SYLLABUS OF THE COURSE
"PROJECT PORTFOLIO MANAGEMENT"

Education level	Postgraduate
Discipline	12 Information Technology
Duration of teaching	1 semester
Occupation:	7th and 8th quarters
lectures	3 hours/week
practical work	2 hour/week
Language of instruction	Ukrainian, English

Prerequisites for study: Master of Science 12 – Information Technology

Course page in the SDO NTU "DP":
https://do.nmu.org.ua/course/view.php?id=4494
Consultations: according to a separate schedule, previously agreed upon with the students.
Online consultations: MS Teams, email

Teacher:

	Molokanova Valentina Mikhailovna (lectures, practical classes) https://do.nmu.org.ua/course/view.php?id=2128 **Position:** Professor of the Department of Systems Analysis and Management **Academic title:** professor **Academic degree:** Doctor of Technical Sciences sciences
	Personal page: https://sau.nmu.org.ua/ua/kadry/molokanovavm.php
	Orchid ID: https://orcid.org/0000-0002-4353-4948
	Scopus ID: https://www.scopus.com/authid/detail.uri?authorId=57190438943&eid=2-s2.0-85084841834
	ResearchGate Profile: https://www.researchgate.net/profile/Valentyna_Molokanova
	Email: molokanova.vm@nmu.one **Office: 7/1002**

1.   Course abstract

Project management methodology studies three levels of management activity: project level, program level and portfolio level. In mature organizations, project management exists at a higher level in the form of project portfolio management. But according to the American Center for Business Research, project portfolio management is constantly developing. At the same time, the vast majority of organizations consider this area to be one of the key ones for gaining competitive advantages.

2. The purpose and objectives of the academic discipline

The purpose of the academic discipline is formation of a systemic understanding of the project portfolio among future scientists as a means of implementing systemic changes at the tactical level of organizational development and studying the specifics of the professional activities of project portfolio management specialists.

Course objectives:
– mastering the theoretical and conceptual basis of the course;
– learn to use the main components of contextual project management competence in managing project portfolios;
– apply organizational tools and acquired professional knowledge and skills in practice;

– manage the development of the organization through the implementation of programs and project portfolios ;
– creatively use the project approach adequately to the modern requirements of a dynamic environment.

3. Learning outcomes
Know, understand and be able to use in practical activities:
– basic methodological foundations for managing programs and project portfolios ;

– to understand the place and role of program and project portfolio management in the general system of organizational and economic knowledge;

– program and project portfolio management processes ;
– basic tools and skills for managing programs and project portfolios.
– methods and techniques for increasing the efficiency of production processes of a project organization through the latest developments and the implementation of innovative software and technical solutions.

4. Course structure.

Types and topics of training sessions	Contribution to the overall score, %
LECTURES	**60**
Topic 1. Purpose, objectives, object and subject of research of the discipline. Basic terms and specific features of portfolio management. Purpose and objectives of the discipline. Object and subject of study of the discipline. Classification of project management levels. Programs, portfolios and innovations. Strategy and portfolio of development projects. Types of relationships between projects and programs in the portfolio. Integration and organizational platform. Life cycle of a project portfolio.	8
Topic 2. Organizational platform for managing programs and project portfolios. Project-oriented system. Organizational development through programs and project portfolios. Integration and organizational platform.	8

Types and topics of training sessions	Contribution to the overall score, %
Project office. The place of the project office in managing programs and project portfolios. Mental space of project management.	
Topic 3. Project-oriented financial management. Fundamentals of project-oriented financial management. Basic concepts of financial design of portfolios, programs and projects. Principles and methods of forming project funds. Provision and security of project funds.	8
Topic 4. General provisions on program management . Program and corporate strategy. Program and its place in the project portfolio. Development of program architecture. Management by objectives and management by results. Scheme of general program optimization. Systems engineering in program management. Basic methods of program performance assessment.	8
Topic 5. General provisions on project portfolio management . Practical aspects of a systems approach in project portfolio management. Soft and hard systems approaches in program and portfolio management. Portfolio formation models. Project portfolio management processes. Systems engineering in project portfolio management.	8
Topic 6. **Basic concepts of organizational development management through projects .** Strategy and portfolio of organization development. Types of project relationships in the portfolio. Strategy development at the tactical level. Management by objectives and management by results. Balanced scorecard of the organization . Basic methods of assessing the performance of the project portfolio.	8
Topic 7. Community Integration and Management . Community Integration and Management. Integration Management Framework at Portfolio, Program and Project Levels. Human Resources Platform. Cultural Platform of Project-Oriented Management. Information Platform of Project-Oriented Management and Application of Software Products.	6
Topic 8. Value-based management . General concepts of value-based management. Models of assessing the values of a project organization. Sources of corporate values. Basic approaches to creating and delivering values. Environment and conditions for creating values.	6
PRACTICAL CLASSES	**40**
Practical work No. 1 **Topic: Formulating the mission, strategy, goals and priorities of a project-oriented organization.** Objective: to consolidate theoretical knowledge of the portfolio management methodology, develop practical skills in managing the processes of forming project portfolios in accordance with the organization's strategy.	8
Practical work No. 2 **Topic: Portfolio, Program and Individual Project Architecture** . Objective: to consolidate theoretical knowledge and develop the ability to practically apply the guidelines of international and national project management standards to ensure sustainable development of complex	8

Types and topics of training sessions	Contribution to the overall score, %
systems through project portfolios. To develop and present the portfolio and program architecture according to PMI standards.	
Practical work No. 3 **Topic: Key characteristics and success indicators of project portfolios.** Objective: to consolidate theoretical knowledge and develop practical skills in the application of modern information technologies in the field of project, program and portfolio management. To learn how to select criteria for ranking specific projects/programs before including them in the project portfolio.	8
Practical work No. 4 **Topic: Formation of a portfolio of competing projects.** Goal: to consolidate theoretical knowledge and develop practical skills in forming a portfolio of competing projects using modern software products.	8
Practical work No. 5 **Topic: Forming a portfolio of projects taking into account additional benefits** Goal: to consolidate theoretical knowledge and develop practical skills in forming a project portfolio, taking into account additional benefits from the use of modern software products.	8
TOGETHER	**100**

5. Technical equipment and/or software

Technical learning aids: multimedia and computer devices.
Distance learning tools: Moodle, MS Teams.
Software packages: MS Office.
The university email account (student.ip@nmu.one) has been activated on Office365.

