**BUAS570**

**Business Decision Analysis**

# BUAS570

# Business Decision Analysis

<u>Instructor Contact Details</u>

Lecturer-in-charge: Huilan XU
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Consultation Time: Book appointment by sending email to: wlwyxy_29@zju.edu.cn

<u>Teaching Times, Modes and Locations</u>

Course Duration: 21 Dec 2025 to 09 Jan 2026
Modes: Face-to-face
Location: Huajiachi Campus, Zhejiang University via face-to-face

<u>Academic Level</u>

Undergraduate

<u>Credit Points:</u>

The course is worth 6 units of credit point.

<u>Credit Hours</u>

The number of credit hours of this course equals to the credits of a standard semester- long course.

<u>Contact Hours</u>

The course contains a total of 53 contact hours, which consists of orientation, lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, self-study, and final exam. Students will receive an official transcript which is issued by Zhejiang University when completing this course.

<u>Enrolment Requirements</u>

Eligibility requires enrollment in an overseas university as an undergraduate or postgraduate student, proficiency in English, and pre-approval from the student's home institution.

## Course Description:

This course offers a comprehensive exploration of decision-making methodologies and tools applicable across various domains. Students will delve into decision trees, probability models, and risk analysis, learning how to make informed choices under uncertainty. The curriculum covers techniques for sensitivity analysis, Monte Carlo simulation, and utility theory, emphasizing rational decision-making. Additionally, students will examine behavioral aspects through the lens of prospect theory, biases, and heuristics. Practical applications in project management, healthcare, finance, and more will be explored. By the end of the course, participants will be well-equipped to make effective, evidence-based decisions.

## Prerequisite:

N/A

## Learning Resources

● Robert Clemen, Terence Reilly, Making Hard Decisions with Decision Tools, 3rd edition, South-Western College Publishing, 2013

● Goodwin, P. and Wright, G., Decision analysis for management judgment. John Wiley & Sons, 2014

## Learning Objectives

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

● Foundations of Decision Analysis: Develop a strong foundation in the principles and methodologies of decision analysis, including decision trees, probability models, and risk analysis.

● Probability and Uncertainty: Understand the role of probability in decision-making and effectively manage uncertainty in various contexts.

● Risk Analysis: Analyze and assess risk profiles, incorporating stochastic dominance, sensitivity analysis, and risk management.

● Utility Theory: Comprehend utility theory and the influence of risk attitudes on decision outcomes.

## Course Delivery:

- Face-to-face Lecture mode includes lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, and final exam.

The following course will be taught in English. There will also be guest speakers and optional field trips available for students who would like to enhance their learning experience. All courses and other sessions will be run during weekdays.

Topics and Course Schedule:

| WK | Topic | Activities |
|----|-------|------------|
| 1 | Introduction to Decision Analysis | Lecture; Tutorial |
| 1 | Modeling Decisions | Lecture; Tutorial |
| 1 | Structuring Decisions: Basic Decision Trees | Lecture; Tutorial |
| 1 | Structuring Decisions: Cash Flows and Probabilities | Lecture; Tutorial |
| 1 | Making Choices: Risk Profiles | Lecture; Tutorial |
| 1 | Modeling Uncertainty: Precision Tree and Bayes' Theorem | Lecture; Tutorial |
| 2 | Modeling Uncertainty: Stochastic Dominance Revisited | Lecture; Tutorial |
| 2 | Modeling Uncertainty: Probability Density Functions | Lecture; Tutorial |
| 2 | In-class Test | Closed book |
| 2 | Theoretical Probability Models | Lecture; Tutorial |
| 2 | Simulation models | Lecture; Tutorial |
| 2 | A Capital Budgeting Model | Lecture; Tutorial |
| 3 | Sequential Simulations | Lecture; Tutorial |
| 3 | Modeling Preferences: Risk Attitudes | Lecture; Tutorial |
| 3 | Modeling Preferences: Utility Function Assessment | Lecture; Tutorial |
| 3 | Modeling Preferences Using Precision Tree | Lecture; Tutorial |
| 3 | Revision | Tutorial |
| 3 | Final exam | Closed book |

Assessments:

| Class participation | 15% |
|---------------------|-----|
| In-class Test | 15% |
| Assignments | 20% |
| Final exam | 50% |

Grade Descriptors:

| HD | High Distinction | 85-100 |
|----|------------------|--------|
| D | Distinction | 75-84 |
| Cr | Credit | 65-74 |
| P | Pass | 50-64 |
| F | Fail | 0-49 |

**High Distinction 85-100**

- Treatment of material evidences an advanced synthesis of ideas Demonstration of initiative, complex understanding, and analysis.
- Work is well-written and stylistically sophisticated, including appropriate referencing, clarity, and some creativity where appropriate.
- All criteria addressed to a high level.

**Distinction 75-84**
- Treatment of material evidences an advanced understanding of ideas Demonstration of initiative, complex understanding and analysis Work is well-written and stylistically strong.
- All criteria addressed strongly.

**Credit 65-74**
- Treatment of material displays a good understanding of ideas
- Work is well-written and stylistically sound, with a minimum of syntactical errors.
- All criteria addressed clearly.

**Pass 50-64**
- Treatment of material indicates a satisfactory understanding of ideas Work is adequately written, with some syntactical errors.
- Most criteria addressed adequately.

**Fail 0-49**
- Treatment of ideas indicates an inadequate understanding of ideas Written style inappropriate to task, major problems with expression.
- Most criteria not clearly or adequately addressed.

Academic Integrity

Students are expected to uphold the university's academic honesty principles which

are an integral part of the university's core values and principles. If a student fails to observe the acceptable standards of academic honesty, they could attract penalties and even disqualification from the course in more serious circumstances. Students are responsible for knowing and observing accepted principles of research, writing and any other task which they are required to complete.

Academic dishonesty or cheating includes acts of plagiarism, misrepresentation, fabrication, failure to reference materials used properly and forgery. These may include, but are not limited to: claiming the work of others as your own, deliberately applying false and inaccurate information, copying the work of others in part or whole, allowing others in the course to copy your work in part or whole, failing to appropriately acknowledge the work of other scholars/authors through acceptable referencing standards, purchasing papers or writing papers for other students and submitting the same paper twice for the same subject.

This Academic Integrity policy applies to all students of the Zhejiang University in all programs of study, including non-graduating students. It is to reinforce the University's commitment to maintain integrity and honesty in all academic activities of the University community.

Policy

The foundation of good academic work is honesty. Maintaining academic integrity upholds the standards of the University. The responsibility for maintaining integrity in all the activities of the academic community lies with the students as well as the faculty and the University. Everyone in this community must work together to ensure that the values of truth, trust and justice are upheld.

Academic dishonesty affects the University's reputation and devalues the degrees offered. The University will impose serious penalties on students who are found to have violated this policy. The following penalties may be imposed:

- ✓ Expulsion
- ✓ Suspension
- ✓ Zero mark /fail grade
- ✓ Marking down
- ✓ Re-doing/re-submitting of assignments or reports, and
- ✓ Verbal or written warning.