This course is an introductory graduate course on algorithms and informatics for non-specialists. It will cover the fundamentals of algorithm design and analysis, the analysis of graphs and flow problems, data structures as well as an introduction to important concepts such as randomization, heuristics and approximation.

At the end of the course, students should understand the basic concepts of algorithms and informatics studied during the semester.

1. Introduction: the role of algorithms in computing (1 week)
2. Data structures, search and sort algorithms (3 weeks)
3. Basic techniques for algorithm design (4 weeks)
   a. Divide-and-Conquer
   b. Greedy algorithms
   c. Dynamic programming
4. Graphs algorithms (3 weeks)
5. Randomized algorithms (2 weeks)
6. Solving hard problems: heuristics and approximation (2 weeks)

Evaluation on submitted reports.


The instructor expects students to spend enough time after each class for review. Additionally, mandatory reading material and assignments will be given during the course.

Details for the KULASIS office can be found at KULASIS.