Course Syllabus

School of Science and Technology

Autonomous Robots and ROS, 3 Credits

Course Code: DT104U
Main Field of Study: Computer Science
Subject Area: Field of Technology
Credits: 3
Subject Group (SCB): Computer Science
Progression: AXX
Established: 2018-06-12
Last Approved: 2018-06-12
Valid from: Autumn semester 2018
Approved by: Head of School

Aims and Objectives

General aims for second cycle education
Second-cycle courses and study programmes shall involve the acquisition of specialist knowledge, competence and skills in relation to first-cycle courses and study programmes, and in addition to the requirements for first-cycle courses and study programmes shall
- further develop the ability of students to integrate and make autonomous use of their knowledge
- develop the students' ability to deal with complex phenomena, issues and situations, and
- develop the students' potential for professional activities that demand considerable autonomy, or for research and development work.

(Higher Education Act, Chapter 1, Section 9)

Course Objectives

Knowledge and understanding
The student shall after the completion of the course gained knowledge about ROS (Robot Operating System) and its functionalities and how ROS can be applied within different robotics applications.

Competence and skills
After the completion of the course the student shall be able to utilize ROS to build a subsystem or to address and solve a problem within the scope of robotics and artificial intelligence.

Judgement and approach
The student shall after the completion of the course be able to asses how ROS could be used to address a specific problem and have obtained an understanding on both limitations as well as abilities.

Main Content of the Course

An overview of the core functionalities in ROS.
- Practical considerations when designing ROS system.
- Examples of running different robotic applications in various domains using ROS.
- Lab work containing both simulated and real robotic plattforms.

Teaching Methods

The course is designed as a distance learning course including classroom events. It comprises a series of online lectures, group discussions, obligatory self-study exercises and seminar presentations on a literature study and a case-based learning task.

Examination Methods

Exercises, 1.5 Credits. (Code: 0100)
Written report.
Seminar Presentation, 1.5 Credits. (Code: 0200)
Oral presentation on seminar.

Grades

According to the Higher Education Ordinance, Chapter 6, Section 18, a grade is to be awarded on
the completion of a course, unless otherwise prescribed by the university. The university may
prescribe which grading system shall apply. The grade is to be determined by a teacher specifically
appointed by the university (an examiner).

According to regulations on grading systems for first- and second-cycle education (vice-chancellor's
decision 2010-10-19, reg. no. CF 12-540/2010), one of the following grades is to be used: fail,
pass, or pass with distinction. The vice-chancellor or a person appointed by the vice-chancellor may
decide on exceptions from this provision for a specific course, if there are special reasons.

Grades used on course are Fail (U) or Pass (G).

Exercises
Grades used are Fail (U) or Pass (G).

Seminar Presentation
Grades used are Fail (U) or Pass (G).

Other Provisions
The course is given in english.

Reading List and Other Teaching Materials

Required Reading

Ingen kurslitteratur krävs./No course literature is required.