Ministry of Education and Science of Ukraine
Dnipro University of technology

Management department

"APPROVED"
head of department

Shvets V. Ya.

«25» November 2025

WORK PROGRAM OF THE DISCIPLINE
"Design Thinking in Management and Business"

Area of expertise.....	07 Management and administration
Specialty.....	073 Management
Educational level.....	first (bachelor's)
Status.....	selective
Total volume.....	4 ECTS credits (120 hours)
Final control form.....	Differentiated test
Teaching period.....	5th semester, 9th, 10th quarter
Language	English

Lecturer: PhD in Management, Associate Professor Miro I.M.

Extended: 20__/20__ _____(_____) «__»___ 20__p.
(підпис, ПІБ, дата)

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Dnipro
Dnipro University of Technology
2025

Work program of the discipline “Design Thinking in Management and Business” for bachelors of specialty 073 Management / Dnipro University of Technology. Department of Management – D.: 2025. – 12 p.

Developer: Miro I.M.

The work program regulates:

– the purpose of the discipline;

– disciplinary learning outcomes formed on the basis of the transformation of the expected learning outcomes of the educational program;

– basic disciplines;

– volume and distribution by forms of organization of the educational process and types of educational sessions;

– discipline program (thematic plan by types of educational sessions);

– algorithm for assessing the level of achievement of disciplinary learning outcomes (scales, means, procedures and assessment criteria);

– tools, equipment and software;

– recommended sources of information.

The work program is intended to implement a competency-based approach when planning the educational process, teaching the discipline, preparing students for control measures, monitoring the implementation of educational activities, internal and external control of ensuring the quality of higher education, and accreditation of educational programs within the specialty.

CONTENTS

1 PURPOSE OF THE COURSE

The purpose of teaching the course "Design Thinking in Management and Business" is to form a system of knowledge and skills regarding the methodology and principles of design thinking, the ability of students to work effectively in a team; the ability to empathy, as the first stage of design thinking, the ability to correctly generate innovative ideas; think creatively; create a prototype; test a business idea. To teach students to use design thinking tools to increase staff motivation and creativity and the adaptive capacity of enterprises.

2 EXPECTED DISCIPLINARY LEARNING OUTCOMES

DISCIPLINARY LEARNING OUTCOMES (DLO)	
DLO	**CONTENT**
DLO - 01	Explain the essence and principles of design thinking and understand its importance for solving management and business tasks.
DLO - 02	Apply empathy research methods to identify user needs, motivations and problems.
DLO - 03	Know the tools of focusing and identify and formulate key user problems
DLO - 04	Know the methods and tools of ideation, generate creative ideas and choose optimal solutions using collective ideation methods.
DLO - 05	Manage the process of prototyping products or services, determine the requirements for MVP to check the viability of the proposed solutions.
DLO - 06	Organize feedback during the prototype testing process, collect and analyze information for its improvement

3 VOLUME AND DISTRIBUTION BY FORMS OF ORGANIZATION OF THE EDUCATIONAL PROCESS AND TYPES OF TRAINING CLASSES

Type of training sessions	**Volume, hours**	Distribution by form of study, hours			
		full-time		correspondence	
		classroom classes	independent work	classroom classes	independent work
lectures	-	-	-	-	-
practical	120	52	68	10	110
laboratory	-	-	-	-	-
seminars	-	-	-	-	-
TOTAL	120	52	68	10	110

4 DISCIPLINE PROGRAM BY TYPES OF EDUCATIONAL CLASSES

DLO	**Types and topics of training sessions**	**Volume of components, hours**
	Practical classes	**120**
DLO - 01	TOPIC 1. THE ESSENCE OF DESIGN THINKING IN MANAGEMENT AND BUSINESS. REAL CASES	20
	1.1. The essence and role of design thinking in management and business	
	1.2. Stages of design thinking	

