

Course syllabus

Projektkurs i signalbehandling – från idé till app Project Course in Signal Processing – from Idea to App

BMEN20, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED BME

Date of Decision: 2023-04-13

General Information

Elective for: BME4-sbh, C4, D4-ssr, D4-is, D4-hs, E4-ss, F4, MSOC1, MWIR2, Pi4, MMSR1

Language of instruction: The course will be given in English on demand

Aim

The course gives the knowledge of implementation of signal processing algorithms in mobile platforms. Further, the course aims to emphasize the problems that can occur in real time signal processing and evaluate the performance of the implementations.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to formulate a specification of the project
- be able to plan how this can be realized during the time for the project

Competences and skills

For a passing grade the student must

- be able to implement commonly used signal processing methods
- test various parts in the implementation and verify the solution
- present the solution orally and in a written report

Judgement and approach

For a passing grade the student must

- be able to analyze and evaluate the various parts of the implementation

Contents

Signal processing can be found in a wide range of applications, such as audio, video and health, which is reflected in the projects that can be done within the course.

The course starts with examples and laborations on signal processing applications in app environment. Each group then chooses an application and implements and evaluates suitable signal processing methods in app- environment. Reporting and demonstration constitute an important part of the project work and is introduced at an early stage of the course. The supervisors are available for questions and discussion at prescheduled times

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)

Assessment: Written report and oral presentation of the project work.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Assumed prior knowledge: EITF75 Systems and Signals or EITA50 Signal Processing in Multimedia or EITF15, BMEF25 Signal Processing - Theory and Applications or equivalent or BMEA05 Signals and systems or EITG10 Systems, Signals and Discrete Transforms. Basic course in programming.

The number of participants is limited to: 36

Selection: Completed university credits within the programme. Priority is given to students enrolled on programmes that include the course in their curriculum.

The course overlaps following course/s: ETI121

Reading list

- Material from the department.

Contact and other information

Course coordinator: Frida Sandberg, frida.sandberg@bme.lth.se

Course coordinator: Martin Stridh, martin.stridh@bme.lth.se

Course homepage: <http://bme.lth.se/education/courses/>

Further information: The first lecture should be seen as a mandatory call. Enrolled and registered students who do not have a valid absence will receive a cancellation of the course.