Ministry of Education and Science of Ukraine
National Aerospace University
"Kharkiv Aviation Institute"

Department of Management and Business Administration (602)

APPROVE

Educational program guarantor

<u>Andriy DORONIN</u>

(signature)   (first and last name)

"29" August 2025

SYLLABUS
OF A COMPULSORY EDUCATIONAL DISCIPLINE

FUNDAMENTALS OF PROJECT MANAGEMENT
(name of academic discipline)

Fields of knowledge: <u>07 Management and Administration</u>
(code and name of the field of knowledge)

Specialty: <u>073 Management</u>
(code and name of specialty)

Educational program: <u>Management</u>
(name of educational program)

Level of higher education: <u>first (bachelor's degree)</u>

The syllabus is effective from 01.09.2025

Kharkiv – 2025

Developer: Skachkova I. A. <u>associate professor, Ph.D.</u>
(surname and initials, position, academic degree and title) (signature)

The syllabus of the academic discipline was reviewed at a meeting
of the Department of Management and Business Administration
(name of department)

Protocol No. 1 dated "29" August 2025

Head of the Department, Candidate of Economic

Sciences, Associate Professor   Valentina GATYLO
(academic degree and academic title)   (signature)   (first and last name)

Agreed with the representative of education seekers:

First (Master's) level student   <u>Christina GORDIENKO</u>
(signature) (initials and surname)

1.   General information about the teacher

Full name: Skachkova Iryna Anatoliivna

Position: Associate Professor of Department 602

Academic degree: Candidate of Technical Sciences

Academic title: Associate Professor

List of disciplines taught:

Project management; Production organization; Aircraft production planning; Administrative management; Strategic enterprise management and others.

Areas of scientific research:

management, project management,

economic and mathematical modeling.

Contact information: i.skachkova@khai.edu

2. Description of the academic discipline

Form of education	Full-time, part-time
Semester	4
Language of instruction	Ukrainian
Type of discipline	Required
Course volume: ECTS credits/number of hours	daytime: 5 ECTS credits / 150 hours (64 classroom hours, of which: lectures – 32, practical – 32; SRH – 86); correspondence: 5 ECTS credits / 150 hours (6 classroom hours, of which: lectures – 2, practical – 4; SRZ – 144)
Types educational activities	Lectures, practical (seminar) and/or laboratory classes, independent work
Types of control	Current control, module control, semester control –exam
Prerequisites	The discipline is generalizing. Studying the discipline is preceded by knowledge of a general mathematical profile.
Co-requisites	Educational components that provide an educational process in parallel with this component.
Post-requisites	Master's qualification work, Pre-certification practice

3. Purpose and objectives of the academic discipline, lists of competencies and expected learning outcomes

Goal–Formation of a complex of theoretical knowledge and practical skills in future managers regarding the methodology of project management and making project decisions of innovation-oriented enterprises in conditions of high variability of external and internal environmental factors

Task – to develop knowledge and practical skills in planning, organizing, implementing, controlling, and evaluating projects based on modern management methods and tools among higher education students.

Competencies acquired:

Integral competence:

The ability to solve complex specialized tasks and practical problems, characterized by complexity and uncertainty of conditions, in the field of management, in particular the aerospace industry in Ukraine (aviation, astronautics, mechanical engineering, information technology), as well as in related industries or in the process of learning, which involvesapplication of theories and methods of social and behavioral sciences.

General Competencies (GC)

After completing this program, the student will be able to:

general:

– ZK3 Ability to abstract thinking, analysis, synthesis.

– GC4 Ability to apply knowledge in practical situations.

– ZK9 Ability to learn and master modern knowledge.

special (professional):

– SK2 Ability to analyze the results of an organization's activities, compare them with factors influencing the external and internal environment.

– SK3 Ability to determine the prospects for the development of the organization.

– SK7 Ability to select and use modern management tools.

– SK8 Ability to plan organizational activities and manage time.

