

SYLLABUS

Project in Engineering Physics and Electrical Engineering - Electronic Systems and Control Engineering 15 credits E7032E

**Projekt teknisk fysik och elektroteknik, inriktning elektroniksystem
och reglerteknik**

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2023-02-15**

Project in Engineering Physics and Electrical Engineering - Electronic Systems and Control Engineering 15 credits E7032E

Projekt teknisk fysik och elektroteknik, inriktning elektroniksystem och reglerteknik

Second cycle, E7032E

Education level

Second cycle

Grade scale

U G#

Subject

Elektroteknik

Subject group (SCB)

Electrical Engineering

Entry requirements

At least 210 hp completed of the degree requirements from the Master Programme in Engineering Physics and Electrical Engineering, as well as the following completed specialisation courses: D0013E Microcomputer Engineering 7,5 hp, E7030E Electronic systems 7,5 hp, R7003E Automatic Control 7,5 hp, and R7014E Advanced Control Design 7,5 hp.

Good knowledge in English equivalent to English 6.

Selection

The selection is based on 30-285 credits

Course Aim

After completing the course participants should be able to contribute to an engineering team within which they can perform independently towards a project goal. The student shall be able to:

1. Plan and manage a project and its associated risks
2. Engineer and construct functional industrial systems
3. present results publicly
4. author extensive reports.

Knowledge and understanding

Within this course, the participants must apply the skills they have learned in all previous courses, which might have been at an abstract level, to tangible systems. The students shall further develop skills such as

- Project breakdown, planning with weekly reassessment and risk analysis
- Team cooperation and communication
- Extensive report writing in English.

Competence and skills

The course makes use of all previously learned engineering skills and reinforces them in a manner that enhances the participants' individual aspirations and specialization.

Judgement and approach

Since it is a new set of projects each year, the students have to conceptualize and engineer solutions to new problems and then implement them while tracking the risks within the whole project.

Contents

This course covers project management, engineering design and implementation within a team context, presentations (weekly and final), and an extensive report.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

This course includes learning activities such as engineering design and simulations (e.g., SPICE, MATLAB, UML, SysML) and the implementation of these designs into a coherent and functional system. A workroom with computers is made available for the team members to cooperate towards their goal.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

The course is assessed through:

- participation within a team to solve an industrial engineering challenge, which addresses the intended learning outcomes 1 and 2
- Weekly and final presentations, which addresses the intended learning outcomes 1 and 3
- Extensive report of the project, which relates to the intended learning outcome 4.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

The course can not be combined with other project course at advanced level from the Department of Computer Science, Electrical and Space Engineering.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Project	U G#	15	Mandatory	A18	Yes

Last revised

by Robert Brännström 2023-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2018-02-15