SYLLABUS

Name: ***Computer Programming (IBioAIB>SI3CP23S)***
Name in Polish:
Name in English: ***Computer Programming***

Information on course:

Course offered by department: Faculty of Biomedical Engineering
Course for department: Silesian University of Technology
Term: Winter semester 2024/2025
Cordinator of course edition: Dr inż. Marcin Rudzki

Default type of course examination report:
EGZ
Language:
English
Course homepage:
https://platforma.polsl.pl/rib/course/view.php?id=207
Short description:
The aim of the course is to present the fundamentals of programming, algorithms and basic data structures in the C# language.

Information on course edition:

Default type of course examination report:
EGZ
Bibliography:
missing bibliography in English
Notes:
See the Lecture and Laboratory sections first!
Detailed credit conditions:
During the course in total 50 points can be obtained.
There are 5 short tests, 4 pts each, total 20 pts.
Theoretical part or the exam gives max 10 pts.
Practical part of the exam gives max 20 pts.
To get credit from the course it is mandatory to fullfill all the below conditions:
- get at least 1 pt from each short test (5 in total),
- get at least 3 pts from the theoretical test of the exam,
- get at least 5 pts from the practical part of the exam,
- get at least 21 points in total.
Final grade is calculated basing on the total number of points (p) obtained:
p < 21 -> 2.0 (FAIL)
21 <= p < 28 -> 3.0
28 <= p < 36 -> 3.5
36 <= p < 41 -> 4.0
41 <= p < 45 -> 4.5
p >= 45 -> 5.0
Student who was absent due to justified reasons retakes the short tests on the next laboratory or at the end of the semester. Student who did not get the minimum from a short test retakes it at the end of the semester, however max 1 pt can be obtained in such case. Student who passed the laboratory cannot attempt short tests retaking to get a better grade.
Student can attempt the exam even if already has a passing grade, however the points obtained from the later attempt prevail the previous ones.

Details of classes and study groups

lecture (30 hours)

Learning outcomes:
Student knows:
- basic concepts in computer programming: data types, variables, conditions, loops, subroutines (functions), arguments, return value, algorithm and its implementation, etc,
- elementary C# language constructs and tools required to write programs.
K1A_W01, K1A_W07
Assessment methods and assessment criteria:
Short tests during the laboratory (at least 5 out of 20 points), theoretical test during the exam (at least 3 out of 10 points).
Refer to the course common section for credit conditions and final grade calculation!
Classes topics:
Algorithms, variables, data types, instructions, basic operations on the data.
Integrated development environment, C# program template.
Program flow control instructions (branching, loops).
Arrays and jagged arrays: declaration, initialization and processing.
Subroutines (functions) and structural programming, argument passing, returning results, value and reference types.
Strings and characters – definition and processing. Using the documentation system.
File input/output operations, the idea of streams, streams properties, types of streams.
Teaching methods:
Presentations, examples, short tasks, discussion.

Study groups details

Group number 1

Class instructors:
Dr inż. Marcin Rudzki

laboratory classes (30 hours)

Learning outcomes:
Student is able to: - use an integrated development environment for software development, - correctly choose datatypes for a given purpose, - implement an algorithm in the C# language for solving a given task. K1A_U04, K1A_U07
Assessment methods and assessment criteria:
Short tests during the laboratory (at least 5 out of 20 points), practical part of the exam (at least 5 out of 20 points). Refer to the course common section for credit conditions and final grade calculation!
Classes topics:
1. Runtime environment, first project in an integrated development environment. 2. Input/output operations. 3. Program flow control. 4. Arrays. 5. Functions. 6. Text processing. 7. Files handling.
Teaching methods:
Examples, short tasks, discussion, samples available on the course page and in the internet. Some tasks may require students to work in small groups (2-3 persons) to analyze and solve a problem.

Study groups details

Group number 1

Class instructors:
Dr inż. Marcin Rudzki
Dr inż. Jacek Kawa

Element of course groups in various terms:

Course group description	First term	Last term
missing group description in English (IBioAIB>SI-3-23-S)	2024/2025-Z	

Course credits in various terms:

<without a specific program>			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	5	2024/2025-Z	