

SYLLABUS OF THE COURSE

“Design Thinking in Management and Business”



Education level	Bachelor's degree
Field of knowledge	07 Management and Administration
Specialty	073 Management
Educational program	Management
Status	selective
Total volume	4 ECTS credits (120 hours)
Final control form	Differentiated test
Duration of teaching	9, 10 quarter
Classes:	4 hours per week
Practical	4 hours per week
Language	English

Course page in the DO Dnipro University of technology:

<https://do.nmu.org.ua/course/view.php?id=7500>

Consultations: according to a separate schedule agreed with higher education applicants

Online consultations: Microsoft Teams - group "Design Thinking in Management and Business"

Information about teachers:



**Miro Iryna Mykolayivna (practical),
PhD in Management, Associate Professor**

Personal page:

https://mvs.nmu.org.ua/ua/teachers/Співробітники/2025_Міро%20інф%20на%20сайт.pdf

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1. Course Summary

Studying the discipline "Design Thinking in Management and Business" will provide applicants with the necessary knowledge of the methodology and principles of design thinking and practical skills in solving business problems using design thinking tools. This approach will allow managers to creatively look at solving any management

problem and increasing competitiveness. This is one of the most successful global methods for increasing innovation in business, which is used by companies such as Apple, Facebook, Google, IKEA.

Design thinking courses are an indispensable educational component of Stanford University and other leading universities.

In conditions of uncertainty, design thinking becomes a tool for increasing staff motivation and creativity and adaptive capacity of enterprises

2. The goal and objectives of the academic discipline

The goal of teaching the academic discipline "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 applicants 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 applicants to use design thinking tools to increase staff motivation and creativity and the adaptive capacity of enterprises.

3. Course objectives:

- formation of a conceptual apparatus based on theoretical study of the discipline;
- development of skills in using creative and innovative design thinking methods in practical classes;

- formation of students' ability to think creatively and be able to generate ideas

As a result of studying the academic discipline, the student should know:

- the concepts of "empathy", "brainstorming", "prototype", "validation".
- a general scheme, namely the 5 stages of design thinking and understand which management tools to apply at which stage in order to obtain a positive result and an innovative product.

4. Learning outcomes:

After studying this discipline, the student will be able to:

1. Explain the essence and principles of design thinking and understand its importance for solving management and business tasks.
2. Apply empathy research methods to identify user needs, motivations and problems.
3. Know the focusing tools and identify and formulate key user problems
4. Know the methods and tools of ideation, generate creative ideas and choose optimal solutions using collective ideation methods.
5. Manage the prototyping process of products or services, determine the requirements for MVP to verify the viability of the proposed solutions.
6. Organize feedback during the prototype testing process, collect and analyze information for its improvement

5. Course structure

Lesson topics	Lesson type	Resources
TOPIC 1. THE ESSENCE OF DESIGN THINKING IN MANAGEMENT AND BUSINESS. REAL CASES	Practical classes	Methodological instructions for practical and independent classes https://do.nmu.org.ua/course/view.php?id=7500
1.1. The essence and role of design thinking in management and business		
1.2. Stages of design thinking		
1.3. Real cases of application of design thinking		
TOPIC 2. EMPATHY STAGE	Practical classes	Methodological instructions for practical and independent classes https://do.nmu.org.ua/course/view.php?id=7500
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		
TOPIC 3. FOCUSING STAGE.	Практичні заняття	Методичні вказівки до практичних і самостійних занять https://do.nmu.org.ua/course/view.php?id=7500
3.1. The essence of the focusing stage		
3.2. Focusing tools		
3.3. Formulation of the problem statement		
TOPIC 4. IDEATION STAGE.	Практичні заняття	Методичні вказівки до практичних і самостійних занять https://do.nmu.org.ua/course/view.php?id=7500
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		
TOPIC 5. PROTOTYPING STAGE.	Практичні заняття	Методичні вказівки до практичних і самостійних занять https://do.nmu.org.ua/course/view.php?id=7500
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		
TOPIC 6. TESTING STAGE.	Практичні заняття	Методичні вказівки до практичних і самостійних занять https://do.nmu.org.ua/course/view.php?id=7500
6.1. Purpose of prototype testing		
6.2. Types of prototype testing		
6.3. Receiving feedback and improving the prototype		

6. Technical equipment and/or software

During lectures and seminars (practical) classes, it is mandatory to have gadgets with cellular Internet.

