COURSE DETAIL

APPLIED ROBOTICS
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Mechanical Engineering Engineering
UCEAP Course Number 162
UCEAP Course Suffix
UCEAP Official Title APPLIED ROBOTICS
UCEAP Transcript Title APPLIED ROBOTICS
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
The course provides basic knowledge in industrial robotics where theory is applied on industrial applied problems. The purpose is to provide an understanding of how theory within the subject of the course can be applied in a practical way from an engineering point of view to create models for analysis, simulation, and programming, and solutions to problems with a focus on efficient use of robots in industry. Students learn to understand the characteristic features of robots and their significance when used in industrial processes. Methods for modeling and analysis of kinematics of robots are explained and used. Students acquire skills to design a robot system for industrial use with respect to given requirement specifications. Students critically assess designs and features of robot systems for use in industrial settings. Students solve direct and inverse kinematics problems for given robot structures, model a robot system, perform simulations, and produce robot programs of the system. The course is based on projects and focuses on three problem areas: design of manufacturing systems with robots; programming and simulation of a robot; and modeling of robots. Within the problem areas, the following are studied: characteristic features of robots with emphasis on the use in industry; programming and methods used in calibration and simulation; modeling and analysis of robot structures; use of robots in industry with adaptation and integration to processes; end-effectors; tools, safety, and peripherals. Each student presents results from project tasks in the course as a report, models, and/or simulations upon completion of each project. In general these are performed individually or in teams of two students. The result from each project work is evaluated and the final course evaluation is calculated as a weighted mean value of these. Assessment is based on results from the tasks in the projects.

Language(s) of Instruction
English

Host Institution Course Number
MMKF15

Host Institution Course Title
APPLIED ROBOTICS

Host Institution Campus Engineering
Host Institution Faculty
Host Institution Degree
Host Institution Department Engineering- Product Development

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