



Syllabus Course Program



Managerial decisions

Specialty

073 – Management

Educational program

International Business

Level of education

Bachelor's level

Semester

7

Institute

Institute of Education and Science in Economics,
Management and International Business

Department

Management (204)

Course type

Special (professional), Elective

Language of instruction

English

Lecturers and course developers

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PhD in Physics & Mathematics, Master's degree in Management, associate professor, associate professor of Management department

Authored and co-authored over 130 scientific publications. Teaches courses: «Organization theory», «Managerial decisions», «Marketing management», «Social responsibility and business ethics », «Methodology of scientific research»

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General information

Summary

The course aims at introducing students to decision theory: models and approaches to decision making, mathematical tools that can be applied in the process of formal assessment and selection of decision alternatives. The ultimate goal of the course is to provide students with knowledge and develop their practical skills related to making and implementation of organizational decisions at different levels of management with a view to achieving organizational goals.

Course objectives and goals

- to familiarize students with qualitative and quantitative decision making tools;
- to help students develop the ability to assess the decision situation and choose appropriate approaches to decision making and implementation;
- to help students build on their Excel skills essential for effective decision making

Format of classes

Lectures, workshops, self-study. The course ends with a differentiated grading.

Competencies

GC15. The ability to act on the basis of ethical grounds (reasons);

SC02. The ability to analyze the results of organization activity, to compare them with the factors of the external and internal environment;

SC12. The ability to analyze and structure the problems of an organization, to make reasonable decisions.

Learning outcomes

LO 04. To demonstrate skills in identifying problems and justifying management decisions

LO 06. To demonstrate skills in searching for, collecting, and analyzing information, as well as calculating indicators for substantiating management decisions

LO 08. To apply management methods to ensure the effectiveness of the organization.

Student workload

The total volume of the course is 120 hours (4 ECTS credits): lectures - 32 hours, workshops - 16 hours, self-study - 72 hours.

Course prerequisites

Fundamentals of management

Features of the course, teaching and learning methods, and technologies

Interactive lectures with presentations, discussion-based learning, problem solving using Excel spreadsheet, student-peer feedback

Program of the course

Topics of the lectures

Topic 1. Introduction to decision making

Lecture 1

1. The role of decision making in management. 2. The concept of organizational (managerial) decision. 3. Types of organizational decisions. 4. The requirements to organizational decisions.

Topic 2. Methodological approaches to decision making. Decision-making models

Lecture 2

1. Decision theory: conceptual approaches. 2. The rational decision making model. 3. The bounded rationality model and satisficing.

Lecture 3

1. The political model. 2. The garbage can model. 3. The use of systems approach in decision making.

Topic 3. Individual and group decision making

Lecture 4

1. Individual decision-making. 2. Group decision making: approaches and techniques. 3. Advantages and disadvantages of individual and group decision making.

Lecture 5

1. Leadership styles and decision making. 2. Types of democratic decisions

Topic 4. Multiple criteria decision making

Lecture 6

1. Compensatory choice models. 2. Non-compensatory choice models.

Lecture 7

1. The analytic hierarchy process (AHP). 2. Examples of the application of AHP in management

Topic 5. Decision making under certainty

Lecture 8

1. Decision tables and complete enumeration. 2. Linear programming. 3. Sensitivity analysis

Topic 6. Decision making under uncertainty

Lecture 9

1. Definition of uncertainty conditions. 2. Criteria of choice under uncertainty.

Topic 7. Decision making under risk conditions

Lecture 10

1. Conditions of risk. 2. The use of payoff matrices. 3. Decision trees.

Lecture 11

1. The concept of expected utility. 2. Utility functions and attitudes towards risk.

Topic 8. The value of information

Lecture 12

1. The acquisition of additional information. 2. The value of perfect information.

Lecture 13

1. Bayes' theorem and revised probabilities. 2. The value of imperfect information

Topic 9. Application of optimization models in decision making

Lecture 14

1. Inventory control models. 2. Queuing theory models.

Lecture 15

1. Game theory. 2. Games with pure strategy. 3. Games with mixed strategies

Topic 10. Decision implementation

Lecture 16

1. Mechanisms for implementing decisions. 2. Overcoming resistance to changes. 3. Boosting employee motivation and engagement. 4. Evaluating the decision outcomes

Topics of the workshops

Topic 1. The role of decision making in management. Decomposing a complex decision into a number (hierarchy) of sub-decisions. Solving problems related to time value of money

Topic 2. Deviations from the rational decision making model. Ethical decision making

Topic 3. Choosing the decision making method and leadership style for a given decision situation

Topic 4. Practicing the application of the analytic hierarchy process

Topic 5. Applying linear programming for an efficient resource allocation

Topic 6. Practicing the use of different criteria for decision making under uncertainty. Practicing the use of payoff matrices and decision trees.

