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## Course Information

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**Instructor:**

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**Important Dates:**

Quizzes: NOT to be announced  
Midterm Exam: Thursday, April 26, 10:15-12:00, ELA1  
Final Exam: To be announced.

**Class Times and Locations:**

Wednesday, 16:15 - 18:00, ELA2  
Thursday, 10:15 - 12:00, ELA1

**Exercise session:** Thursday, 08:15-10:00, BM2131/BM2135

**Course Web Page:** <http://ipg.epfl.ch/doku.php?id=en:courses:2007-2008:pd>  
You can reach the web page easily by navigating from [ipg.epfl.ch](http://ipg.epfl.ch)  
Check the contents of this homepage frequently.

**Goal:** The goal of this introductory course in digital communication theory is to develop a relatively small number of fundamental principles that are the building blocks of modern communication engineering.

**What to Expect:** While aiming at communication engineering targets, the approach is fairly mathematical. Hopefully you will appreciate the way it all works out. However, if you have difficulties, talk to us sooner rather than later. Don't fall behind!

**How You Can Help Yourself:** Do the homework, ask questions, be proactive. Before class spend a few minutes to review what you have learned in the previous lecture and browse through the notes to be prepared on what will come next. Check the web to find out what we will do next. After class ask yourself if you understood and how can you be better prepared next time. We urge you, when you finish an exercise, to spend some time thinking about what it means, how the solution technique might be extended to more general problems, whether the model used in the exercise makes sense physically, etc.

**Homework:** Homework assignments will be given out weekly. Homework sets will be made available on the web on Tuesdays and questions will be answered during the exercise session on Thursday. You get most out of the homework if you make a reasonable effort to solve it on your own and come at the exercise session with questions. After the exercise session you have one week to complete the homework (You are required to turn in your solution one week after it has been discussed in the Exercise session). We will choose one problem from the homework set and grade it. Solutions will be posted on the web.

**Quizzes:** There will be a small number of random quizzes given during the semester. A quiz is a short **closed-book** exam whose content is related to the material taught in class. A student following the lectures should have no difficulties in successfully completing the quizzes. The goal is to encourage you to attend the lectures and to stay alert.

**Exams:** There will be a midterm exam in class and a final exam during the scheduled final exam period. The midterm exam will be on the 26<sup>th</sup> of April, and the final exam will be scheduled by the Service Academique.

**Grading:** Homework 15%, Quizzes 5%, Midterm exam 35%, Final exam 45%.

**Course Content:** A brief outline of the course is given in the course catalog description file, which can be found on the class web page, under the “General” section. You are also encouraged to read the first chapter of the class notes which explains what material will be covered in more detail.

**Prerequisites:** Apart from standard math courses, you will need what you have learned in *Processus stochastiques pour les communications*

**Recommended Texts:**

1. S. G. Wilson, *Digital Modulation and Coding*, Prentice Hall, 1994.
2. E. A. Lee and D. G. Messerschmitt, *Digital Communication*, Kluwer Academic Publishers, 1994, second edition.
3. J. G. Proakis and M. Salehi, *Communication Systems Engineering*, Prentice Hall, 1994.
4. J. M. Wozencraft and I. M. Jacobs, *Principles of Communication Engineering*, Waveland Press Inc. 1965.
5. S. Benedetto and E. Biglieri, *Principles of Digital Transmission with Wireless Applications*, Kluwer Academic, 1999.