DESCRIPTION OF STUDY MODULE*

Study programme	**Applied Informatics and Programming**		
Study module	**OBJECT-ORIENTED PROGRAMMING**	**Credits in total**	**6**

Learning outcomes
– Knows main differences between object-oriented and procedural programming. – Knows object-oriented programming elements and principles. – Implements object-oriented programs by performing software analysis, design, implementation and testing phases. – Creates prototypes of software systems and to perform experiments with them to support decisions, understanding of testing and debugging of object-oriented algorithms and appropriate programs. – Develops object-oriented software according to stated requirements. – Selects and applies appropriate data structures, programming languages, libraries and different modern technologies to implement various algorithms.
Aims of study module
The aim of the course is to provide students with knowledge about main principles and elements (objects, classes, attributes, etc.) of object-oriented programming and to distinguish between procedural and object-oriented programming by analyzing differences among them. Elaborate practical experience that is necessary to develop software systems.
Annotation of a study module
During this course students extend their knowledge from the basics of procedural programming (Programming C/C++) to more sophisticated object-oriented programming paradigm. They also learn modern programming techniques used in most popular C++ and Java programming languages and are introduced into object-oriented analysis and design methodology.
Topics of the subject
1. Introductory lecture. 2. Classes. 3. Encapsulation and overloading. 4. Objects. 5. Generic classes. 6. Inheritance and polymorphism. 7. Analysis and design. 8. Design patterns.
Procedure for assessment of knowledge and competences
Ten grades scale and cumulative score (KB) are used: KB = 0,25*SU + 0,25*CT + 0,5*ET SU – self-assessment tasks, CT – control test, ET – exam test. Semester independent tasks evaluated by grade exams during the session while the final grade.
Main literature
1. Rickus A. (2012). *Programavimas Java. Pirmoji pazintis*. Kaunas, Technologija, 150 p. 2. Flanagan D. (2014). *Java in a Nutshell.* 6th edition. O'Reilly Media, 418 p.

* Short form