

COURSE DETAIL

NETWORK SCIENCE

Country

Netherlands

Host Institution

Utrecht University

Program(s)

Utrecht University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mathematics Computer Science

UCEAP Course Number

179

UCEAP Course Suffix**UCEAP Official Title**

NETWORK SCIENCE

UCEAP Transcript Title

NETWORK SCIENCE

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This class addresses topics from network structure and growth to the spread of epidemics. The course studies diverse algorithmic techniques and mathematical models that are used to analyze such large networks, and give an in-depth description of the theoretical results that underlie them. Some topics are random graphs, giant components, power laws, percolation, spreading phenomena, community detection, basic algorithms for network science, lower bounds and advanced algorithms for polynomial-time problems, sampling algorithms, streaming algorithms, sublinear algorithms, and graph partitioning algorithms.

The course assumes basic skills in algorithms and mathematics: familiarity with basic graph algorithms (shortest paths, flows), and basic understanding of NP-completeness. Work with basic probabilities and some integrals is included.

Language(s) of Instruction

English

Host Institution Course Number

INFOMNWSC

Host Institution Course Title

NETWORK SCIENCE

Host Institution Course Details

https://osiris.uu.nl/osiris_student_uuprd/OnderwijsCatalogusSelect.do?selectie=...

Host Institution Campus

Host Institution Faculty

Faculty of Science

Host Institution Degree

Host Institution Department

Graduate School of Natural Sciences

Course Last Reviewed

2021-2022

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