

# Combinatorial Algorithms

RM35KOA

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Introduction of Basic Terms, Example Applications  
week 1  
19. 2. - 25. 2. 2024



To get an **assessment**, the following requirements have to be met:

- obtain at least **30 from 50 points**
- successfully **solve all homework** assignments

How to earn points:

- 20 points (10 point for each) for theoretical tests I, II (written at the lectures)
- 10 points for a semester project
- 20 points for homework assignments (there will be 4 of them)  
(5 points for each assignment if submitted successfully before the deadline)

For more information, please check the **course website**:

<https://cw.fel.cvut.cz/b232/courses/rm35koa/start>



- homework can be coded in **Python** or C++
- each homework (the source code) must be handed into BRUTE (<https://cw.felk.cvut.cz/brute>) with a soft deadline specified in BRUTE
- homeworks are graded automatically by the BRUTE
- there is 1 penalty point for each commenced week until the homework is uploaded successfully (you can't get less than 0 points for the homework)
- check [https://cw.fel.cvut.cz/b232/courses/rm35koa/upload\\_system](https://cw.fel.cvut.cz/b232/courses/rm35koa/upload_system) for technical requirements on the submitted source code



Each student chooses from the following two options:

① **Cocontest:**

- Students participating in the contest implement a solver for one specific combinatorial optimization problem.

② **Research on a chosen topic:**

- A student chooses a non-trivial problem from the combinatorial optimization area on which they will work during the semester. The lab teacher must approve the topic! **Care and good individual work are expected.**

If a student wishes to choose **Research on a chosen topic**, they will email their lab teacher with the selected topic by **the deadline of 7. 3. 2024.**



- optimization competition
  - single real-life optimization problem
  - you provide only code with your solution; no report needed
  - solutions are evaluated by BRUTE
  - grading comprises both the ability to solve a set of basic instances and the rating among the other students on harder instances
  - computation time given for the solver is bounded
- past contests' **“Hall of Fame”**
  - **2023 winner: Šimon Zvára**
  - 2022 winner: Jiří Němeček
  - 2021 winner: Karolína Machová
  - 2020 winner: Václav Voráček
  - 2019 winner: Pavel Gramovich
  - 2018 winner: Lukáš Hejl
  - 2017 winner: Ondřej Benedikt
  - 2016 winner: Vladimír Kunc



- students can solve a problem for some company, project, diploma thesis etc.
- the assignment has two parts: a written report and the implementation
- submission is divided into 3 parts constrained by deadlines
  - 1 penalty point for the late delivery (for each part)
- written document is between 4 and 8 pages
- the evaluation is performed by the student's lab teacher; fulfilment of formal requirements and the work quality is evaluated



For more information about what we are doing, our projects, thesis topics, etc., please visit:

<http://industrialinformatics.fel.cvut.cz/>

<https://www.facebook.com/IIRC.CVUT/>

...or write to us an email!

