

Capital University of Economics and Business

Overseas Chinese College

Course Syllabus

Year and Semester	2025 Fall					
Course Name	Financial data analysis and Software Application					
Course Code	MAT411					
Course Type	☐ General Education (Required) ☒ General Education (Elective) ☐ Basic Disciplinary Course ☐ Professional Course (Required) ☐ Professional Course (Elective) ☐ Professional Course (Expanded)					
Course Credits	2					
Course Hours	Total Class Hours	32	Lecture Hours	16	Experiment (Computer) Hours	16
Applicable object	☐ Freshman ☐ Sophomore ☐ Junior ☒ Senior Business Administration (Accounting) Information Management and Information Systems (Finance)					
Prerequisites	MAT111/MAT112/MAT221/MAT231					
Instructor	Lemon Li					
Contact Information	Office: C217 Tele: 010-83951092 Email: occ_limeng@cueb.edu.cn					
Office Hour	TBA					
Learning Centre	TBA					
Grade/Section	22CFA					
Course Time/Place	W8:00-9:35					
Textbook						

Course Description

In the ever - evolving landscape of finance and business, the ability to analyze complex data, make informed decisions, and manage risks effectively has become paramount. This course, "Advanced Financial and Business Analytics," is meticulously designed to equip students with a diverse set of cutting - edge analytical tools and techniques that are essential for success in today's data - driven world.

Through a well - structured curriculum spanning 16 weeks, students will embark on a comprehensive journey that combines theoretical knowledge with practical applications. The course adopts a multi - faceted approach, incorporating classroom lectures, preview materials in the form of PPTs and videos, group discussions, and hands - on homework assignments to ensure a deep and holistic understanding of the subject matter.

Student Learning Objectives

On successful completion of this exam, candidates should be able to:

Knowledge	Explain the concept of various mathematical models. Demonstrate how the probabilistic modeling works in real life Describe and evaluate a financial model Identify and describe the writing of a CFA thesis meet the
Capability	Apply on real financial situations Assess the financial performance using models learned Planning a marketing strategy Demonstrate effective professional communication
Mindset	Be logical, methodical, consistent and accurate Apply critical thinking in the process of decision making

Teaching Methods

Throughout this semester, we study a variety of modeling types. Topics include proportionality models, fitting models to data, creating simulations, dimensional analysis, probabilistic modeling, optimization, and both discrete and continuous models. For day-to-day details, see the calendar pages of our class website.

Additionally, students work in small groups on a semester-long modeling project. Early-semester activities include discussions of possible project ideas, a workshop on technical writing, project proposals, and brief presentations in class. Later activities include individual group meetings, peer-reviewed rough drafts, and longer final presentations to the class.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Mid-Term Test	20%	A cumulative midterm examination will be given based on all of the contents of the first half of the class. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Homework	15%	Homework problems will be assigned throughout the term, including but not limited to: terminologies, research project, and reading assignments.
Quizzes	15%	There will be at least 2 quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the readings. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	10%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation.

		The topics can be selected from the textbook or lectures. Each group needs to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation. The percentage is: content 50% + organization 10% + language 15% + performance
Participation	10%	Individuals will be asked to participate individually in questions during the semester. Students are required to meet with their teachers every week. Their performances should be counted in their participation.
Attendance	10%	Because the course covers a great deal of material, attending every class session is very important for performing well. Being late for 15 minutes or more is considered an absence. Five hours or above of unexcused absences will result in the lower level of the final grade by one grade band (e.g. from C- to D+). Any excused absence must be discussed directly with the teacher. Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly, but students are welcome to continue attending classes. An incomplete grade (I) will be considered in case of medical or family emergencies.
Total	100%	

DetailedGradeComputation

	BeforeMidterm	AfterMidterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	10%
Quizzes	5%	10%
Presentation		10%
Mid-TermTest	20%	
Finalexam		20%
Total	40%	60%

AssessmentofStudentPerformance

Self-Study and Reading ability Practice

Instructor will give out the Learning modules or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

Homework

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

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Participation

Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.

Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.

Frequent visiting the instructor and chatting in English during office hours is highly recommended.

Any misbehavior and non-class-related activities in class will result in the lower level of the participation grade, including ringing cell phones.

All above behaviors will be solely evaluated by the instructor for scoring.

TopicalCourseOutline (original)

Week	Topics	Platform	Homework
	Preview PPT&videosforlearningmodule	Wechat group&Xue xitong	
	Syllabus module11:Class orientation	Classroom	HomeworkforM01
2	Preview PPT&videos for learningmodule2	Wechatgroup&Xuexitong	
	learningmodule2: RegressionAnalysis	Classroom	HomeworkforM02
3	Preview PPT&videosforlearningmodule	Wechatgroup&Xuexitong	
	learningmodule3: RegressionAnalysis	Wechatgroup&TencentMeeting &Xuexitong	HomeworkforM03
4	Preview PPT&videosforlearningmodule	Wechatgroup&Xuexitong	

	learningmodule4: Factoranalysis&Clustering analysis	Classroom	HomeworkforM04
5	Preview PPT&videosforlearningmodule5	Wechatgroup&Xuexitong	
	learningmodule5: Principalcomponent analysis&Discriminant	Classroom	HomeworkforM05
6	Preview PPT&videosforlearningmodule	Wechatgroup&Xuexitong	
	learningmodule6: ArtificialNeuralNetwork	Classroom	HomeworkforM06
7	learningmodule7: ArtificialNeuralNetwork (continued)	Classroom	
	ComprehensiveapplicationofANN		HomeworkforM07
8	learningmodule8:Comprehensive financialcaseanalysis	Classroom	
	Groupdiscussion		
9	Preview PPT&videosforlearningmodules learningmodule9:Comprehensive financialcaseanalysis(continued)	Classroom	HomeworkforM09
10	Preview PPT&videosforlearningmodules LearningmoduleM10:proportionality models	Classroom	
	Groupdiscussion		HomeworkforM10
11	Preview PPT&videosforlearningmodules	Classroom	
	LearningmoduleM11:dimensional analysis&Groupdiscussion		HomeworkforM11
12	Preview PPT&videosforlearningmodules LearningmoduleM12:riskcontrol analysis	Classroom	HomeworkforM12
	Groupdiscussion		
13	Preview PPT&videosforlearningmodules LearningmoduleM13:decision analysis	Classroom	HomeworkforM13
	Groupdiscussion		
14	Preview PPT&videosforlearningmodules LearningmoduleM14:Questionnaire designandanalysis	Classroom	HomeworkforM14
15	Preview PPT&videosforlearningmodules LearningmoduleM15:Questionnaire designandanalysis	Classroom	HomeworkforM15
16	FinalPresentation-1	Classroom	

17	FinalPresentation-2	Classroom	
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Teacher's Office Hour

The instructor's office hour is shown in front of the office door.

Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor at least once per week for good communication and effective learning, which is recorded in the students' participation.

The time can be scheduled by instructors, students, or both

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz, test, or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester, the definition of plagiarism will be carefully explained. When any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source noted. If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".

Note: This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified, and a new syllabus will be given.

Instructor:LemonLi

Department Head:JingningLi

