Course Code
Decision Models and Business Game
Module 4, 2025-26

Course Information

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Lectures: TBA
Venue: TBA

Course Website: game URL https://bizwar.pku.edu.cn/

1. Course Description

1.1 Context

Course overview:

Management is about problem solving and decision making. Making sound business decisions with thorough business analytics and optimization is one of the most important factors for business success. This course provides students with a unique opportunity to learn how to manage a manufacturing company as a member of a top management team by building decision models in spreadsheets and analysing various data from a simulated business world. Students run companies in teams to compete against each other in a virtual business environment without bearing any real-world risks. Though operations management is a major field of action in the game, knowledge from other management disciplines will also be applied to make decisions in other business functions, such as finance, accounting, marketing, and human resource management. Just like in real business world, we must apply all relevant business knowledge as well as business intuition and shrewdness in an integrated way to be successful. The course hones in for a comprehensive application of knowledge through the building and using of decision support models, while teamwork is extremely important and exercised throughout the entire course.

Prerequisites: General Management or equivalent.

1.2 Textbooks and Reading Materials

The book "*Microsoft Excel 2013 Data Analysis and Business Modeling*" (ISBN: 978-0735669130) is of high reference value for building business data analysis and optimization models. The details

of the virtual business environment are available in the rules and user manual of the web-based application. Slides and basic decision support Excel sheets will be provided in class.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	**Objectives**	**Assessment (YES with details or NO)**
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	Yes. They will submit a business plan based on the analysis of their company, markets, and the industry.
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	Yes. They work in teams to make decisions, and in the end they present their experience of running their company.
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	Yes. They work in teams to manage a company, and present their experience in the end.
	2.2. Students will be able to apply leadership theories and related skills.	Yes. They lead and contribute to the team to manage their company.
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	No.
	3.2. Our students will practice ethics in the duration of the program.	No.
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	Yes. The simulation involves international markets.
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	Yes. This course calls for a comprehensive application of knowledge in various disciplines.
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	Yes. The competition among the companies managed by students provides a live business setting that is extremely

		challenging.
	5.3. Our students will demonstrate competency in critical thinking.	Yes. They will analyse and build models to solve business problems.

2.2 Course specific objectives

The objectives of this course include: 1. To enhance students' overall management abilities. Using qualitative and quantitative methods, students will learn how to detect, analyse, and solve a managerial problem scientifically. 2. To develop students' ability to apply management knowledge from various disciplines in a comprehensive way. The management of the virtual company covers knowledge in operations management, marketing, accounting and finance, strategic management, and human resource management. 3. To build up students' communication and collaboration skills. While students play different management roles, they need to fully coordinate with each other in order to run the company successfully. A strong teamwork is essential in this business competition.

2.3 Assessment/Grading Details

Grade assessment is made up of the following items:

(1) Assignments and class participation: **20%**;

(2) The 5-period preliminary contest results: **20%**;

(3) The 9-period final competition: **50%**; (Final competition results reflect students' abilities of comprehensive use of management knowledge, teamwork, and decision making.)

(4) Group presentation in the middle of the course: **10%**; (Group presentation evaluate students' abilities of summarization, theorization from practice, writing and speaking.)

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

AI tools requirements：

Using AI tools to complete assignments or assessments without the approval of the course instructor will be regarded as an act of academic dishonesty. Depending on the severity of the situation, penalties will be implemented in accordance with the provisions of the Peking University Graduate Student Handbook.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule

During this course, methodologies and tools to analyse managerial problems are covered. To provide students with a first-hand experience of making top-level management decisions supported by spreadsheet models, students work in teams to run companies against each other in a computer-simulated virtual business environment. Help is provided to analyse and model business environment and processes to make scientific decisions. Management decisions are made period by period over multiple periods. Naturally, the result of this business competition provides an objective assessment among other means of assessment for this course.

The purpose of such course design is multi-fold: 1) To provide the knowledge and experience of management decision-making by modelling and optimization. 2) To provide a closed-loop learning experience. Students learn and apply the knowledge to see immediate results, and opportunities are given for them to improve themselves upon the feedback results. 3) To provide an integrated learning experience. Students draw upon knowledge from multiple disciplines and integrate into their decision support models. They also exercise their business intuition and shrewdness, during which they experience the science and art of decision-making. 4) To provide the opportunity of teamwork, as students work in teams to manage their companies. 5) To experience the dynamism of running a business. Unlike other management courses that often analyse single and historical cases, the simulated business game is like a live case developed by themselves as they compete against each other during the course.

This course will be held in a computer lab. The simulation game is computer based. Both instructor's teaching and students' studying rely on computers. Course materials will be distributed through internal network, and external Internet connection is needed to access the simulation server. We use EXCEL to develop decision-supporting tools. Students will have a good amount of time using computers to make data driven decisions.

Topics and a tentative schedule for this course are as follows:

Course introduction – how we usually make decisions; History of management simulation games; Introduction to the business simulation environment.

What is a model; the value of a model in decision-making; how to build a decision model in MS Excel for running a virtual company.

Operations management modelling (I): modelling the cost of operations.

Operations management modelling (II): modelling the production process and the resource requirements.

Operations management modelling (III): Cost-benefit analysis of each product to find the right product mix based on the production model.

Operations management modelling (IV): Raw material procurement and inventory model;

Operations management modelling (V): Coordinating production and marketing.

Students form teams and lead different roles, and they will analyse their business situation and submit an analysis report and a business plan (involving aspects such as marketing strategy, production strategy, and business expansion strategy).

Trial decisions and test runs. Objectives: first make feasible decisions; then make decisions that are profitable in short term. Review and comments on trial decisions; Common mistake analysis.

Operations management modelling (VII): Optimization model for production scheduling.

Introduction to basic production scheduling optimization, and combine production and marketing means to achieve overall synergy for greater profitability. A few more trial decision and test runs to make feasible management decisions that maximize short-term profit.

Preliminary contests: about 4 simulated periods. Try to run the business profitably and expand the business. The students learn how to practice and coordinate the decisions across several periods in a strategically coherent way.

Operations management modelling (VIII): Long term capacity planning with models.

Business game final competition: about 9 periods (each period takes about 1 hour); During this final competition, teams will apply all they have learn to analyse their business and competition, and fine-tune their models to make short-term and long-term decisions.

Business game Overall summary --- Comprehensive use of management knowledge.

4. Miscellaneous

None.