Signal & Systems

Lecture 0: Logistics

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Template made by Panagiotis Papagiannopoulos

Logistics

- **Lectures**:
  - Around 17 Lectures
  - 1 Recitation Lecture
  - A few hands-on examples/tutorials
- **Examination**:
  - **Choose from:**
    - *(150 seats only!)* Intermediate Exams **(30%)** + Final Exam **(70%)**
    - Final Exam Only
  - Optional Assignments **(+10%)**
- **Office Hours**:
  - **Mon & Tue** *(09:00-11:00)*
  - 24/7 by email (`costashatz@upatras.gr`, subject: *ECE_SS_AM*)
- **Material and Announcements**

Laboratory of Automation & Robotics

What is this course about?

Signal & Systems:

- Signals
- Systems, Impulse Response
- Convolution/Correlation
- Fourier Transform
- Practical Spectral Analysis (DFT, FFT, PSD)
- Random Variables and Stochastic Processes
- Noise Models & Filtering

Course Schedule

- **Part I: Signals & Frequency Analysis**
  - Roughly 3 weeks
  - Signals, Systems, Linear Systems, Fourier Transform
- **Part II: Practical Signals & Filters**
  - Roughly 3 weeks
  - Spectral Leakage, Windowing, LTI filters, IIR/FIR filters
- **Part III: Statistical Signal Processing**
  - Roughly 2 weeks
  - Stochastic Processes, Noise Models, PSD, Case studies

Lectures Format

- **Lectures:**
  - 2-3 hours
  - Theory
  - Hints for personal reading!
  - Live code examples!
  - Ask questions please!
- **Hands-on Examples:**
  - Hands-on in Python
  - Mathematical Modeling & Analysis
  - Implementation
  - Interpretation of results
- **Practice Exercises:**
  - Each week we will give you several practice exercises
  - 1 hour/week, we solve some of these

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- I assume that you **study on your own another 6 hours per week** (aka, one day per week is dedicated to this course!). And you should! Lectures are dense!!
- This includes only the effort for the mandatory parts of the course (i.e. the effort for the optional assignments does not count).

Thank you

- **Any Questions?**
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