

Course Syllabus

Domaine : science économique et gestion et science financière	Filière :
Spécialité : M1 banque et assurance	
Semestre : S3	Année scolaire : 2025/2026

Identification de la matière d'enseignement	
Intitulé : <i>Introduction to Artificiel intelligence</i>	
Unité d'enseignement : transversale	
Nombre de crédits : 02	Coefficient : 02
Volume horaire hebdomadaire total : 1h30	
Cours (nombre d'heures par semaine) : 1h30	
Travaux dirigés (nombre d'heures par semaine) : 0	
Travaux pratiques (nombre d'heures par semaine) : 0	

Responsable de la matière d'enseignement	
Nom, Prénom, Grade :	Chaima ahlem karima djellab MCB
Localisation du bureau :	-
Email :	chaima-ahlem-karima.djellab@univ-annaba.dz
Horaire du cours et lieu :	Mercredi à 15.30 en ligne

Description de la matière d'enseignement		
Pré-requis : Students taking this course are expected to have: 1. Basic Computer Skills 2. Mathematics and Logic Foundations 3. No Prior Programming Required 4. Language Proficiency		
Objectifs de la matière d'enseignement : By the end of this course, students will be able to: -Remember the basic concepts and techniques of Artificial Intelligence. - Understand how AI is transforming financial services, banking operations, and insurance processes. - Apply AI methods (regression, classification, clustering, NLP) to real-world problems in banking and insurance. - Analyze financial and customer data to identify fraud, risks, and market opportunities. - Evaluate the effectiveness and ethical implications of AI solutions in finance and insurance. - Create AI-based models or mini-projects to improve decision-making, customer services, or risk management.		
	Contenu de la matière d'enseignement	
1. Foundations 2. Data and Risk Analysis 3. AI Applications in Banking & Insurance 4. Advanced Topics & Case Studies 5. Project Integration		

Course Description

This course introduces students to the fundamentals of programming using Python. It focuses on problem-solving, algorithmic thinking, and the design of simple applications, with a strong emphasis on examples from economics, management, and finance.

By the end of the course, students will be able to write, test, and debug Python programs and apply them to practical problems.

Modalités d'évaluation

Nature du contrôle	Pondération en %
Examen	60%
Micro – interrogation	20%
Travaux dirigés	Non concerné
Travaux pratiques	Non concerné
Projet personnel	Non concerné
Travaux en groupe	20%
Sorties sur terrains	Non concerné
Assiduité (Présence /Absence)	Non concerné
Total	100%

Références & Bibliographie

- Marr, B. (2024). Artificial Intelligence in Practice: 50 Successful Applications Across Industries. Wiley.
- Aziz, S., & Dowling, M. (2023). Artificial Intelligence in Finance. Routledge.
- OECD (2021). Artificial Intelligence in Society. OECD Publishing.

Planning du déroulement du cours (prévisionnel)		
Sem.	Titre du cours	Date
1	Introduction to AI – concepts, history, and applications in finance, banking, and insurance.	
2	Digital transformation of financial services: AI, Big Data, and FinTech.	
3	Data collection and cleaning in financial institutions (transactions, claims, customer profiles).	
4	Feature engineering for credit scoring and risk prediction.	
5	Dimensionality reduction – simplifying financial models without losing accuracy.	
6	Regression models – predicting loan defaults, pricing insurance premiums.	
7	Classification – fraud detection, customer credit scoring.	
8	Neural networks (intro) – stock market forecasting, automated trading	
9	Clustering – customer segmentation for personalized banking or insurance products.	
10	Case studies: AI in fraud detection, robo-advisors, and claim automation.	
11	NLP in finance – chatbots, customer support, and sentiment analysis of financial news.	
12	Model evaluation – accuracy, precision, recall, risk of false positives in fraud detection.	
13	Ethical issues – bias in credit scoring, transparency in AI-driven insurance models.	
14	Team project presentations – AI solutions for banking or insurance challenges.	
15	Course review and exam preparation.	

Signature