

SCHOOL OF ELECTRICAL ENGINEERING

Signal Theory: EQ1220 / EQ1210

Reading Assignment: Stochastic Processes (1/5) 2015–08–26,

**Notice:** To be collected before Lecture 2 (2015-09-02)  
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 (*Chapter 2*).
  2. ...what the *probability distribution function*, the *probability density function*, the *mean* and the *variance* represent for a random variable (*Chapter 2*).
  3. ...how the relationship between multiple random variables is modeled and what the measures of dependency are for jointly distributed random variables (*Chapter 2*).
  4. ...how you interpret the concept of *stationarity* for random processes (*Chapter 3, some examples in Chapter 2*).
  5. ...how the concept of stationarity translates in mathematical terms. Develop in particular the role and the properties of the *autocorrelation function* (*Chapter 3*).
-