

SCHOOL OF ELECTRICAL ENGINEERING

Signal Theory: EQ1220 / EQ1210

Reading Assignment: Stochastic Processes (1/5) 2016–08–30,

Notice: Should be sent to "ra.signal.theory@ee.kth.se" before Lecture 3 (2016–09–06),
and after self assessment, papers are collected on Lecture 4 (2016–09–07).
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.

Explain (in your own words) ...

1. ...what *random variables* and *stochastic processes* are, and the difference between the 2 concepts.
 2. ...what the *probability distribution function*, the *probability density function*, the *mean* and the *variance* represent for a random variable.
 3. ...how the relationship between multiple random variables is modeled and what the measures of dependency are for jointly distributed random variables.
 4. ...how you interpret the concept of *stationarity* for random processes.
 5. ...how the concept of stationarity translates in mathematical terms. Develop in particular the role and the properties of the *autocorrelation function*.
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