Topic 7. Computing the value of perfect and imperfect information

Topic 8. Applying inventory control models and game theory in decision making

Topics of the laboratory classes

No laboratory classes

Self-study

- Watching a video on effective decision making and preparing to discuss the main takeaways in class;
- solving problems on resource allocation with the help of linear programming using MS Excel spreadsheet;
- solving problems using the analytic hierarchy process;
- solving problems with the help of decision trees;
- solving problems on the value of imperfect information;
- reviewing the lecture notes and other recommended materials

Course materials and recommended reading

1 Bonanno G. Decision Making, 2017.

http://faculty.econ.ucdavis.edu/faculty/bonanno/PDF/DM_book.pdf

2. Pownall I. Effective Management Decision Making: An Introduction / Ian Pownall & bookboon.com, 2012. - 236 p.

3. Albright C.S., Winston W.L. Data Analysis and Decision Making. 5th Ed./Cengage Learning, 2015.–990 p.

4. Mu E., Pereyra-Rojas M. Practical Decision Making: An Introduction to the Analytic Hierarchy Process / Springer Briefs in Operations Research. / Springer, 2017.

<https://link.springer.com/content/pdf/bbm%3A978-3-319-33861-3%2F1.pdf>

5. Dagher K. 10 of the Most Effective Group Decision Making Techniques June 21,2021

<https://fellow.app/blog/productivity/group-decision-making-techniques/>

6. Madden J. A Practical Guide For Consensus-Based Decision Making. London, Ontario, 2017.

<https://www.tamarackcommunity.ca/hubfs/Resources/Tools/Practical%20Guide%20for%20Consensus-Based%20Decision%20Making.pdf>

7. Seven Decision-Making Tools For Business Leaders. Cascade. September 27, 2023. URL: <https://www.cascade.app/blog/decision-making-tools>
8. Winston W.L., Albright C.S. Practical Management Science. 6th edition. / Cengage, 2019.–824 p.
9. Camm J.D., Cochran J.J., Fry M.J. et al. An Introduction to Management Science: Quantitative Approaches to Decision Making, 16 edition / Cengage Learning, 2023. - 788 p.
10. Hartman L.P., DesJardins J., MacDonald C. Business Ethics: Decision Making for Personal Integrity and Social Responsibility, 4th edition / McGraw-Hill Education, 2018. - 559 p.
11. Прийняття управлінських рішень : навчальний посібник / [Ю.Є.Петруня, Б. В. Літовченко, Т. О. Пасічник та ін.] ; за ред. Ю.Є. Петруні. – [3- те вид., переробл. і доп.]. – Дніпропетровськ : Університет митної справи та фінансів, 2015. – 209 с.
12. Файнзільберг О.А. Теорія прийняття рішень : підручник / Л.С. Файнзільберг, О.А. Жуковська, В.С. Якимчук. – Київ : Освіта України, 2018. – 246 с.

Assessment and grading

Criteria for assessment of student performance, and the final score structure

100% final grade is composed of the following components:

- a mid-term exam (30%),
- four individual assignments (60 %),
- participation in class discussions and problem solving in class (10%).

Participation in class discussions and problem solving may be substituted by submitting written answers to selected questions discussed in class

Grading scale

Total points	National	ECTS
90–100	Excellent	A
82–89	Good	B
75–81	Good	C
64–74	Satisfactory	D
60–63	Satisfactory	E
35–59	Unsatisfactory (requires additional learning)	FX
1–34	Unsatisfactory (requires repetition of the course)	F

Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management.

Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: https://blogs.kpi.kharkov.ua/v2/nv/?page_id=208)

Approval

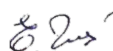
Approved by

Date, signature



Head of the department
Olena PROKHORENKO

Date, signature



Guarantor of the educational program
Olena CHAIKOVA