# Foundations Digital Communications, FEO3200, ht2012, period 2, course responsible & teacher: Tobias Oechtering

Status: Avslutad
Publicerad under: 2013-01-25 - 2013-02-06
Antal svar: 5
Procent av deltagarna som svarat: 100%
Kontaktperson: [Tobias Oechtering](#)

---

## 1. Do you have the feeling that you have learned relevant concepts and methods which will be important for your future studies?

5 svarande

| | | | |
|---|---|---|---|
| very much | 5 | | 100% |
| pretty much | 0 | | 0% |
| so and so | 0 | | 0% |
| only a little | 0 | | 0% |
| not at all | 0 | | 0% |

- *After the course, I have a better understanding of the operating details in communication systems.* (very much)
- *Honestly it was one of the best courses that I have ever had and I think I learned a lot during the course.* (very much)

---

## 2. Threshold concepts are core concepts that once understood, transform perception of a given subject. What threshold concept(s) did you learn in the course?

- *Complex random processes distributed detection different detection criteria*
- *I have learnt several threshold concepts such that stochastic processes, power spectral density, hypothesis testing, sufficient statistics.*
- *The bases of random variables and processes used in communication system theory. Signal detection theory and hypothesis testing. Distributed detection models. The course reviewed these areas in structured manner.*
- *Modeling, power spectrum density, detection theory, sufficient statistics, Bayesian test, N-P test, minmax test, and distributed detection.*

---

## 3. How useful in learning the concepts were the lectures?

5 svarande

| | | | |
|---|---|---|---|
| useful | 3 | | 60% |
| partially useful | 1 | | 20% |
| useless | 0 | | 0% |
| did not attend | 1 | | 20% |

*- I like they way, how the lectures were build up. Every lecture covered certain parts from the book, which had to be read and worked through individually as well. Due to time restrictions, one lecture couldn't cover the whole chapters fully, but more reviewed certain important aspects for recalling the material or for further reading.* (useful)
*- The lectures include all important concepts in the reading references, and even some tricky proffs.* (useful)
*- The lectures were very very helpful in order to learn the concepts. I believe the lecturer is a good "teacher", he tries to clarify every thing and motivate the students in the class.* (useful)

---

## 4. How useful in learning the methods were the problem sets and tutorials?

5 svarande

| | | | |
|---|---|---|---|
| useful | 4 | | 80% |
| partially useful | 1 | | 20% |
| useless | 0 | | 0% |
| did not attend | 0 | | 0% |

*- Problem sets were complicated and there were lot of problems in one set. One the other hand such amount of work is needed to gain good background knowledge in this area. These problems "force" students to work with selected aspects more in details, after reading the material. So in total I feel working with these problems was very useful for my further studies.* (useful)
*- The problem sets and tutorials cover all important concepts and problems in the lectures.* (useful)
*- General speaking, the problem sets are the most important part of the course. But some times we had lots of problems to solve and there were redundancy between the problems. Tutorials were useful in the sense that we had discussion together during the tutorials to the other ideas.* (useful)

---

## 5. Did the ticking, the preparation, and the tutorial help to improve the understanding of the problems?

5 svarande

| | | | |
|---|---|---|---|
| very much | 2 | | 40% |
| pretty much | 3 | | 60% |
| so and so | 0 | | 0% |
| only a little | 0 | | 0% |
| not at all | 0 | | 0% |

- *This is my first time experiencing this study model. It is extremely helpful.* (very much)
- *In my opinion, most of the problems had to be solved and prepared for presentation for every tutorial – there were few options to miss some solutions or skip some problem. Due to time limits, the ticking in the class was reasonable (during last tutorials it took about the full class time to cover 2-3 problem presentations). TAs did a good job in tutorial classes to explain the concepts and to gave some additional insights to the problems (including commenting alternative solutions and comparing with other concepts). Also I feel we got good consultation and established a good discussion with TAs for the preparation of HWs.* (very much)
- *good idea..* (pretty much)
- *It is a good idea to have ticking sessions. I have to make sure I understand the ticking problems. I also could get extra bonus.* (pretty much)
- *Ticking was nice because it forced us to prepare our self in such a way that we could present our solution. However, since we could not start to solve the next session there were no point to give hints about the next problem sets during each tutorial.* (pretty much)

