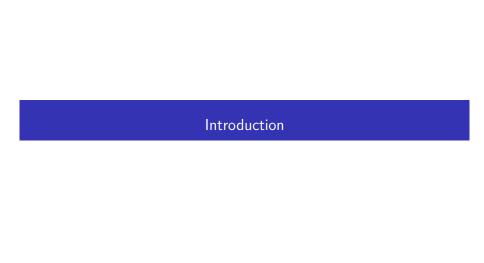


Lecture notes 2016-2017



Organization

Professors:

Lectures: Nicolae Cleju

Laboratories: Nicolae Cleju

Grades

Final grade = 0.6 Exam + 0.2 Lab + 0.2 Homeworks

Time schedule

- ▶ 14 weeks of lectures (3h each)
- ▶ 14 weeks of laboratories (2h each)
- ▶ Office hours: Friday 13:00 15:00 (best by appointment)

Course structure

- 1. Chapter I: Discrete Information Sources
- 2. Chapter II: Discrete Transmission Channels
- 3. Chapter III: Source Coding
- 4. Chapter IV: Channel Coding

Bibliography

- 1. *Elements of Information Theory*, Valeriu Munteanu, Daniela Tarniceriu, Ed. CERMI 2007
- 2. *Elements of Information Theory*, Thomas M. Cover, Joy A. Thomas, 2nd Edition, Wiley 2006
- 3. Transmisia si codarea informatiei, lectures at ETTI (Romanian)
- 4. *Information and Coding Theory*, Gareth A. Jones, J. Mary Jones, Springer 2000



Basic notions of probability

- ▶ Distribution (probability mass function)
- ▶ Discrete distribution
- Alphabet
- ► Random variable = the outcome of a random experiment
- Logarithm function
- Exponential function
- Average of some values

Basic properties

► Two independent events:

$$p(A \cap B) = p(A) \cdot p(B)$$