. preparation for laboratory	10	
6. homeworks preparation	5	
7. prepare for a evaluation	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	75	3
Contact hours	55	2
Practical activities	50	2