---

## 6. Do you have the feeling that the project assignment requires from you to learn or improve relevant skills?

5 svarande

| | | |
|---|---|---|
| very much | 3 | 60% |
| pretty much | 1 | 20% |
| so and so | 1 | 20% |
| only a little | 0 | 0% |
| not at all | 0 | 0% |

- *research skills reading other topics than the intended PhD research* (very much)
- *The most important skill to improve is to search in present scholar about distributed detection.* (very much)
- *I feel it is reasonable to merge the project topic with ongoing PhD research work when topics are related with distributed detection etc. There are several challenges in the research to work, but as long as supervisors are around, I feel it is possible to work with these problems, during given time. So certainly the project will enhance the research, writing skills and develop further the knowledge related to the course and research area.* (very much)
- *Mathematics, research skills, Matlab coding, LaTex.* (pretty much)
- *I think it is too much for the students to have both project assignment and lots of problem sets. In my opinion, if the instructor continues to do that, the interest to the course will decrease. Since it makes sense only for the students who work on detection subject, to spend lots of time on both of them. I think to study the subject, problem sets are the most important parts.* (so and so)

---

## 7. Did you take the course remotely?

5 svarande

Yes  2  40%
No  3  60%

*- It consumed way much more time than expected. Discussion over skype were fruitfuls* (Yes)
*- Although I took the course remotely, the course book, the lecture notes and especially the tutorial Skype meeting do help me understand the key concepts.* (Yes)
*- The course setup supports (requires) self-study and following the course remotely. In my opinion it is not possible not to read the referred chapters in the text book to handle exercises. On the other hand, when following remotely, I see it is relevant, that there are TAs or supervisors around in the remote university, who are able to provide consultation for solving HWs and for understanding better the topics. It will be most likely needed since remote communication doesn't support that well the discussion about mathematical derivations etc.* (No)

---

## 8. How would you rate the level of difficulty of the course?

5 svarande

too easy  0  0%
ok  0  0%
tough  5  100%
too tough  0  0%

---

## 9. When did you read the reading assignments?

5 svarande

everything before the lecture  0  0%
some parts before ans some parts after the lecture  3  60%
mostly during problem solving  2  40%
used mostly the lecture slides only  0  0%
never  0  0%

---

## 10. How many hours of work did you spend in average on one problem set (8 problems)?

5 svarande

<5h  0  0%
5-9h  0  0%
9-13h  0  0%
13-18h  2  40%
>18h  3  60%

## 11. The master degree course is worth 7.5 credits and the PhD degree course is worth 12 credits. 1.5 credits correspond to 40h work. Do you think that the workload for this course is reasonable?

5 svarande
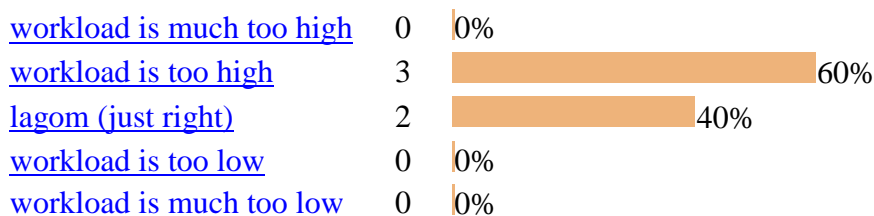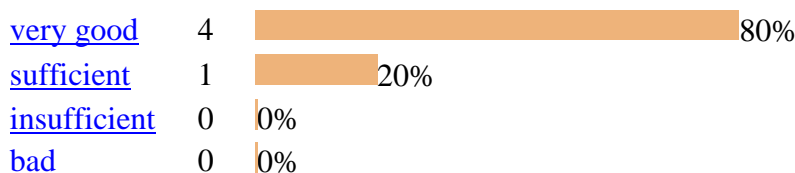
| | | |
|---|---|---|
| workload is much too high | 0 | 0% |
| workload is too high | 3 | 60% |
| lagom (just right) | 2 | 40% |
| workload is too low | 0 | 0% |
| workload is much too low | 0 | 0% |

