Advanced Digital Communications

Time and location:
- Mondays, 8–10, INM 10 (lecture)
- Mondays, 10–12, INM 10 (exercise)
- Fridays, 13–15, INM 10 (lecture)

Instructor:
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Office hours: by appointment.

Teaching assistants:
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Prerequisite:
Principles of Digital Communications

Web page: [http://ipg.epfl.ch/](http://ipg.epfl.ch/)

Textbook:
Upamanyu Madhow’s *Fundamentals of Digital Communication*, (Cambridge University Press, 2008) has a large overlap with the material covered in the course.

Course mechanics:
- Weekly assignments (10%),
- Midterm quiz (40%),
- Final exam during finals period (50%).

(Very) Approximate Outline:
- Review of Principles of Digital Communication
- Intersymbol Interference Channels
- Viterbi and BCJR algorithms
- Linear Estimation, Equalization
- OFDM
- Synchronization (?)
- Wireless Communication, Multiple Access, Information Theory Connections
Reference Material:

4. J. Chioffi, Lecture Notes for EE379 at Stanford University (available online).
5. G. D. Forney, Jr., Lecture Notes for 6.451 at MIT. (available online).
6. S. Diggavi, Lecture Notes for Advanced Digital Communications at EPFL. (available on course website).
7. B. Rimoldi, Lecture Notes for Principles of Digital Communications at EPFL. (available on course website).