Applied Signal Processing 7.5 credits S7011E

Tillämpad signalbehandling

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-02-15

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Applied Signal Processing 7.5 credits S7011E

Tillämpad signalbehandling

Second cycle, S7011E

Education level	**Grade scale**	**Subject**	**Subject group (SCB)**
Second cycle	G U 3 4 5	Signalbehandling	Computer Technology

Entry requirements

Knowledge in stochastic signals, corresponding to the course S7001E Stochastic signals.

Good knowledge in English equivalent to English 6.

Selection

The selection is based on 30-285 credits

Course Aim

After completion of the course, the students shall:

- Be able to implement different methods for filtering, modeling, and spectral estimation of stochastic signals.
- Explain differences between methods in the categories mentioned above.
- Based on the fundamental mathematical principles of the methods, be able to develop and explain new algorithms.

At the end of the course, the student should be able to:

- Individually or in teams, plan and conduct qualified tasks relevant to the field.
- Model, evaluate, and simulate practical systems, by applying the methods and principles presented in the course.
- Present results in written reports in English.

The students should also be able to judge

- The applicability and limitations of the different methods regarding specific practical problems relevant to the field.

Contents

The course covers a number of central concepts of applied and adaptive signal processing, such as: Wiener filtering, power spectrum estimation, signal modeling and adaptive filtering. The mandatory laboratory work covers practical problem related to ongoing research.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
Lectures, student-led problem demonstration seminars, and laboratory work (computer assignments).

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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. Mandatory laboratory assignments with written reports and written exam with differentiated grades.

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 be offered in English.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Laboratory Work	U G#	3	Mandatory	A12	
0003	Problem seminars	U G#	1.5	Mandatory	S24	
0004	Written exam	G U 3 4 5	3	Mandatory	S24	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Robert Brännström 2023-02-15

Syllabus established

by Jonny Johansson, HUL SRT 2012-03-14

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