INFORMATION THEORY AND CODING

Time and location:
Tuesdays, 13:15–15:00, INM 202 (lecture)
Tuesdays, 15:15–16:00, INM 202 (exercise)
Fridays, 13:15–15:00, INM 202 (lecture)
Fridays, 15:15–16:00, INM 202 (exercise)

Instructor:
Emre Telatar (INR 117, 37693, `Emre.Telatar@epfl.ch`)
Office hours: by appointment.

Teaching assistants:
Shrinivas Kudekar (INR 034, 37517, `shrinivas.kudekar@epfl.ch`)
Shan-Yuan Ho (INR 030, 37535, `shan-yuan.ho@epfl.ch`)

Administrative assistant:
Yvonne Huskie, (INR 133, 37694, `Yvonne.Huskie@epfl.ch`)

Prerequisites:
Probability and Statistics (I and II) or
Stochastic processes for communications

Web page: `http://ipg.epfl.ch`, (navigate to: Courses, and then to: Information Theory and Coding)

Textbook: T. M. Cover and J. A. Thomas, *Elements of Information Theory,* Wiley, 2006.

Course mechanics:
Weekly assignments,
Midterm quiz (50%), Tentative Date: Friday, November 9.
Final exam during finals period (50%).

Approximate Outline:
Information Measures (1–2 lectures)
Data Compression (8–10 lectures)
Data Transmission (8–10 lectures)
Coding Techniques (2–3 lectures)
Lossy Data Compression (2–3 lectures)
Additional Topics (2–3 lectures)

Reference Material:
1. R. G. Gallager, *Information Theory and Reliable Communication,* Wiley, 1968.
2. C. E. Shannon (with W. Weaver) *The Mathematical Theory of Communication*, U. of Illinois Press, 1963. (see also the course webpage)
3. J. M. Wozencraft and I. M. Jacobs, *Principles of Communication Engineering,* Wiley 1965 (also, Waveland, 1990).