



## Syllabus Course Program



# Managerial decisions

### Specialty

073 – Management

### Institute

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

### Educational program

Management of Organizations and Administration

### Department

Management (204)

### Level of education

Bachelor's level

### Course type

Elective

### Semester

6

### Language of instruction

English

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## Lecturers and course developers



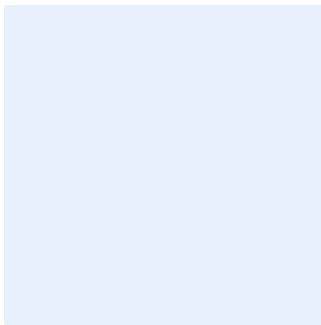
### Olga Nashchekina

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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», «Business ethics and social responsibility», «Basics 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 show the role of data analysis in decision making;
- to help students build on their Excel skills essential for effective decision making

### **Format of classes**

Lectures, workshops, course work, self-study. The course ends with a final exam.

### **Competencies**

GC08. The ability to use information and communication technology.

GC11. The ability to adapt to a new situation and take an action.

GC12. The ability to generate new ideas (creativity).

SC03. The ability to identify prospects for organizational development.

SC08. The ability to plan the organization activity and to manage time.

SC09. The ability to work in a team and to establish interpersonal interaction when solving professional tasks.

SC10. The ability to assess the performed works, to ensure their quality and to motivate personnel of an organization.

SC12. The ability to analyze and structure the organizational problems, make informed and justified decisions.

SC16. The ability to identify and analyze organizational problems, make informed and well-grounded decisions regarding organizational activities, operational strategies and organizational behavior.

SC1.3. The ability to formulate the main tasks associated with the implementation of a risk management system in an organization

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### **Learning outcomes**

LO 04. To demonstrate the ability to identify problems and justify managerial decisions.

LO 06. To demonstrate the skills related to search, collection, and analysis of information, calculation of indicators for substantiation of managerial decisions.

LO 07. To demonstrate the skills of organizational planning.

LO 09. To demonstrate the skills of interaction, leadership, and teamwork.

LO 12. To evaluate the legal, social, and economic outcomes of an organization's functioning.

LO 16. To demonstrate skills of independent work, flexible thinking, openness to new knowledge, to be critical and self-critical.

LO1.3. To create and analyze management and tax reports of enterprises and correctly interpret the information obtained for management decision making

LO1.4. To demonstrate skills related to analysis, identification and assessment of risks.

### **Student workload**

The total volume of the course is 150 hours (5 ECTS credits): lectures - 24 hours, workshops - 24 hours, self-study - 102 hours.

### **Course prerequisites**

Higher mathematics, Economic informatics, Fundamentals of management

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

Interactive lectures with presentations, discussion-based learning, case studies, problem solving using Excel spreadsheet, student-peer feedback, group work, project-based learning (course work)

## **Program of the course**

### **Topics of the lectures**

**Topic 1. Introduction to decision making**

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

1. Decision theory: conceptual approaches. 2. The rational decision making model. 3. The bounded rationality model and satisficing. 4. The political model. 5. The garbage can model. 6. The use of systems approach in decision making.

#### Topic 3. Individual and group decision making

1. Individual decision-making. 2. Group decision making: approaches and techniques. 3. Advantages and disadvantages of individual and group decision making. 4. Leadership styles and decision making.

#### Topic 4. Multiple criteria decision making

1. Compensatory and non-compensatory models. 2. The analytic hierarchy process.

#### Topic 5. Decision making under certainty

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

#### Topic 6. Decision making under uncertainty

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

#### Topic 7. Decision making under risk conditions

1. Conditions of risk. 2. The use of payoff matrices. 3. Decision trees. 4. The concept of expected utility. 5. Utility functions and attitudes towards risk.

#### Topic 8. The value of information

1. The acquisition of additional information. 2. The value of perfect information. 3. Bayes' theorem and revised probabilities. 4. The value of imperfect information

#### Topic 9. Application of optimization models in decision making

1. Inventory control models. 2. Queuing theory models. 3. Game theory

#### Topic 10. Decision support systems

1. Components of decision support systems. 2. Types of decision support systems. 3. Data-driven decisions. 4. Data collection and analysis.

#### Topic 11. Decision implementation

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. Decomposing a complex decision into a number (hierarchy) of sub-decisions

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

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

Topic 4. The use of compensatory and non-compensatory models in decision making.

Topic 5. Analytic hierarchy process.

Topic 6. The application of linear programming for an efficient resource allocation.

Topic 7. Practicing the use of different criteria for decision making under uncertainty

Topic 8. Practicing the use of payoff matrices and decision trees.

Topic 9. Computing the value of perfect and imperfect information.

Topic 10. Application of game theory in strategic decision making.

Topic 11. Analyzing a given set of data using MS Excel spreadsheet.

Topic 12. The development of a mechanism for decision implementation.

### Topics of the laboratory classes

No laboratory classes

### Self-study

Watching a video on effective decision making and writing a short essay on the main takeaways; describing one's own important life decision (either past or pending), classifying it and analyzing decision environment;

applying the Fishbone diagram for root cause analysis (collaborative project);

choosing an appropriate leadership style for a given decision situation using the Vroom-Yetton-Jago model;

solving problems on resource allocation with the help of linear programming using MS Excel spreadsheet;

analyzing a given set of data using MS Excel spreadsheet and making recommendations for decision makers;  
writing a course work based on the application of analytic hierarchy process.

## Course materials and recommended reading

- 1 Bonanno G. Decision Making, 2017. [http://faculty.econ.ucdavis.edu/faculty/bonanno/PDF/DM\\_book.pdf](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. Turban E., Meredith J. R. Fundamentals of Management Science / McGraw-Hill, 1998. – 914 p.
5. 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>
6. Dagher K. 10 of the Most Effective Group Decision Making Techniques June 21,2021  
<https://fellow.app/blog/productivity/group-decision-making-techniques/>
7. 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>
8. 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.
9. 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 the result of the final assessment (50%) and continuous assessment (50%).  
50% Final assessment: the final exam (25 %); the defense of the course work (25 %)  
50% Continuous assessment:
- 20% individual and group written assignments;
  - 20% mid-term control (an open-question test);
  - 10% participation in class discussions

### 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: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

## Approval

Approved by

Date, signature

Head of the department  
Olena PROKHORENKO

Date, signature

Guarantor of the educational  
program  
Olena LINKOVA