DLO	Types and topics of training sessions	Volume of components, hours
	1.3. Real cases of application of design thinking	
DLO - 02	TOPIC 2. EMPATHY STAGE	20
	2.1. The essence of empathy and its role in design thinking	
	2.2. Methods of studying empathy. Building an empathy map	
	2.3. Errors when building an empathy map	
DLO - 03	TOPIC 3. FOCUSING STAGE.	20
	3.1. The essence of the focusing stage	
	3.2. Focusing tools	
	3.3. Formulation of the problem statement	
DLO - 04	TOPIC 4. IDEATION STAGE.	20
	4.1. The essence of ideation and its purpose in generating creative ideas.	
	4.2. Principles of successful ideation	
	4.3. Methods of idea generation	
DLO - 05	TOPIC 5. PROTOTYPING STAGE.	20
	5.1. The essence of prototyping and the role of the manager in it	
	5.2. MVP principles	
	5.3. Examples of real prototyping cases	
DLO - 06	TOPIC 6. TESTING STAGE.	20
	6.1. Purpose of prototype testing	
	6.2. Types of prototype testing	
	6.3. Receiving feedback and improving the prototype	
	Total	120

5 ASSESSMENT OF LEARNING RESULTS

Certification of student achievements is carried out using transparent procedures based on objective criteria in accordance with the University Regulations “On the Assessment of Learning Results of Higher Education Applicants”.

The achieved level of competencies relative to the expected ones, which is identified during control measures, reflects the real result of the student’s learning in the discipline.

5.1 Scales

Evaluation of academic achievements of students of Dnipro Universirt of Technology is carried out using rating (100-point) and institutional scales. The latter is necessary (due to the official absence of a national scale) for converting (translating) the grades of higher education applicants from different institutions.

Scales for assessing academic achievements of students

Rating	Institutional
90…100	Excellent
74…89	Good
60…73	Satisfactory
0…59	Fail

Academic discipline credits are credited if the student receives a final grade of at least 60 points. A lower grade is considered an academic debt that is subject to liquidation in accordance with the Regulations on the Organization of the Educational Process.

5.2 Tools and Procedures

The content of diagnostic tools is aimed at monitoring the level of formation of knowledge, skills, communication, responsibility and autonomy of the student according to the requirements of the NQF to the 6th qualification level during the demonstration of learning outcomes regulated by the work program.

At control events, the student must perform tasks focused exclusively on the demonstration of disciplinary learning outcomes (section 2).

Diagnostic tools provided to students at control events in the form of tasks for current and final control are formed by specifying the initial data and the method of demonstrating disciplinary learning outcomes.

Diagnostic tools (test tasks) for current and final control of the discipline are approved by the department.

Types of diagnostic tools and assessment procedures for current and final control of the discipline are given below.

Diagnostic tools and assessment procedures

<table>
<tr><td colspan="3">CURRENT CONTROL</td><td colspan="2">FINAL CONTROL</td></tr>
<tr><td>training session</td><td>diagnostic tools</td><td>procedures</td><td>diagnostic tools</td><td>procedures</td></tr>
<tr><td>practical</td><td>test tasks for each topic</td><td>completing tasks during practical classes</td><td rowspan="3">comprehensive control work (CCW)</td><td rowspan="3">determining the weighted average result of current controls;

performing CCW during the test at the student's request</td></tr>
<tr><td>practical</td><td>individual task</td><td>completing tasks during independent work</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

During the current control, practical classes are assessed by the quality of the control and individual independent task.

If the content of a certain type of class is subordinated to several components of the description of the qualification level according to the NQF, then the integral value of the assessment can be determined taking into account the weighting coefficients established by the teacher.

If the level of the results of the current controls for all types of training classes is at least 60 points, the final control is carried out without the participation of the student by determining the weighted average value of the current grades.

Regardless of the results of the current control, each student during the test has the right to perform the CCW, which contains tasks that cover key disciplinary learning

outcomes.

The number of specified CCW tasks must correspond to the allotted time for completion. The number of CCWoptions must ensure the individualization of the task.

The value of the assessment for the implementation of the CCW is determined by the average score of the components (specified tasks) and is final.

The integral value of the assessment of the implementation of the CCW can be determined taking into account the weighting coefficients established by the department for each description of the qualification level according to the NQF.

5.3 Criteria

The real learning outcomes of the student are identified and measured relative to those expected during control measures using criteria that describe the student's actions to demonstrate the achievement of learning outcomes.

To assess the performance of control tasks during the current control of practical classes, the assimilation coefficient is used as a criterion, which automatically adapts the assessment indicator to the rating scale:

$$Oi = 100\ a/m,$$

where a is the number of correct answers or performed essential operations according to the solution standard; m is the total number of questions or essential operations of the standard.