An activated university mail account (student.i.p@nmu.one) on Microsoft Office365.

Verified access from a PC or mobile gadget to the Microsoft Office 365 Teams and Moodle platforms.

The Microsoft Office program package (Word, Excel, Power Point) is installed on PCs and mobile gadgets.

7. Assessment system and requirements

7.1 The academic achievements of higher education applicants based on the results of studying the course will be assessed according to the scale given below:

Rating scale	Institutional scale
90-100	excellent
74-89	good
60-73	satisfactory
0-59	unsatisfactory

7.2. Means and procedures

A higher education student may receive a final grade in a discipline based on the current assessment of knowledge provided that the number of points earned for completing the test, participating in practical classes, and completing a creative independent task is at least 60 points.

The current performance consists of success in 6 (six) practical tasks of 10 points each (60 points), the assessment of independent work - the completion of a creative independent task (40 points). The maximum current performance a student can receive is 100 points.

Final evaluation	The final control of the discipline (credit) takes place in the form of a comprehensive test, namely: by providing answers to questions in the form of tests. The number of points for each question is given in the comprehensive test (CPT). Answers to test tasks are evaluated by comparing them with reference answers. The maximum number of points that can be obtained based on the test results is 100. (50 tests, 2 points each)
Practical classes	Demonstration and discussion of topics; debates and discussions, cases where business development skills are practiced using the design thinking methodology and tools. 6 practical sessions, 10 points each. The maximum is estimated at 60 points
Creative independent task	Completion of a creative independent task, which involves a presentation with step-by-step business development with design thinking tools; The maximum is estimated at 40 points

7.3. Criteria

7.3.1. Criteria for evaluating practical classes: for discussing issues and participating in the discussion, a maximum of 10 points can be obtained for one

practical class:

- 9-10 points: active participation in debates, discussions (speeches, comments, active listening), mastery of educational material, providing reasoned answers with references to sources;
- 7-8 points: active participation in debates, discussions (speeches, comments, active listening), mastery of educational material with minor errors in the essence of the issues being discussed;
- 5-6 points: active participation in the discussion (speeches, comments, active listening) without sufficient mastery of educational material related to the topic of discussion;
- 3-4 points: involvement in the discussion by the teacher, inattention, lack of sufficient knowledge of the subject of discussion;
- 1-2 points: unwillingness to participate in the discussion, lack of sufficient knowledge about the subject of discussion, but listening to the debates and discussions.

7.3.2. Criteria for evaluating a creative independent task.

For completing a creative independent task, a maximum of 40 points can be obtained:

- 34-40 points: mastery of the educational material, correctness of the information provided, logic, consistency, answers to all sub-items taken into account, reasoning conclusions;
- 27-33 points: mastery of the educational material with minor errors, minor errors in the logical construction of information, answers to all sub-items taken into account, reasoning conclusions;
- 18-26 points: insufficient mastery of the educational material, minor errors in the information provided, answers to not all sub-items taken into account, arguments for conclusions;
- 9-17 points: insufficient knowledge of the educational material, gross errors in constructing information, conclusions are not substantiated, answers to not all sub-items are taken into account
- 1-8 points: lack of sufficient knowledge of all sub-items of the task, gross errors in constructing information, answers to not all sub-items are taken into account, conclusions are not substantiated.

7.3.3. Criteria for evaluating the test work

The test work involves providing answers to tests. The maximum number of points that can be obtained based on the results of the work is 100 points (50 test questions, 2 points each).

8. Course Policy

8.1. Academic Integrity Policy. Academic integrity of higher education applicants is an important condition for mastering the results of training in the discipline and obtaining a satisfactory grade in current and final tests. Academic integrity is based on condemning the practices of copying (performing written work involving external sources of information, other than those permitted for use), plagiarism (reproducing published texts by other authors without indicating

authorship), fabrication (inventing data or facts) that can be used in the educational process. The academic integrity policy is regulated by the “Regulations on the system for preventing and detecting plagiarism at the National Technical University “Dnipro Polytechnic”.

