

# FORMATION AND DEVELOPMENT OF IT PROJECT TEAMS

## COURSE SYLLABUS

<b>Code and name of specialty</b>	121 Software Engineering 122 Computer Science 126 Information Systems and Technologies	<b>Institute / faculty</b>	Faculty of Computer Science and Software Engineering
<b>Program name</b>	Software Engineering Computer Science and Intelligent Systems Information Systems Software	<b>Department</b>	Software Engineering and Management Information Technologies
<b>Type of program</b>	Educational and Professional	<b>Language of instruction</b>	Ukrainian, English

### LECTURER

<b>Full name, e-mail</b>	Nataliia Stratiienko, Nataliia.Stratiienko@khpi.edu.ua
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**Ph.D., Associate Professor, Professor of the Department of Software Engineering and Management Information Technologies, NTU «KhPI».** Prepared and published more than 60 research papers, training manuals and textbooks (1 training manual recommended by the Ministry of Education and Science of Ukraine, 1 training manual recommended by the Academic Council of NTU "KhPI", 3 articles in publications indexed in Scopus) (Google Scholar: <https://scholar.google.com/citations?user=9cw0zwwgAAAAJ&hl=ru>; ORCID: <https://orcid.org/0000-0002-7925-6687>; Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57196007565>).

**Leading lecturer of courses:** *Fundamentals of the Theory of Algorithms, Algorithms and Data Structures, Computer Mathematics, Fundamentals of Project Management, Formation and Development of IT Project Teams (in Ukrainian and English)*

### GENERAL DESCRIPTION OF THE COURSE

<b>Summary</b>	The course “Formation and Development of IT Project Teams” is an optional course in the profiled discipline package 03 “Innovation Campus” of the specialties 121 “Software Engineering”, 122 “Computer Science”, and 126 “Information Systems and Technologies”. It is taught in the seventh semester in the amount of 120 hours (4 ECTS credits), in particular: lectures – 16 hours, workshops – 16 hours, self-study work – 88 hours. The study of the discipline ends with the test.
<b>Course objectives</b>	This course objective is to form a modern system of views and special knowledge in the field of formation and development of IT project teams necessary to create a project team, to assist it in achieving maturity, ensuring effective work, motivating employees and efficient meetings; acquisition of practical skills for their successful implementation.
<b>Types of classes and control</b>	Lectures, workshops, self-study work. Continuous assessment – workshops, test. Final assessment – test.
<b>Term</b>	7

Student workload (credits) / Type of course	4 / Optional	Lectures (hours)	16	Workshops (hours)	16	Self-study (hours)	88
<b>Program competences</b>	<p>121- GC 02. Ability to apply knowledge in practical situations.</p> <p>121- GC 05. Ability to learn and master modern knowledge.</p> <p>121- GC 06. Ability to search, process and analyze information from various sources.</p> <p>121- GC 07. Ability to work in a team.</p> <p>121- PC17. Ability to adhere to specifications, standards, rules and recommendations in the professional field in the implementation of life cycle processes.</p> <p>121- PC21. Ability to assess and take into account economic, social, technological and environmental factors affecting the sphere of professional activity.</p> <p>121- PC26. Ability to algorithmic and logical thinking.</p> <p>122- GC1. Ability to abstract thinking, analysis and synthesis.</p> <p>122- GC2. Ability to apply knowledge in practical situations.</p> <p>122- GC3. Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>122- GC6. Ability to learn and master modern knowledge.</p> <p>122- GC7. Ability to search, process and analyze information from various sources.</p> <p>122- GC9. Ability to work in team.</p> <p>122- GC10. The ability to be critical and self-critical.</p> <p>122- GC11. Ability to make justified decisions.</p> <p>122- GC12. Ability to evaluate and ensure the quality of performed work.</p> <p>122- GC14. Ability to implement personal rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights, and freedoms in Ukraine.</p> <p>122- PC10. Ability to apply methodologies, technologies, and tools to manage the life cycle processes of information and software systems, information technology products and services according to customer requirements.</p> <p>122- PC20. Ability to develop the architecture of software systems and their particular components during the design of intelligent management systems in various fields, to manage the life cycle of intelligent management systems software.</p> <p>126- GC 1. Ability to abstract thinking, analysis and synthesis.</p> <p>126- GC 2. Ability to apply knowledge in practical situations.</p> <p>126- GC 3. Ability to understand the subject area and professional activity.</p> <p>126- GC 5. Ability to learn and master modern knowledge.</p> <p>126- GC 6. Ability to search, process and summarize information from various sources.</p> <p>126- GC 7. Ability to develop and manage projects.</p> <p>126- GC 8. Ability to evaluate and ensure the quality of work performed.</p> <p>126- GC 9. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine</p> <p>126- PC 1. Ability to analyze the object of design or operation and its subject area.</p> <p>126- PC 5. Ability to assess and take into account economic, social, technological and environmental factors at all stages of the life cycle of infocommunication systems.</p> <p>126- PC 7. Ability to apply information technology during the creation, implementation and operation of a quality management system and to estimate the costs of its development and maintenance.</p> <p>126- PC 14. Ability to form new competitive ideas and implement them in projects (startups).</p>						
<b>Learning outcomes</b>	<b>Teaching and learning methods</b>			<b>Forms of assessment</b>			

121- PO01. Analyze, purposefully search for and select the necessary information and reference resources and knowledge to solve professional problems, taking into account modern advances in science and technology.

