

科目ナンバリング		U-LAS30 20030 LE10					
授業科目名 <英訳>	Introduction to Algorithms-E2 Introduction to Algorithms-E2			担当者所属 職名・氏名	情報学研究科 特定准教授 Jesper Jansson		
群	情報学科目群		分野(分類)	(各論)		使用言語	英語
旧群	B群	単位数	2単位	週コマ数	1コマ	授業形態	講義 (対面授業科目)
開講年度・ 開講期	2026・前期	曜時限	月2	配当学年	全回生	対象学生	全学向
[授業の概要・目的]							
<p>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.</p> <p>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.</p>							
[到達目標]							
<p>After completing this course, the student should be able to:</p> <ul style="list-style-type: none"> - 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. 							
[授業計画と内容]							
<p>The course will cover the following topics:</p> <ol style="list-style-type: none"> 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 							
[履修要件]							
<p>An ability to think abstractly and to solve problems of a mathematical nature will be required for this course. No programming skills are needed.</p>							
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Introduction to Algorithms-E2(2)

[成績評価の方法・観点]

A written examination at the end of the course.

[教科書]

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

[授業外学修（予習・復習）等]

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

[その他（オフィスアワー等）]

[主要授業科目（学部・学科名）]