Coding and Retrieval of Information

ECTS credits
4 credits

In brief

Course langage: French

Presentation

Prerequisites

Common Core Courses

Learning objectives

The coding and retrieval of information consists in setting up a system capable of retrieving information (structured, textual, visual, sound.) in order to meet a user's expressed need. The aim of this course is to introduce students to the main methods of searching, recognizing, extracting, formatting, and routing information, while being able to model, choose, and implement the entire system for obtaining relevant information.

Description of the programme

Images (4H CM + 8H TP : M. Roche). Human visual perception and TP in image watermarking and image quality using human vision.

Quantum Information (6H CM : T. Durt)
Quantum Information theory is the result of the mixing of two major theories of the XXth century, namely quantum theory and information theory. The goal of this course is to give a brief overview of this new discipline and to make the difference between theoretical utopias and practical
The aim of the course is to give a brief overview of this new discipline and to distinguish between theoretical utopias and practical realizations & thus to apprehend new concepts & a non-classical vision of information.

Cryptography (6H CM: P. Préa, 2H CM: T. Durt)

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Since its invention in antiquity, cryptography has been in constant evolution. It has even recently undergone a profound paradigm shift
paradigm shift with the introduction of public key methods. This course is a continuation of the cryptography course of the EU ESN, where an overview of different
overview of different techniques.

Language C (6H CM, 8H TP. F. Galland)
This module aims at giving students an experimental methodology in numerical sciences:
- Quality, validity and efficiency in programming (application in C),
- Introduction and awareness of numerical computation problems

Generic central skills and knowledge targeted in the discipline

- Develop technical and scientific innovations (Ability to stimulate one's imagination, ability to analyze the context, ability to mobilize a scientific/technical culture, ability to invent creative, ingenious and original solutions)
- Solve complex and transdisciplinary problems (Ability to understand and formulate the problem, ability to take into account the uncertainty generated by complexity, ability to converge towards an acceptable solution)
- Develop and conduct international scientific and technical projects (ability to rapidly deepen a field).
- Carry out a personalized analysis in relation to the course content, which aims to develop one's critical thinking and strategic vision.

How knowledge is tested

Continuous assessment (CC):
1 CC (written + report) 100% of the final grade

Teaching team

- N.Bertaux
- T. Durt
- F. Galland
- P. Préa
- M. Roche

Sustainable Development Goal



Quality education



Descent work and economic growth

Total des heures **40h**

CM	Master class	24h
TP	Practical work	16h

Useful info

Name responsible for EU

Lead Instructor
Pascal Prea
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