6. Evaluation system and requirements

6.1. 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	perfectly
75-89	good
60-74	satisfactorily
0-59	unsatisfactorily

6.2. The maximum current performance of the applicant can be 100 points. The applicant for higher education can receive **a final grade** for the academic discipline based on the current assessment of knowledge, provided that the number of points scored for the final independent work is at least 60 points. The current performance consists of grades for the

performance of practical work (8 points for each work and the maximum total grade for all work - 40 points). The points received for the final independent work and for practical work are added and are the final grade for studying the academic discipline. The maximum current performance of the applicant can be 100 points

6.3. Criteria for evaluating current and final control: – final assessment takes place in the form of a differentiated assessment, which consists of a current assessment of practical work and an assessment of final independent work (maximum score – 60, which is formed as follows: 50% – correctness and completeness of the presentation of the material in the report, 50% – defense of individual work by answering control questions, correct preparation of the report and its timely submission .

7. Course Policy

7.1. Policy on academic integrity. Academic integrity of candidates for the degree of Doctor of Philosophy is an important condition for mastering the results of training in the discipline and obtaining a satisfactory grade in the current and final examinations. Academic integrity is based on condemning the practices of copying (performing written works 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 used in the educational process). At NTU "Dnipropetrovsk Polytechnic", the policy on academic integrity is regulated by the regulation "Regulations on the system of prevention and detection of plagiarism at the National Technical University "Dnipropetrovsk Polytechnic": https://cutt.ly/S08thYl

In case of violation of academic integrity by the applicant (copying, plagiarism, fabrication), the work is evaluated as unsatisfactory and must be re-done. In this case, the teacher reserves the right to change the topic of the assignment.

7.2. Communication policy. Applicants must have an activated university (corporate on the domain @nmu.one) email and be registered for the distance learning course "Optimization Multi-Stage Allocation-Distribution Problems". It is the responsibility of the higher education applicant to check their mailbox on Office365 once a week (every Sunday). All written questions to teachers regarding the course should be sent to the university email or to the distance learning course forum.

7.3. Resubmission Policy. Papers submitted after the deadline without valid reasons will be graded lower. Resubmission is permitted by the Graduate Studies Department for valid reasons (e.g., illness).

7.4. Attendance at classes. For full-time students, classes are held asynchronously. The student must personally notify the teacher of absence from class and the reasons for the absence. 7.5. Assessment appeal policy. If a PhD student disagrees with the assessment of his knowledge, he may appeal the grade given by the teacher in the prescribed manner https://cutt.ly/N08yRHA .

7.6. Participation in the survey. At the end of the course and before the start of the session, applicants will be asked to anonymously fill out electronic questionnaires (MS Office 365), which are available on the distance learning course or will be sent to your university mailboxes. Filling out the questionnaires is an important component of the educational activity, which will allow us to assess the effectiveness of the applied teaching methods and take into account your suggestions for improving the content of the academic discipline.

8. Recommended sources of information

8.1. Basic

1. Innovative tools for ensuring sustainable social development in the conditions of the knowledge economy: teaching aids (in slides) / T. V. Mamatova, V. M. Molokanova, I. A. Chikarenko. – Dnipro: DRIDU NADU, 2018. –1 electronic optical disk (CD-ROM).

2. Systemic Analysis in the management of complex systems development: a manual /V.M. Molokanova, A.V. Malienko, M.M. Odnovol, O.B. Vladyko; Ministry of Education and Science of Ukraine, National Technical University "Dnipro Polytechnic". – Dnipro: NTU "DP", 2024. – 95 p .

3. A Guide to the Project Management Body of Knowledge (PMBOK® Guide) / Project Management Institute, Inc.; Sixth Edition, 2017. - 756

4. The Standard for Program management. (20 17) Project Management Institute, Inc. Four Campus Boulevard Newtown Square, Pennsylvania USA .

5. Project Management Institute, PMI (2015). Delivering on Strategy: The Power of Project Portfolio Management. Thought Leadership Series November 2015. ©PMI.

8.2. Additional literature

1. Molokanova V. M. Changes in the management of the organization's project portfolios in the context of behavioral economics / V. M. Molokanova // Applied aspects of information technologies: collection of scientific works. –Odessa: Science and Technology . – 2019. – No. 4. T.2. – P. 345–358.

2. Molokanova V. M. Project-oriented development of organizations based on the evolutionary theory of values / V. M. Molokanova // Project management and production development: collection of scientific works –Luhansk: V. Dahl SNU, 2015. – No. 4(56). – P. 22–33.

3. Molokanova V. M. Synergetic aspect of organization adaptation to external environment changes / V. M. Molokanova // East European Journal of Advanced Technologies: collection of scientific works – 2015. – No. 5/3(77). – P. 4-10.

4. Molokanova V. M. Value-oriented analysis of decision-making in project management / V. M. Molokanova // Management of complex systems development: collection of scientific works – Kyiv: KNUBA. – 2016. – No. 25. – P. 32–39.

9. INFORMATION RESOURCES

Repository of the National Technical University "Dnipro Polytechnic": http://ir.nmu.org.ua/