Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF473	Introduction to Generative Artificial Intelligence	8	3	0	0	3	5

Prerequisites	
Admission Requirements	
Language of Instruction	French
Course Type	Elective
Course Level	Bachelor Degree
Objective	The aim of this course is to enable students to grasp the fundamental mathematical, algorithmic, and engineering principles underlying generative artificial intelligence systems; and to teach how large language models (LLMs), image and text generation models, and modern generative architectures work, how they are trained, how they are evaluated, and how they can be deployed in real-world applications.
Content	(Below) It can be found in the topics section.
References	Build a Large Language Model (From Scratch), Sebastian Raschka, September 2024

Theory Topics

Week	Weekly Contents
1	What is Generative AI?
2	Probabilistic Language Modeling
3	Deep Learning I
4	Deep Learning II
5	Attention Mechanism and Transformer Fundamentals
6	Transformer Decoder and LLM Architecture
7	LLM Training I
8	Midterm
9	LLM Training II
10	Instruct Models and RLHF
11	Prompt Engineering
12	Retrieval Augmented Generation (RAG)
13	Tool Calling and Agentic Systems
14	End-to-End Project Presentations