– SK12 Ability to analyze and structure organizational problems, and formulate sound decisions.

– SK21 Ability to apply investment, innovation and logistics management tools in conditions of uncertainty

– SK22 Ability to justify management decisions and exercise effective control over their implementation

– SK23 Ability to formalize enterprise management processes and automate them using modern specialized software products.

– SK24 Ability to develop and manage projects with a guarantee of the quality of the work performed.

Learning outcomes

– RNZ - Demonstrate knowledge of management theories, methods and functions, and modern leadership concepts.

– PH4 - Demonstrate skills in identifying problems and justifying management decisions.

– PH5 - Describe the content of the functional areas of the organization.

– PH6 - Demonstrate skills in searching, collecting and analyzing information, calculating indicators to justify management decisions.

– PH7 - Demonstrate organizational design skills.

– PH18 – Apply project reasoning and management skills.

– RN19 – Practice the use of modern information and communication technologies in enterprise management

4. Content of the academic discipline
MODULE 1

Content module 1. Fundamentals of project and program management

Topic 1. Concept and main characteristics of the project.

Form of classes: lecture, practical class, independent work.

Lecture topic 1. Concept and main characteristics of the project

Lecture topic 2. Stages and project life cycle

Topic of the practical lesson:Description of the project product.

Brief summary: The concept of a project. Characteristics of a project. The concept of project management. Fields of knowledge of project management. The concept of a program. Project portfolio management. Project stages and life cycle. Project classification.

Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.

Topic 2. The process of developing and managing a project schedule and budget.
Form of classes: lecture, practical class, independent work.
Lecture Topic 3. Project Schedule Development and Management Process
Lecture Topic 4. The Process of Developing and Managing a Project Budget
Topic of the practical lesson: Project planning in MS Project.

Brief summary: Defining the project scope. Work breakdown structure. Methods for estimating the duration and cost of work. Calendar-network planning. Methods and techniques for optimizing the schedule. Project resource planning. Developing the project budget. Obtaining a baseline project execution plan. Features of schedule and budget planning in a flexible environment. The process and practices of updating the project schedule and budget. Methods and techniques for project forecasting. Analysis of the mastered volume. PERT and Monte Carlo modeling. Techniques for returning the project to schedule and budget.

Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.

Topic 3. Project resource management processes.
Form of classes: lecture, practical class, independent work.
Lecture topic 5. Project resource management processes
Topic of the practical lesson: Resource planning in MS Project.

Brief summary: Project resource management planning process. Requirements for a resource management plan. Methods and techniques for identifying and acquiring project resources. Project team resource management processes. Methods and techniques for team development and team management. Project resource control process.

Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.

Modular control 1

Content module No. 2. Implementing project management processes.
Topic 4. Project procurement processes.
Form of classes: lecture, practical class, independent work.
Lecture Topic 6. Project Procurement Processes
Topic of the practical lesson: Project cost planning.

Brief summary: Purpose of procurement processes in a project. Requirements for a project procurement management plan and the procurement planning process. Typical criteria for making "make or buy" decisions. Types of contracts and their impact on risk allocation.

Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.

Topic 5. Project communications management processes.
Form of classes: lecture, practical class, independent work.
Lecture topic 7. Project communications management processes.
Topic of the practical lesson: Organizational planning of the project.

Brief summary: The meaning of communications and the requirements for communications in a project. The concept of effective communications. Mandatory, marketing and working communications of a project. Methods and techniques for analyzing project communication needs. The process of developing a Project Communications Management Plan. Methods and techniques for monitoring project communications.

Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.

