COURSE DETAIL

SIMULATION
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Computer Science
UCEAP Course Number 148
UCEAP Course Suffix
UCEAP Official Title SIMULATION
UCEAP Transcript Title SIMULATION
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
The purpose of the course is to introduce discrete event simulation, basic optimization approaches, and heuristic methods such as simulated annealing, tabu search, and evolutionary algorithms. The course begins by studying discrete event simulation. Students learn to write process-oriented and event-scheduling simulation programs in general programming languages. Estimation of accuracy, random number generation, methods for studying rare events, verification and validation are also covered. The next topic covered is optimization techniques. Linear programs (LP) and the simplex algorithm are studied. This is followed by integer programming (IP) and Mixed Integer Programming (MIP), the relation between IP and LP, and the branch-and-bound method for IP. Finally, heuristic and meta-heuristic methods for combinatorial optimization problems are viewed as optimization through simulation. The local search and its most common variations are explained along with the Monte Carlo techniques.

Language(s) of Instruction
English

Host Institution Course Number
EITN95

Host Institution Course Title
SIMULATION

Host Institution Course Details
https://kurser.lth.se/kursplaner/live/40/en/EITN95/

Host Institution Campus
Engineering

Host Institution Faculty

Host Institution Degree

Host Institution Department
Engineering - Electrical and Information Technology

Course Last Reviewed
2020-2021

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