During the course a mini project is conducted. In this project, algorithms for speech enhancement are designed, implemented (in Matlab), evaluated, and documented. The project work is carried out in groups of 2 students which are formed in the beginning of the course. It is expected that some project work must be carried out either at home or at the university. The physical outcome of the project is a technical report motivating the algorithm design and describing the implementation and evaluation of the algorithms. As this technical report will be discussed during the evaluation, *participation in the mini project is compulsory* in order to qualify for the course exam.

For the mini-projects, students can sign up (till May 4th 2018) via Brightspace. To do so, go to the course page in Brightspace, select the tab "collaboration", and then select "groups".

The final report must be uploaded before June 29th 2018 via Brightspace. To do so, go to the course page in Brightspace, select the tab "assignments".

Project details:

- Design and build a single-channel speech enhancement (noise reduction) system for far-end noise reduction.
- Use matlab
- The speech enhancement system should consist of a gain function, noise PSD estimator and speech PSD estimator.
- Perform an evaluation of the speech enhancement system.

Bonus:

- Implement a multi-microphone system

Sound files for mini-project:

- Clean speech 1
- Clean speech 2
- Babble noise
- Aritificial nonstationary noise
- Stationary speech shaped noise

Evaluation

The course is evaluated in an individual oral exam. In order to qualify for this exam, the project report documenting the project must be handed in in advance. During the exam, content from the project report is discussed. In addition, a random topic covered in the lectures is discussed.The final grade will be based on the discussion of the project and the discussion on the random topic.