Algorithmization and Programming of Solutions

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RTU
DATORZINĀTNES UN INFORMĀCIJAS TEHNOLOĢIJAS FAKULTĀTE

Objectives of the course

The goal of the course is to prepare students for further computer science courses, to teach to algorithmize the problem and to check solution by implementing the software.

The main objectives are to provide academic knowledge on algorithms, their properties and their development, formal syntax, semantics, data types, structures, data processing operations, as well as to provide practical knowledge about high-level programming languages.

The result of the course is archived by developing a set of documented programs of varying complexity

Structure of the course

The course is divided into two parts:

Part I (autumn semester)
an introduction to algorithmization and programming, creating of simple programs

Part II (spring semester)
creating of more complicated programs, including object-oriented programming, processing of strings, files, communication with user, exceptions handling.

Each part includes lectures, practicals and laboratories.

Requirements to pass this course

- During the spring semester, students must complete 1 lab, take two tests, and submit 1 homework:

  lab. work: *27.03.2023*
  tests: *20.03.2023* and *29.05.2023*
  homework deadline: *14.05.2023*

- At the end of the spring semester students have to pass an exam.

$$FG = SG * 0.6 + EG * 0.4$$
$$SG = (L_1 + T_1 + T_2 + HW) / 4$$

FG - final grade (for spring semester)
SG - semester grade
EG - exam grade
L - laboratory work grade
T - test grade
HW - homework

Additional information sources:

- Tutorials on different topics related to IT, e.g., computer science (e.g. structures and Algorithms), programming languages (e.g., C, Java, Python, VBA), IT technologies. Available at: https://www.tutorialspoint.com/index.htm
- Tutorials for WEB developers, e.g., Java. Available at: https://www.w3schools.com/ https://www.programiz.com/java-programming/hello-world
- Courses for students, e.g., Computer Algorithms. Available at: https://www.khanacademy.org

Lecturer contacts

PM through ORTUS
and/or
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