Topic 6. Project risk management principles.
Form of classes: lecture, practical class, independent work.
Lecture topic 8. Project risk management principles
Lecture topic 9. Evaluating project management effectiveness.
Topic of the practical lesson: Developing a project risk management plan.
Brief summary: Integrated risk management. Responsibilities of participants in organizational project management regarding risk management. Risk management planning process. Risk parameters that should be determined in the project. Methods and techniques for risk identification processes, qualitative and quantitative risk analysis. Risk response planning process, strategies for responding to threats and opportunities. Risk monitoring process, techniques for communicating the status of risks to project stakeholders.
Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.
Topic 7. Project or phase closure processes.
Form of classes: lecture, practical class, independent work.
Lecture topic 10.Project closure planning and contract closure
Topic of the practical lesson: Preparing a project presentation to investors.
Brief summary: Purpose of project or phase closure processes. Typical content of a phase gate review event. Project closure planning and contract closure.
Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher.
Topic 8. Information technologies in project management.
Form of classes: lecture, practical class, independent work.
Lecture topic 11.Information technology in project management
Lecture topic 12.Teamwork in an IT environment
Topic of the practical lesson: Using cloud technologies in project management.
Brief summary: Project management automation levels. Information system and its structure. Information support. Composition of the information system. Project information environment. Unified information space. Project portal. Implementation of a project management system.
Topics, types of work related to the applicant's independent work: Studying lecture material. Formulating questions for the teacher
Modular control 2

5. Individual tasks
Individual RGR assignment on the topic: "Your own promising project."

6. Teaching methods
Verbal, visual, practical.
7. Control methods
Current control (theoretical survey and solving practical problems), module control (testing by course sections) and final (semester) control (exam).

8. Evaluation criteria and distribution of points received by education seekers

Table 8.1 – Distribution of points received by education seekers

Components of educational work	Points for one lesson (task)	Number of lessons (tasks)	Total points
Content module 1			
Completion and defense of practical work	0…20	4	0…20
Modular control	0…25	1	0…25

Content module 2			
Performing and defending laboratory/practical work	0…20	4	0…20
Modular control	0…25	1	0…25
Implementation and protection of RGR (RR, RK)	0…10	1	0…10
Total per semester			**0…100**

Semester control (exam) is conducted in case the student refuses the final control points and has admission to the exam. When taking the semester exam, the student has the opportunity to receive a maximum of 100 points.

The exam ticket consists of two theoretical (25 points for each question, 50 points in total) and 1 practical task (50 points per question).

Table 8.2 –Grading scales: point and traditional

Total points	Traditional scale rating	
	Exam, differential credit	Test
90 – 100	Perfectly	Enrolled
75 – 89	Good	
60 – 74	Satisfactorily	
0 – 59	Unsatisfactorily	Not included

Criteria for evaluating a student's work during the semester

Satisfactory (60-74) – have the knowledge and skills to ensure the program learning outcomes. Complete and submit a calculation and graphic work. Write two modular works. Know the basic concepts and categories of project management. Be able to name the stages of the project life cycle. Demonstrate a partial understanding of the project management methodology. Be able to work with project management software at an elementary level. Be able to present the results of the project.

Good (75-89) – have the knowledge, skills and abilities to ensure the program learning outcomes. Complete and submit a calculation and graphic work. Write two module works. In addition to the requirements specified for obtaining a satisfactory assessment: be able to explain and compare key project management methodologies, perform tasks on building WBS, calendar plans, calculating resources and budget with minor errors, confidently use software tools (MS Project.) for project modeling, be able to present the results of work using visualizations

Excellent (90-100) – have knowledge, skills and abilities that will allow you to independently, freely and reasonably answer any questions regarding project and program management. Complete and submit a calculation and graphic work. Write two modular works. Thoroughly know the key concepts, methods and approaches to project and program management. Perform tasks (WBS, calendar plans, resource and financial calculations) without significant errors. Perform a comprehensive risk analysis, develop justified response strategies. Be able to predict the results of project implementation based on several methods (PERT, mastered volume analysis, Monte Carlo). Confidently use modern project management software.

9. Course Policy

Attending classes. Regulation of passes.The interactive nature of the course requires mandatory attendance at practical classes. Students who, under certain circumstances, cannot attend practical classes regularly must agree with the teacher during the week on a schedule for individual work-through of missed classes. Individual missed classes must be worked out at the nearest consultation within a week after they were missed. Work-through of classes is carried out orally in the form of an interview on questions specified in the class plan. In some cases, written work-through of missed classes is allowed by completing an individual written assignment.