Individual tasks and complex control works are assessed by experts using criteria that characterize the ratio of requirements for the level of competencies and assessment indicators according to the rating scale.

The content of the criteria is based on the competency characteristics defined by the NQF for the bachelor's level of higher education (presented below).

General criteria for achieving learning outcomes for the 6th qualification level according to the NQF

Description of qualification level	**Requirements for knowledge, skills, communication, responsibility and autonomy**	**Rating indicator**
	Knowledge	
• conceptual scientific and practical knowledge, critical thinking of theories, principles, methods and concepts in the field of professional activity and/or study	The answer is excellent – correct, well-founded, meaningful. It characterizes the presence of: - conceptual knowledge; - a high degree of mastery of the state of the question; - critical understanding of the main theories, principles, methods and concepts in education and professional activity	95-100
	The answer contains minor errors or typos	90-94
	The answer is correct, but has some inaccuracies	85-89
	The answer is correct, but has some inaccuracies and is not sufficiently substantiated	80-84
	The answer is correct, but has some inaccuracies, is not sufficiently substantiated and meaningful	74-79
	The answer is fragmentary	70-73
	The answer demonstrates the student's vague ideas about the object of study	65-69
	The level of knowledge is minimally satisfactory	60-64
	The level of knowledge is unsatisfactory.	<60

Description of qualification level	Requirements for knowledge, skills, communication, responsibility and autonomy	Rating indicator
	Skills/Abilities	
• advanced cognitive and practical skills, expertise and innovation at the level necessary to solve complex specialized tasks and practical problems in the field of professional activity or study	The answer characterizes the ability to: - identify problems; - formulate hypotheses; - solve problems; - choose adequate methods and tools; - collect and logically and clearly interpret information; - use innovative approaches to solving the problem	95-100
	The answer characterizes the ability/skills to apply knowledge in practical activities with minor errors	90-94
	The answer characterizes the ability/skills to apply knowledge in practical activities, but has certain inaccuracies in the implementation of one requirement	85-89
	The answer characterizes the ability/skills to apply knowledge in practical activities, but has certain inaccuracies in the implementation of two requirements	80-84
	The answer characterizes the ability/skills to apply knowledge in practical activities, but has certain inaccuracies in the implementation of three requirements	74-79
	The answer characterizes the ability/skills to apply knowledge in practical activities, but has certain inaccuracies in the implementation of four requirements	70-73
	The answer characterizes the ability/skills to apply knowledge in practical activities when performing tasks according to the model	65-69
	The answer characterizes the ability/skills to apply knowledge when performing tasks according to the model, but with inaccuracies	60-64
	The level of skills/skills is unsatisfactory	<60
	Communication	
• communicating information, ideas, problems, solutions, own experience and arguments to specialists and non-specialists; • collecting, interpreting and applying data; • communicating on professional issues, including in a foreign language, orally and in writing	Fluent knowledge of the issues of the field. Clarity of the answer (report). Language: - correct; - clean; - clear; - precise; - logical; - expressive; - concise. Communication strategy: - consistent and consistent development of thought; - presence of logical own judgments; - appropriateness of the argument and its correspondence to the defended positions; - correct structure of the answer (report); - correctness of answers to questions; - appropriate technique of answering questions; - ability to draw conclusions and formulate proposals	95-100
	Sufficient knowledge of the industry's issues with minor errors.	90-94

