Algorithms on Graphs

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The course lecturer

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Course site at Moodle:

https://edu.mmcs.sfedu.ru/course/view.php?id=669

Short name: 'GraphsAlgoEn'

Course format

- Course = lectures + practical lessons

- Lectures: 1 lesson per week

- Practical lessons: 1 lesson per week

- 3 modules:
  - 6 programming assignments + 3 tests.
  - Each test gives you up to 10 points.
  - For programming assignments, you can receive up to 70 points in total.

- To pass the course, you need to receive 60+ points.

Course structure

Module 1. *Basic algorithms*.

   3 assignments + 1 test

Module 2. *Shortest distances*.

   2 assignments + 1 test

Module 3. *Flows and matches*.

   1 assignment + 1 test

Programming assignments

- Programming language: C++ (or C)
- Program should have command–line interface
  - ✓ GUI is admissible but does not influence the score
- Data input and output via text files
- A solution for a programming assignment should include a zip file with:
  - ✓ a 'Project' folder, containing all necessary source (and header) files
  - ✓ an executable file (Release, Win32)
  - ✓ sample input and output files
  - ✓ a .bat file for running the program with command line arguments

Command line interface

```
Program1.exe In.txt 10 Out.txt
```

```cpp
int main(int argc, const char * argv[])
{
    if (argc == 4)
    {
        // argv[0] = program file name
        string InputFile = argv[1];
        int BufLen = atoi(argv[2]);
        string OutputFile = argv[3];
        ...
        return 0;
    }
    else
    {
        cout << "Invalid number of arguments: " << argc << " instead of 3." << endl;
        return 1;
    }
}
```