Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2026 Spring					
Course Name	The Application of Power BI in Business					
Course Code	MIS123					
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☐ Basic Disciplinary Course ☑ Professional Course (Required) ☐ Professional Course (Elective) ☐ Professional Course (Expanded) ☐ Professional Course (Advanced)					
Course Credits	1					
Course Hours	Total Class Hours	16	Lecture Hours	0	Experiment (Computer) Hours	16
Applicable object	☑ Freshman ☐ Sophomore ☐ Junior ☐ Senior					
	☑ Business Administration (Accounting)					
	☐ Information Management and Information Systems (Data Governance)					
Prerequisites						
Instructor	Changjun Ru Jingning Li					
Contact Information	Office: C217					
	Tele: (010)83951082					
	Email: ruchangjun@cueb.edu.cn lijingning@cueb.edu.cn					
Office Hour	TBA					
Learning Centre	TBA					
Grade/Section	2025 级 BA1 班 2 班 3 班 4 班					
Course Time/Place	2025BA1 班：TH 9:55-11:30 2025BA2 班：M 8:00-9:35 2025BA3 班：F 9:55-11:30 2025BA4 班：TH 9:55-11:30					
Textbook	The textbook and reference book mainly cover the knowledge that instructor introduced in the class, but not limited to these books, students should have the ability to search and expose to the resources to support your study.					

Reference Book

Hands-on Power BI for Business Data Analytics and Visualization

Course Description

The Application of Power BI in Business is an introductory, practical, project-based course designed for first-year undergraduate students. The course provides a systematic understanding of Business Intelligence (BI) through the use of Microsoft Power BI, covering the entire analytical workflow — from data

acquisition and cleaning, to data modeling, visualization design, and insight communication.Through a blended format of lectures, hands-on labs, and a team-based final project, students will learn how to transform raw data into meaningful business insights. Across eight weeks, students will complete a full analytical cycle using real or open datasets, construct star-schema data models, develop DAX measures, create interactive dashboards, and present their findings in a professional group presentation. The course emphasizes practical skills, analytical thinking, and the role of data in supporting business decision-making. It also serves as foundational preparation for advanced courses such as Data Warehousing, Business Intelligence, Database Systems, and Data Modeling.

Student Learning Outcomes

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

Knowledge	• Understand the basic concepts, architecture, and business applications of Power BI. • Learn the complete workflow of business data analytics, including data acquisition, cleaning, modeling, and visualization. • Grasp foundational modeling concepts such as the star schema, fact tables, and dimension tables. • Understand the fundamentals of DAX and its role in calculating business metrics.
Capability	• Be able to independently complete the full analytical process from data import to report visualization. • Use Power Query to perform data transformation and build well-structured data models. • Design clear, interactive, and business-oriented Power BI dashboards. • Generate meaningful business insights and propose actionable recommendations based on data analysis. • Collaborate effectively in teams to complete analytical projects and deliver professional presentations.
Mindset	• Develop a data-driven mindset and recognize the importance of using data to support business decisions. • Build strong data awareness, including data quality, consistency, and security. • Cultivate analytical and critical thinking skills to identify issues, generate hypotheses, and interpret findings. • Foster curiosity, confidence, and a continuous-learning attitude toward applying analytics tools to real-world problems. • Cultivate the spirit of Xi Jinping Economic Thought

Website Source

Teaching Methods

The course adopts a "teacher-guided, team-based, project-driven" model. This course adopts a blended,

student-centered teaching approach that integrates multiple instructional methods to enhance both conceptual understanding and practical competence. **Lectures** are used to introduce core theories, analytical frameworks, and Power BI fundamentals. **Hands-on demonstrations** allow students to observe the complete workflow of data acquisition, cleaning, modeling, and visualization in real time. Through in-class **practice sessions**, students operate Power BI independently and immediately apply what they have learned. **Weekly project-based learning** guides students to develop their own business analytics projects, transforming knowledge into authentic application. **Group collaboration** fosters teamwork, communication, and shared problem-solving. **Case-based instruction** exposes students to real-world business scenarios and best practices in data-driven decision-making. Finally, **presentations and peer feedback** are used to cultivate students' analytical communication skills and reflective learning abilities. Together, these methods ensure that students not only master technical skills but also develop the mindset required for effective business intelligence analysis.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of computer operation questions and case analysis questions. Students should rely primarily on homework assignments to give them a sense of what they may see for material on exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and it should be completed in class.
Homework	10%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. The graded assignments may be kept by the tutor for reference and won't be returned to students.
Quizzes	10%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. 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	20%	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 need to finish a PPT related to the topic which is given and hand in the related resources to the teacher before the presentation.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm

Attendance	5%	5%
Participation	5%	5%
Homework	5%	5%
Quizzes	5%	5%
Presentation		20%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Assessment of Student Performance

☞ ***Self-Study and Reading ability Practice***

Instructor will give out the chapters 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%.

☞ ***Attendance***

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.

☞ ***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.

☞ ***Textbook***

Students must bring the textbook to class.

Topic Course Outline (original)

Week	Content	Homework
1	**Course introduction,** ● Team Formation, ● Topic Selection; ● Power BI installation and environment configuration ● Excel basic knowledge	Complete team formation and confirm project topic Power BI installed; group project topic confirmed
2	**Chapter1: Case Study: Power BI full-process demonstration** data import → cleaning → modeling → visualization → analysis → business insights	Follow the demo to complete the full workflow Hands-on full process experience; complete initial visualization pages
3	**Chapter2: Data input and connection** ● Web page ● database ● Excel data export	Apply data import to group project Project data sources successfully imported
4	**Chapter3: Data cleaning and transformation** ● Power Query practical session ● Cleaning non-standard data ● Sort, Filter,Merge and Split column ● Add index, if column ● Merge Queries: Aggregate& Expand ● Summarize data: combine different worksheet, workbook ● Pivot and Unpivot	Complete data cleaning for project Cleaning completed: correct field formats, missing-value handling, etc.
5	**Chapter4: Data modeling** ● Star Schema, Fact & Dimension Table ● Build up relationship between tables ● basic DAX clause ● SUMMARIZE, IF, RELATED, VALUES, FILTER, CALCULATE, CALENDARAUTO, ROW, ● Create Quick Measure: YTD (Year-To-Date Total Price), YoY%(Year-over-Year Percentage Growth of Total Price), Moving Average	Complete data model construction Model built; basic DAX created
6	**Chapter5: Create and format Visual Report** ● button, navigation ● Various Visual Objects: Column, Line, Bubble, Treemap, Funnel, Gauge, Combo chart, KPI, Table, Matrix ● Format visual object: title, background,label, XY axis, alignment	Complete visualization design Complete 3–5 report pages
7	**Chapter6: Practical Sales Project** ● Step by step to do project exercises ● group project guidance	Complete project final version Project content finalized
8	**Group project presentation and final assessment**	Project presentation

Note: *Some chapters or sections may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams.A review in Chinese may be held during L.C. and O.H. in the semester.*

Teacher's Office Hour

- The instructor's office hour is shown in the 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 once at least per week for good communication and effective learning, which is recorded in the students' participation.
- The time can be scheduled by instructors or 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 notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Important Dates

Midterm Test	
Final Exam	**Week 8**

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: Changjun Ru, Jingning Li **Department Head: Jingning Li**