121- PO02. Know the code of professional ethics, understand the social significance and cultural aspects of software engineering and adhere to them in professional activities.

121- PO16. Have the skills of team development, approval, design and release of all types of software documentation.

121- PO22. Know and be able to apply methods and tools of project management.

121- PO23. Be able to document and present the results of software development.

122- PLO11. Have the skills to manage the life cycle of software, products, and services of information technology under the requirements and restrictions of the customer, be able to develop project documentation (feasibility study, technical task, business plan, agreement, contract).

122- PLO20. Develop the architecture of software systems and their particular components during the construction of intelligent management systems in various fields, as well as manage the life cycle of intelligent management systems software.

126-PLO 6. Demonstrate knowledge of the current level of information systems technology, practical skills of programming and use of applied and specialized computer systems and environments for their implementation in professional activities.

126-PLO 7. Justify the choice of technical structure and develop appropriate software that is part of information systems and technologies.

126-PLO 8. Apply the rules of design materials of information systems and technologies, know the composition and sequence of design work, taking into account the requirements of relevant legal documents for implementation in professional activities.

Interactive lectures with presentations, discussions, workshops, teamwork, case method, feedback method from students, problem learning

Written individual assignments for workshops (CAS), assessment of knowledge in workshops (CAS), express - survey(CAS), online tests (CAS), final / semester control in the form of a semester test, in accordance with the schedule of the educational process (FAS )

## ASSESSMENT AND GRADING

Range s of points corres pondi ng to grades	core (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points	<b>100% Final assessment</b> as a result of Final test (30%) and Continuous assessment (70%). <b>30% Final test</b> <b>70% Continuous assessment:</b> Workshops (40%= 8 x 5%) Test (30%)
	90-100	A	excellent		
	82-89	B	good		
	74-81	C	satisfactory		
	64-73	D			
	60-63	E	Unsatisfactory (with the exam retake option)		
	35-59	FX			
	0-34	F	Unsatisfactory (with mandatory repetition of the course)		

**Course policy** Students are required to attend classes as scheduled and comply with ethical conduct. If absent, students will need to complete all tasks to compensate for the missed classes. Participation in workshops requires preliminary preparation and advance processing of all the necessary materials for productive discussions during the session. Written assignments must be submitted on time.

## COURSE STRUCTURE AND CONTENT

Topic	Workshop	Self-study
<b>Topic 1</b> Teams in an IT project: definition, classification, goals	<b>Workshop 1</b> Teams in an IT project: definition, classification, goals	Studying the course topics with the help of recommended reading, homework
<b>Topic 2</b> IT project team planning	<b>Workshop 2</b> IT project team planning	
<b>Topic 3</b> Team forming	<b>Workshop 3</b> Team forming	
<b>Topic 4</b> Job interviews	<b>Workshop 4</b> Job interviews	
<b>Topic 5</b> Training, certification and development of project personnel	<b>Workshop 5</b> Training, certification and development of project personnel	
<b>Topic 6</b> Effective team communication. Meetings and conferences effectively	<b>Workshop 6</b> Effective team communication. Meetings and conferences effectively	
<b>Topic 7</b> Conflict and stress management	<b>Workshop 7</b> Conflict and stress management	
<b>Topic 8</b> Motivation in IT teams	<b>Workshop 8</b> Motivation in IT teams	

## RECOMMENDED READING

**Compulsory**

1. Amy, C. Edmondson, Jean-Francois Harvey, Foreword by Henry W. (2017). Chesbrough Extreme Teaming: Lessons in Complex, Cross-Sector Leadership. Bingley. Emerald Publishing Limited, 224 p.
2. Brené Brown. (2018). Dare to Lead: Brave Work. Tough Conversations. Whole Hearts. London: Ebury Publishing, 320 p.
3. Маккрістал, Стенлі, Коллінз, Тантум, Сильверман, Девід, Фассел, Кріс. (2018). Команда команд. Нові правила взвемодії у складному світі. / пер. з англ. А. Жищинської. Дніпро: Моноліт, 416 с.
4. Іванова С. (2019). Мистецтво добору персоналу. Як оцінити людину за годину / пер. з рос. А. Стояновської. Дніпро: Моно-літ, 304 с.
5. Філдінг Пол Дж. (2020). Як керувати проектами / пер. з англ. О. Якименко. Харків: Вид-во «Ранок»: Фабула, 240 с.

**Recommended**

- 6 Brett Bartholomew. (2017). Conscious Coaching: The Art and Science of Building Buy-In. Createspace Independent Publishing Platform, 292 p.
- 7 Селютін, В. М., Яцун, Л. М. (2018). Управління персоналом: практикум [Електронний ресурс]: навч. посібник. Харків: ХДУХТ, 188 с.
- 8 A Guide to the Project Management Body of Knowledge (PMBOK Guide). 6th ed. /Project Management Institute. Newton Square. PA: Project Management Institute, 2018. 592 p.

**Academic integrity**

Students must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to show discipline, politeness, friendliness, honesty, responsibility

The content of this syllabus is consistent with the course program.