## 12. What do you think about the course material?

5 svarande

| | | |
|---|---|---|
| very good | 4 | 80% |
| sufficient | 1 | 20% |
| insufficient | 0 | 0% |
| bad | 0 | 0% |

## 13. What was good and should not be changed?

- *Course content*
- *I think that the ticking and the tutorial are very helpful.*
- *I feel the tough setup and requirements of the course is useful to build up good background knowledge through intensive self study. Students will complain about tough requirements, but if students manage to work with the assignments, they will gain lot of new knowledge. So in general I think the given setup of the course is OK. I already heard, that the textbook of the course was changed from Trees (Trees ex-s were sometimes to mathematical – i.e required differential equations etc). One of my previous supervisors asked about the book used in this course and I got one comment about Lapidoth's book, that maybe he is making some things more complicated than they are. The Ex-s in Lap.'s book sometimes require knowledge outside the chapters or textbook (but it seems to be better, compared to Trees). In this course in my opinion a look to other similar textbooks is needed or good from time to time. On the other hand Lap.'s book explains almost all the derivations line-by-line and it is possible to follow and understand the text quite well. It seems that Lap. book is one of the best reference textbooks nowadays in current area.*
- *The lectures and tutorial sessions are perfect. I like the course evaluation based on assignment and ticking bonus. The problems in assignments are not too simple or too tough.*
- *"What did we do last lecture?" In short, the way that the teacher starts each session and motivates the students is perfect.*

## 14. How can the course be improved?

*- Adding more examples. Elaborate material in slides rather than copying from the book.*
*- Since the number of lectures and HWs is limited, it is not possible to add some parts before the chpt 12 in the text book (since later on several parts and some Ex-s refer back to these chapters). When the course specifies these chapters and give time, I think it is possible to read these during the current course time. I was maybe sometimes missing some feedback during preparation for the HWs – to be able to detect own weak areas and understand what to develop further. Sometimes silly mistakes or misunderstandings can happen, which are after some pointing possible to be found and corrected. Later on I felt the consultation with TAs ended up in good discussion about the background topics in Ex-s. Maybe what could be said to the new students, that the course requirements are hard and require dedication, time. There will be ex-s where obvious or easy solutions are not found and which require consultation with TAs (or with co-students). When a student is supported with consultations, then through intensive self-study, it is possible to learn several new things.*
*- I think it is better to give brief introductions to some important concepts in the chapters of the first reference book skipped in the course.*
*- Maybe less problems in each problem set (around six is ok). The course title is not good. I think it would be better if you specify in the title of the course that it"s about detection theory. Please take into account in the lectures the "Breaks". Two or five minutes is not enough. In order to be refreshed, at least Ten minutes is needed.*

---

## 15. For which students do you consider this course to be interesting and would recommend this course?

*- Communication and signal processing master"s studend and above.*
*- This course is absolutely relevant for any student aiming to do research in communications*
*- The course is useful (and even maybe mandatory) for M.Sc and Ph.D students who work with statistical models of signal processing and digital communication (incl. detection). I see that sensor networks and sensorics in some universities are handled also in computer engineering and electronics departments. They are usually more focused on practical hardware aspects. However, as long as they are dealing with signal estimation and detection, in my opinion such course would be useful also for these students. I also see that they sometimes tend to skip such level more theoretical courses and the background knowledge of these students may not be that good compared to the students who have early focused on studying math, statistics and other relevant courses.*
*- The students interested in communication systems with solid mathematical backgrounds.*
*- Detection theory is a basic course which is important and useful for most of the students in EE school. Specifically, for the PhD students in communication, signal processing, Control and for the Master students of communication.*

---

## 16. Please feel free to add any other comment?

*- Adding the part of the shaping filter could be a good addition if the distributed detection is shortened.*
*- It is better to schedule the lectures well. Sometimes, the break was really short.*
*- I believe the instructor of the course should specify every thing at the beginning, then both the students and the teacher should follow that structure. Changing the rules after some time*

*does not make sense. I think some parts of the course was not that much important and the teacher can just address to them, like Operational Spectral Density.*