The Hong Kong University of Science and Technology (Guangzhou)

UG Course Syllabus

[Course Title] **Financial Data Analysis**

[Course Code] **FTEC 4320**

[No. of Credits] **3**

[Any pre-/co-requisites] **DSAA 2011 Machine Learning 1.**

1.Name and Office Hour of Instructor

Shuo Sun Friday 7-8 PM at W4-407

2. Lecture (Tutorial) Day, Time, and venue

Lecture: Wed 0900-1150 W1-223

Tutorial: Fri 1800-1850 W2-201

【The above information is subject to the latest updates on Canvas.】

Course Description

Financial Data Analysis explores state-of-the-art approaches for extracting insights and building AI-driven intelligent systems using diverse financial data sources. Students will engage in hands-on projects that involve analyzing and modeling multimodal financial data, including time-series (e.g., stock prices), textual data (e.g., news and social media), graph data (e.g., supply chain), tabular data (e.g., company fundamentals), and alternative data (satellite images). Drawing on tools from artificial intelligence and statistical modeling, students will learn to design and evaluate data-driven solutions to real-world financial tasks such as market prediction, sentiment analysis, and risk estimation. Through guided projects and open-ended problem-solving, students will gain experience in end-to-end data workflows, from acquisition and preprocessing to modeling and evaluation. The course emphasizes implementation and experimentation, preparing students for future research and industry roles in FinTech.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Demonstrate fundamental understanding of multimodal financial data structures

2. Apply core machine learning and AI methods to analyze, model, and interpret financial data

3. Construct end-to-end data analysis workflows for various financial problems

4. Evaluate the suitability and limitations of various modeling approaches under financial contexts

5. Communicate analytical results and data-driven insights clearly and effectively, using visual, written, and verbal formats

6. Collaborate effectively in interdisciplinary teams to solve open-ended financial data analysis problems using modern AI and data mining tools

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Assignment 1	20%	March 6, 2026
Assignment 2	20%	March 24, 2026
Final project	45%	May 10, 2026
Presentation	15%	May 6, 2026

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs
Assignment 1	ILO1, ILO2, ILO3. ILO4
Assignment 2	ILO1, ILO2, ILO3. ILO4
Final project	ILO1, ILO2, ILO3. ILO4
Presentation	ILO5, ILO6

Grading Rubrics

For assignments 1 & 2 and final project, you will be evaluated based on the data analysis skills (25%), code quality (25%), presentation of results and explanations (25%), creativity (10%) and performance (15%).

For presentation, you will be evaluated based on organization (25%), slide quality (25%), technical soundness (25%) and responses to questions (25%).

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic

		judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Course AI Policy

The use of Generative AI is permitted, but do not reply on AI too much.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

N/A

Required Texts and Materials

N/A

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST(GZ)'s Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Regulations for Academic Integrity and Student Conduct for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

[Optional] Additional Resources

N/A