

SCHOOL OF ELECTRICAL ENGINEERING

**Signal Theory:** EQ1220 / EQ1210

Reading Assignment: Filtering (4/9) 2014–09–24,

**Notice:**

To be collected before Lecture 5.

The essay consists of five questions. If you successfully answer all questions, you obtain 1 bonus point for part A of the final exam. An essay with partially correct answers will give you 1/2 point.

For the answers you should not copy text from a textbook. Group work is also not allowed, but feel free to discuss with your fellows. The reports will be checked against plagiarism.

Be brief, i.e., at most 1 page.

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Explain (**in your own words**) ...

1. ... what the cross correlation between two weakly stationary stochastic discrete-time processes is. Give also mathematical definition(s) and example(s).
  2. ... what a discrete-time LTI-system is.
  3. ... the different mathematical relations between the discrete-time input (assumed to be a weakly stationary stochastic process) and output of a LTI-system. Elaborate in particular on the cross correlation and cross spectrum.
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