Compliance with academic integrity requirementsby students during the study of the academic discipline. During the study of the academic discipline, students must adhere to generally accepted moral and ethical norms and rules of conduct, the requirements of academic integrity, stipulated by the Regulations on Academic Integrity of the National Aerospace University "Kharkiv Aviation Institute" (https://khai.edu/assets/files/polozhennya/polozhennya-pro-akademichnu-dobrochesnist.pdf). It is expected that students' work will be their own original research or reflections. Failure to cite sources, fabrication of sources, plagiarism, and interference with the work of other students are examples of possible academic dishonesty, but are not limited to. Evidence of academic dishonesty in a student's written work is grounds for the instructor to reject it, regardless of the extent of plagiarism or deception.

Conflict resolution. The order and procedures for resolving conflicts related to corrupt actions, conflicts of interest, various forms of discrimination, sexual harassment, interpersonal relationships and other situations that may arise during training, as well as the rules of ethical behavior are regulated by the Code of Ethical Behavior at the National Aerospace University "Kharkiv Aviation Institute" (https://khai.edu/ua/university/normativna-baza/ustanovchi-dokumenti/kodeks-etichnoi-povedinki/).

10. Methodological support

1. The discipline page in Mentor is located at the following link:https://mentor.khai.edu/course/view.php?id=899

11. Recommended reading

Basic

1. A Guide to the Project Management Body of Knowledge. Seventh Edition and the Standard for Project Management. Project Management Institute: Newton Square, PA, USA, 2021.

2. Chumachenko, I. V., Morozov, V. V., Dotsenko, N. V., Cherednichenko, A. M. Upravlinnia proiektamy: protsesy planuvannia proiektnykh dii: pidruchnyk.Kyiv: Universytet ekonomiky ta prava "KROK", 2014. 673 p.

3. Andriienko, O. Upravlinnia proiektamy v biznes-obiednanniakh malykh i serednikh pidpryiemstv: posibnyk. Kyiv, 2017. 77 p.

4. Kovshun, N. E., Levun, O. I. Analiz ta realizatsiia proiektiv: navch. posib. Rivne: NUVHP, 2022. 350 p.

5. Kozyr, S. V., Sliesariev, V. V., Us, S. A., Khomiak, T. V. Modeliuvannia ta reinzhynirynh biznes-protsesiv: pidruchnyk. Dnipro: NTU "Dniprovska politekhnika", 2022. 163 p.

Auxiliary

6. Kuzminykh, V. O., Taranenko, R. A. Osnovy upravlinnia IT-proiektamy: navch. posib. Kyiv: KPI im. Ihoria Sikorskoho, 2019. 75 p.

7. Kovshun, N. E., Levun, O. I. Analiz ta realizatsiia proiektiv: navch. posib. Rivne: NUVHP, 2022. 350 p.

8. Blaha, N. V. Upravlinnia proiektamy: navch. posibnyk. Lviv: Lvivskyi derzhavnyi universytet vnutrishnikh sprav, 2021. 152 p.

9. Hrybyk, I. I. et al. Upravlinnia zminamy ta proiektamy: navch. posib. Lviv: Natsionalnyi universytet "Lvivska Politekhnika", Tsentr Yevropy, 2017. 168 p.

10. Butko, M. P., Murashko, M. I., Oliichenko, I. M., Olifirenko, L. D. Proiektnyi menedzhment: rehionalnyi zriz. Kyiv: Tsentr uchbovoi literatury, 2016. 415 p.

12. Information resources

1.https://worksection.com/blog.html- Project management blog from the developers of the Worksection software tool.

2.https://www.wrike.com/ru/blog/category/upravlenie-proektami-ru/- Project management blog from the developers of Wrike software