

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

School of Computer and Communication Sciences

Handout 1

General Course Information

Principles of Digital Communications

Feb. 19, 2025 (updated Mar. 14, 2025)

Principles of Digital Communications

Time and location:

Wednesdays, 13h15–16h, CM 1 2

Fridays, 13h15–16h, AAC 2 31

Instructor:

Emre Telatar (INR 117, emre.telatar@epfl.ch)

Office hours: by appointment.

Graduate teaching assistants:

Adway Girish (INR 139, adway.girish@epfl.ch)

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Student assistant:

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Administrative assistant:

Muriel Bardet, (INR 137, muriel.bardet@epfl.ch)

Prerequisites:

Signal processing for communications

Stochastic processes for communications

Web page:

<https://moodle.epfl.ch/course/view.php?id=15897>

<https://go.epfl.ch/PDC-2025>

Textbook:

B. Rimoldi, *Principles of Digital Communication: A Top-Down Approach*,
Cambridge University Press, 2016. ISBN: 9781316337387.

Course mechanics:

Midterm (35%, 9th April),

Project (20%, tentatively late April – early May),

Final exam during finals period (45%).

Approximate Outline:

Hypothesis testing and discrete-time receiver design (3 weeks)

Continuous-time receiver design (3 weeks)

Signal constellation design (3 weeks)

Waveform design, coded transmission (3–4 weeks)

Additional topics (1–2 weeks)