Description of qualification level	Requirements for knowledge, skills, communication, responsibility and autonomy	Rating indicator
	Sufficient clarity of the answer (report) with minor errors.	85-89
	Appropriate communication strategy with minor errors	80-84
	Good knowledge of the industry's issues.	74-79
	Good clarity of the answer (report) and appropriate communication strategy (a total of three requirements not implemented)	70-73
	Good knowledge of the industry's issues.	65-69
	Good clarity of the answer (report) and appropriate communication strategy (a total of four requirements not implemented)	60-64
	Good knowledge of the industry's issues.	<60
Responsibility and autonomy		
• managing complex technical or professional activities or projects; • the ability to take responsibility for making and taking decisions in unpredictable work and/or educational contexts; • making judgments that take into account social, scientific and ethical aspects; • organizing and guiding the professional development of individuals and groups; • the ability to continue learning with a significant degree of autonomy	Excellent mastery of personality management competencies focused on: 1) management of complex projects, which involves: - the research nature of educational activities, marked by the ability to independently evaluate various life situations, phenomena, facts, identify and defend a personal position; - the ability to work in a team; - control of one's own actions; 2) responsibility for making decisions in unpredictable conditions, which includes: - substantiation of one's own decisions by the provisions of the regulatory framework of the industry and state levels; - independence in performing assigned tasks; - initiative in discussing problems; - responsibility for relationships; 3) responsibility for the professional development of individuals and/or groups of individuals, which involves: - the use of professionally oriented skills; - the use of evidence with independent and correct reasoning; - mastery of all types of educational activities; 4) the ability to further study with a high level of autonomy, which implies: - the degree of possession of fundamental knowledge; - independence of evaluative judgments; - a high level of formation of general educational skills and abilities; - independent search and analysis of sources of information	95-100
	Confident mastery of personality management competencies (two requirements not implemented)	90-94
	Good mastery of personality management competencies (three requirements not implemented)	85-89
	Good mastery of personality management competencies (four requirements not implemented)	80-84
	Good mastery of personality management competencies (six requirements not implemented)	74-79
	Satisfactory mastery of personality management	70-73

Description of qualification level	Requirements for knowledge, skills, communication, responsibility and autonomy	Rating indicator
	competencies (seven requirements not implemented)	
	Satisfactory mastery of personality management competencies (eight requirements not implemented)	65-69
	Level of responsibility and autonomy is fragmented	60-64
	Level of responsibility and autonomy is unsatisfactory	<60

6 TOOLS, HARDWARE AND SOFTWARE

1. During training sessions, applicants must have: gadgets with Internet connectivity; verified access to Microsoft Office applications: Teams, Moodle; Microsoft Office suite (Word, Excel, Power Point) installed on PCs and/or mobile gadgets; activated university mail account on Office365.
2. Multimedia materials, Moodle remote platform, MS Teams platform, activated university mail account (student.i.p.@nmu.one) on Office365 are used.

7. RESOURCES AND LITERATURE

1. David Lee (2018) Design Thinking in the classroom - 205 p
2. Design. Think. Make. Break. Repeat. A Handbook of Methods / The University of Sydney School of Architecture, Design and Planning and BIS Publishers, 2018. - 160p.
3. Design thinking for innovation. Free online course. - Access mode: https://prometheus.org.ua/designthinking/
4. https://www.designkit.org/
5. https://dschool.stanford.edu/resources
6. https://tilda.education/courses/web-design/designthinking/
7. Müller-Roterberg, Christian. (2018). Handbook of Design Thinking. https://www.researchgate.net/publication/329310644_Handbook_of_Design_Thinking/link/5c3d987b299bf12be3c8b626/download
8. https://canvanizer.com/#choosecanvas
9. Miro I.M. (2025). Design thinking as a tool for creative development of personnel in wartime. Scientific Spring: materials of the XV International Scientific and Technical Conference of postgraduate students and young scientists, Dnipro, March 26–28, 2025. Dnipro: National Technical University "Dnipro Polytechnic". P.251–253. URL:https://rmv.nmu.org.ua/ua/arkhiv-zbirok-konferentsiy/naukova-vesna2025/Scientific_Spring_2025.pdf
10. Miro I.M., Ivanova M.I. (2024). Synergy of creativity and adaptation of enterprises in conditions of uncertainty. Economic Bulletin of NGU. 4. P. 91–101. https://doi.org/10.33271/ebdut/88.09.
11. Ivanova M., Miro I. (2024). Personnel motivation for creativity as a factor of ensuring competitiveness, innovation and adaptability of the enterprise. Economic

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12. Miro I.M. (2024). Creative management as a demand of today. Youth: science and innovations 2024: materials of the 12th International Scientific and Technical Conference. students, postgraduates and young scientists, Dnipro, November 13–15, 2024. Dnipro: National Technical University "Dnipro Polytechnic". Vol. 2. 201–202. URL: https://ir.nmu.org.ua/server/api/core/bitstreams/78ad48ef-b56a-4888-97a-22dc28eb59bf/content

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for bachelors of specialty 073 Management

Developed by:
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Edited by the author

Prepared for publication
at Dnipro University of Technology
Certificate of inclusion in the State Register No. 1842
49005, Dnipro, D. Yavornytskyi Ave., 19