UE Signals and systems

ECTS
3 credits

Component
UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)

Semester
Automne

> **Teaching language(s):** English

> **Open to exchange students:** Yes

> **Code d'export Apogée:** PAX7ECAA

Presentation

Description

The aim of the course is to provide the basic mathematical tools to study continuous and discrete signals and linear time-invariant systems using SciPy.

Objectives

Outline:

1. Introduction
2. Discrete mathematical tools
3. Discrete Linear time-invariant systems
4. Discrete filters design
5. Continuous mathematical tools
6. Continuous Linear time-invariant systems
7. Analog filter design
8. Sampling theory

Course parts

UE Signals and systems- CM	Lectures (CM)	7,5h
UE Signals and systems - TD	Tutorials (TD)	7,5h
UE Signals and systems - TP	Practical work (TP)	12h

Recommended prerequisites

Basic mathematical knowledge (integral, differentiation, complex numbers,. . .)

Syllabus

a. Oppenheim, A. V., Willsky, A. S., & Young, I. T. (1983). Signals and systems. Englewood Cliffs, N.J Prentice-Hall.
b. Najarian, K., & Splinter, R. (2012). Biomedical signal and image processing. Taylor & Francis.

Useful info

Campus

> Grenoble - Scientific Polygon