OBJECT-ORIENTED PROGRAMMING

Learning module description

GENERAL INFORMATION

1. Module title: Object-oriented programming
2. Module code: DPOB LI0-E
3. Term: summer
4. Duration: 30h lectures + 30h laboratories
5. ECTS: 6
6. Module lecturer: Tomasz Obrębski
7. E-mail: obrebski@amu.edu.pl
8. Language: English

DETAILED INFORMATION

1. Module aim is presents basic concepts and techniques of object-oriented programming. They are illustrated by examples in object languages C++ and Java.
2. Pre-requisites in terms of knowledge, skills and social competences (where relevant):

SYLLABUS:

Week 1: Object oriented programming. Differences between object oriented programming and procedural programming.
Week 2: C++ as object oriented enhancement of ANSI C. Classes, objects, attributes, methods. Visibility for members of classes. Encapsulation.
Week 3: C++ as object oriented enhancement of ANSI C. Classes, objects, attributes, methods. Visibility for members of classes. Encapsulation (cont.).
Week 4: Inheritance. Early binding and late binding. Polymorphism. Abstract classes (C++).
Week 5: Constructors. Object lifetime. Operators. Type conversions (C++).
Week 6: The Standard Library. STL Containers. STL Iterators. Source code files.
Week 7: Object oriented analysis and design vs. object oriented programming.
Week 8: Relationships between objects: association, specialisation/generalisation, aggregation.
Week 9: Introduction to Java language.
Week 10: Introduction to Java language (cont.).
Week 11: Object lifetime, classes, attributes, methods, object initialization, visibility, source code organization, packages (Java).
Week 12: Class hierarchy, interfaces, polymorphism in Java.
Week 13: Exceptions handling. Threads.
Week 14: Event-driven programming in Java.
Week 15: Java generics. Java collections.