

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE
School of Computer and Communication Sciences

Principles of Digital Communications:
Summer Semester 2007

Assignment date: May 24, 2007
Due date: May 31, 2007

Homework 8

Problem 1. Lecture notes Problem 1 (*Minimum-Energy Signals*) of Section 4.7

Problem 2. Lecture notes Problem 2 (*Orthogonal Signal Sets*) of Section 4.7

Problem 3. Lecture notes Problem 3 (*Antipodal Signaling with Rayleigh Fading*) of Section 4.7

Hint: Use integration by parts. You may also need to use the fact that

$$\frac{d}{dx} \int_x^\infty f(\xi) d\xi = -f(x).$$

Problem 4. Lecture notes Problem 4 (*Bandpass Sampling*) of Section 5.5