GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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| Subject name and code | Object programming, PG_00045295 | | |
| Field of study | Data Engineering | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | 2022/2023 |
| Education level | first-cycle studies | Subject group | Obligatory subject group in the field of study<br>Subject group related to scientific research in the field of study |
| Mode of study | Full-time studies | Mode of delivery | at the university |
| Year of study | 1 | Language of instruction | Polish |
| Semester of study | 2 | ECTS credits | 3.0 |
| Learning profile | general academic profile | Assessment form | exam |
| Conducting unit | Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Marek Moszyński | |
| | Teachers | mgr inż. Tomasz Idzi<br>dr hab. inż. Marek Moszyński<br>mgr inż. Tomasz Bieliński | |

| Lesson types and methods of instruction | | | | | | | |
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| | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 11.0 | 30.0 | 0.0 | 56 |
| | E-learning hours included: 0.0 | | | | | | |

| Learning activity and number of study hours | | | | | |
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| | Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
| | Number of study hours | 56 | 6.0 | 13.0 | 75 |

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| Subject objectives | Theory and practice on object oriented programming | | |
| Learning outcomes | Course outcome | Subject outcome | Method of verification |
| | [K6_U01] programs in procedural, object, functional and logic programming languages, codes programs at the processor instruction level, runs and tests programs. | The practical skills are verified by programming using a few object oriented languages | [SU1] Assessment of task fulfilment<br>[SU4] Assessment of ability to use methods and tools |
| | [K6_W05] Knows and understands programming models and evolution of related languages. Knows the methods of analysing and designing information systems and the modeling languages used in them, as well as the basic object-oriented programming platforms. | The lectures give the idea of object oriented programming with the four different programming languages i.e. C++, Java, C# and Python. | [SW1] Assessment of factual knowledge |

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| Subject contents | 1. Software programming paradigms including object oriented approach<br><br>2. Encapsulation, inheritance, abstraction and polymorphism in C++ language<br><br>3. Specific features of C++ obiect-orientation<br><br>4. Java language and its comparison to C++ language<br><br>5. C# language as succesor of C++ and Java languages<br><br>6. Python as a scripting object oriented languge |
| Prerequisites and co-requisites | Knowledge on non-object oriented language i.e. C language. |
| Assessment methods and criteria | |

| Subject passing criteria | Passing threshold | Percentage of the final grade |
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| laboratory | 60.0% | 33.0% |
| project | 60.0% | 33.0% |
| lecture | 60.0% | 34.0% |

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| Recommended reading | Basic literature | Bjarne Strastroup - The C++ programming language<br><br>Bruce Eckel - Thinking in Java<br><br>Andy Harris - Macrosoft C# for absolute beginner<br><br>Mark Lutz - Programming Python |
| | Supplementary literature | John Hunt - Smalltalk and Object Orientation |
| | eResources addresses | Adresy na platformie eNauczanie:<br>Object Programming 2023 - Moodle ID: 25828<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25828 |
| Example issues/ example questions/ tasks being completed | Sample question: What are the trends of C++ evolution?<br><br>Sample task: implementation of simple object oriented software module using object oriented paradigms in different languages | |
| Work placement | Not applicable | |