		U-LAS30 20030 LE10			
< **>**		Introduction to Algorithms-E2 Introduction to Algorithms-E2			Jesper Jansson
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An algorithm is a well-defined procedure for solving a computational problem.
Reliable algorithms have become crucial components of people's daily lives; for example, the Internet or our smartphones would not work without them.
The purpose of this course is to provide a basic introduction to algorithms for non-computer science students. General techniques for designing algorithms and analyzing their efficiency, as well as examples of widely used algorithms with important real-life applications, will be presented.

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After completing this course, the student should be able to:
- Apply various algorithm design techniques for solving computational problems.
- Measure the efficiency of an algorithm.
- Explain how famous algorithms such as Google's PageRank, Quicksort, and Dijkstra's shortest-path algorithm work.

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The course will cover the following topics:
1. Introduction
2. Graph traversal
3. Data compression
4. Cryptography
5. Topological sort
6. Shortest paths
7. PageRank
8. Voting systems
9. Searching
10. Sorting
11. Hash tables
12. String matching
13. Randomization
14. Course summary and Q & A session
<<Final examination>>
15. Feedback

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An ability to think abstractly and to solve problems of a mathematical nature will be required for this course. No programming skills are needed.

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A written examination at the end of the course.

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P. Louridas   Real-World Algorithms - A Beginner's Guide   The MIT Press, 2017. ISBN-13: 978-0262035705.

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Students will be expected to spend about 3 hours per week to prepare for and review the lessons.

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