FDD3356 System Integration for Robotics 7.5 credits

Systemintegration i robotik

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for FDD3356 valid from Spring 2015

Grading scale

Education cycle

Third cycle

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course, the student should be able to:

* write, present and defend a project proposal

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* plan and carry out advanced system integration in a robotics project

* present his or her work for different audiences by preparing both popular and technical presentations and adapt content and format to audience

* review critically own work and the work of other´s within the project.

In addition to this, the student will have got:

* a deeper understanding of limitations for a set of components in a robotic system

* practical experience of working with subsystems outside his or her own expertise

* experience of how large part the integration work is of building a whole system and that it also implies difficult technical challenges in itself.

Course contents

To build complex systems as robots requires knowledge and expertise within many different fields. The aim of this course is to let the students build a robot system or a subsystem that they should not be able to make alone and to train to integrate different components. It is assumed that the components that are integrated are different enough to create a significant challenge of integration.

Each participating student must be an expert within one of the core areas in the project i.e., the student can contribute with expertise to the project. No student may be expert within all core areas in the project since this should imply that cooperation is not strictly necessary.

In most cases, the integration work will be about an implementation on a real robot system. The project will ideally result in some form of a demonstrator that can be used to illustrate how the research that is carried out by the participating students can be used in practice, in communicating both with other researchers and the society in general.

In the beginning of the course a project proposal is written. This is made in the group. Each student has to present the proposal orally and be able to argue for the project and his or her participation in it. During the work, the students should log their work, so that a deeper analysis will be possible to do at the end of the project. Leverables typically include demos, and must include a popular presentation in some form. To complete the course, each student should write an individual reflection where learning, group assignment, outcomes of planning, etc are reflected about.

Course literature

No specific reading list.

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

To pass the requirements of the course, the student has to

INL1: in the group write a project proposal including an explanation of the work and how each student contributes to it, the delegation between the students of the group, and how the work should be carried out. The proposal should also describe the expected learning outcomes for each student and how they should be achieved. Finally, the proposal should list the leverables that are connected to the project. Each student should present and defend the proposal individually orally.

PRO1: carry out the project in groups, write an individual reflection that contains a description of how the expected learning outcomes were satisfied in practice, carry out a popular presentation, present the results at the department(s) and deliver the leveralbles that are suggested in the project proposal (often some form of a demo).

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.