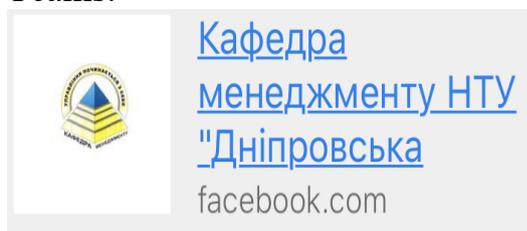
http://www.nmu.org.ua/ua/content/activity/us_documents/System_of_prevention_and_detection_of_plagiarism.pdf.

In the event that a higher education applicant violates academic integrity (cheating, plagiarism, fabrication), the work is evaluated as unsatisfactory and must be re-done. The teacher reserves the right to change the topic of the assignment.

8.2. Communication Policy.

Higher education students must have an activated university email.

It is the responsibility of a higher education student to check their mailbox on Office365 once a week (every Sunday) and to visit the discipline group in Microsoft Teams.



We recommend creating profiles and subscribing to the Department of Management pages on Facebook.

During the weeks of independent work, the student is required to work remotely within the discipline in the Microsoft Moodle application (www.do.nmu.org.ua).

All written questions to the teacher regarding the discipline should be sent to the university email or to the Teams group.

8.3. Policy on resiting.

Works submitted after the deadline without good reason are assessed with a lower grade. Re-siting is carried out with the permission of the dean's office if there are good reasons (for example, illness).

8.4. Policy on appealing the assessment. If a higher education student does not agree with the assessment of his knowledge, he may appeal the assessment given by the teacher in the established manner.

8.5. Participation in the survey. At the end of the course and before the start of the session, higher education students will be asked to anonymously fill out electronic questionnaires (Microsoft Forms Office 365), which will be sent to your university mailboxes. Filling out questionnaires is an important component of your educational activity, which will allow you to assess the effectiveness of the teaching methods used and take into account your suggestions for improving the content of the academic discipline.

9. Teaching methods

During lectures and practical classes, the following teaching methods will be used:

Explanation. Interpretation of concepts, phenomena, principles, terms, etc., mainly when teaching new material.

Instruction. Providing an algorithm of actions to complete the task.

Dialogue. Using questions, the teacher will motivate higher education students to reproduce the acquired knowledge, form independent conclusions and generalizations based on the learned material.

Educational discussion, debate. This is a discussion of an important issue, an exchange of views between higher education students and/or the teacher, aimed not only at the assimilation of new knowledge, but also at creating an emotionally charged atmosphere that would contribute to a deep penetration into the truth.

Illustration. The use of presentations, videos and other media content to reinforce the material being explained, discussed or the tasks being performed.

Independent observation (learning, research). This is a direct independent perception of reality phenomena in the learning process.

Written and oral control tasks. Independent concentration and reproduction of acquired knowledge and skills in conditions of limited time and sources of information.

Cases. Search for a problem situation of the real activity of the enterprise, due to which a negative effect is observed, and justification of its original solution, based on known facts or the need to obtain additional information.

Analysis. Its essence lies in the study of objects or phenomena by individual characteristics and relations, in dividing them into elements, understanding the connections between them.

Synthesis. Consists in the imaginary or practical combination of elements or properties of an object isolated during the analysis into a single whole.

Comparison. With its help, common and distinctive features of objects and phenomena are established.

Generalization. This method involves moving from the individual to the general, from less general to more general by abstracting from the specific and identifying the general features inherent in phenomena (properties, relationships, etc.) when understanding concepts, judgments, theories.

Concretization. Helps move from direct impressions to understanding the essence of what is being studied: the results of concretization appear in the form of examples, diagrams, models, etc.

Speech. The issue around a certain topic is discussed in groups and then made public with further discussion.

10. 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 Bulletin of Cherkasy State Technological University. Vol. 25. Issue 2(73). P. 110–120. DOI: [https://doi.org/10.24025/2306-4420.73\(2\).2024.321788](https://doi.org/10.24025/2306-4420.73(2).2024.321788)
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>