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HIGHER EDUCATION INSTITUTION		Luhansk Taras Shevchenko National University
Institute (faculty), department or other structural unit conducting the course		Institute of Physics, Mathematics and Information Technologies, Department of Information Technologies and Systems.
COURSE DESCRIPTION		
1	Course name	Methodology of Using Digital Technologies in School Education.
2	Module code	[15mps6].(B52.5)
3	Cycle/level of higher education	Ukraine NQF – 6th level, FQ-EHEA – 1st cycle, EQF-LLL – 6th level First (Bachelor's) level
4	Degree	Bachelor
5	Branch of knowledge, training direction	01 «Education», 014 «Secondary education»
6	Specialty, specialization (if any)	014.04 Secondary education (Mathematics)
7	Name of the educational program, which includes the course	014.04 Secondary education (Mathematics)
8	Educational qualification	Bachelor of Secondary Education, teacher of mathematics and computer science



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9	Characteristic of the course by the form of study	Full-time
10	Status of the course	Compulsory
11	Prerequisites for the course	List of disciplines that should be studied before: Pedagogy, Didactics, General Psychology, Age Psychology, Methodics of Teaching Informatics, School Course of Informatics, Basic knowledge and skills in digital literacy
12	Year of study, semester	4, 7
13	Course's volume in ECTS credits and its distribution in hours by the forms of organization of educational process and types of training sessions.	3,0 ECTS credits. Total hours: 150, incl. full-time form of study: 18 lecture hours, 42 hours for practical and laboratory works, 90 hours – consultations, individual student work.
14	Form of final evaluation	Exam
15	Study language	Ukrainian, English



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16	Internet address of the permanent placement of course educational content	do.luguniv.edu.ua
17	Developer(s), working group (members)	Candidate of Sciences, Docent, head of Department of Information Technologies and Systems – Mykola Semenov Assistant at Department of Information Technologies and Systems – Volodymyr Matiievskyi
Brief summary of the course		
<p>The course "Use of Digital Technologies for Supporting Learning and Teaching at School" provides conditions for preparing future teachers to use digital learning technologies at school and creates opportunities for pedagogical creativity. A feature of the course is the practical orientation, the creation of educational content, the use of a business game for modeling pedagogical situations and evaluation of the developed methodology.</p> <p>The content of the training course contains materials from several main topics: methodology of developing e-learning content; methodology of using digital instruments during educational process at school; organization of digital and blended learning; work with computer e-learning platforms; organization of communication and cooperation in the e-learning environments, connectivity in educational technologies; modern services for organizing digital educational environment in school; methods and technologies for evaluating e-learning tools; teacher's tools to ensure the quality of e-learning - Moodle, Google, Microsoft and others.</p>		
Key concepts		
Digital competence, digital literacy, digital pedagogical technologies, digital teaching tools, connectivity, digital learning, blended learning, distance learning		
Course Objective		
The course is intended for future teachers to form their pedagogical and professional digital competencies.		
Program competencies formed during the course		
Integral competency (IC)	Ability to create and implement pedagogical technologies at school that are based on the use of digital instruments.	



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General competencies (GC)	GC-6 Digital competency. GC-7 Cognitive flexibility. Ability to acquire new knowledge.
Professional (special) competencies (PC)	PC-3 Ability to organize learning and teaching process with use of digital technologies. PC-6 Ability of integrated application of pedagogical technologies and digital instruments. PC-7 Ability to use digital technologies for evaluation of students' learning outcomes.
Intended learning outcomes	
<p>ILO 1.1. Know the essence of digital technologies, the genesis of this concept, its differences from information and communication technologies.</p> <p>ILO 1.2. Realize the theoretical reasoning of the planning and organization of the educational process with the use of digital technologies.</p> <p>ILO 1.3. Understand the transdisciplinarity of digital technologies and their significance for STEAM.</p> <p>ILO 2.1. Create educational digital content.</p> <p>ILO 2.2. Gain the skills of using digital instruments in the educational process.</p> <p>ILO 3.1. Assess students' digital educational achievements.</p> <p>ILO 3.2. Create educational and methodological support for digital education at school.</p> <p>ILO 3.3. Prepare and conduct a STEAM project.</p>	
Control of students' academic progress	
Tools to achieve learning outcomes	Activity in the didactic, role-playing games, practical classes, laboratory work, case work, modular works (test and written work).
Summative assessment	<p>100 points for the course</p> <p>A 1.1 – 5%</p> <p>A 1.2 – 5%</p> <p>P 1.1 – 3%</p> <p>P 1.2 – 3%</p> <p>A 1.3 – 5%</p> <p>A 1.4 – 5%</p> <p>P 1.3 – 3%</p>



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	<p>P 1.4 – 3%</p> <p>Module paperwork 1 – 15%</p> <p>P 2.1 – 2%</p> <p>P 2.2 – 2%</p> <p>L 2.1 – 3%</p> <p>L 2.2 – 3%</p> <p>L.2.3 – 3%</p> <p>P 2.3 – 2%</p> <p>L 2.4 – 3%</p> <p>P 2.4 – 2%</p> <p>L 2.5 – 3%</p> <p>P 2.5 – 2%</p> <p>L 2.6 – 3%</p> <p>P 2.6 – 2%</p> <p>L 2.7 – 3%</p> <p>P 2.7 – 2%</p> <p>L 2.8 – 3%</p> <p>P 2.8 – 2%</p> <p>L 2.9 – 3%</p> <p>Module paperwork 2 – 10%</p>
Communication and feedback	<p>Information about the results of attestation is available to student on the site with the course content. The grades have lecturer's reviews with remarks and instructions.</p> <p>Each task has a time limit for its completion.</p> <p>The teacher conducts a preliminary evaluation of the tasks completed.</p> <p>Defense and correction of the grade is carried out during consultations and f2f sessions.</p> <p>Didactic games are evaluated on the basis of self-examination, analysis and expert assessment of the teacher.</p> <p>Project work is evaluated during open defense: presentation and answers to questions.</p> <p>Consultations are planned in the weekly schedule of the course, implemented both virtually and f2f.</p> <p>Teacher's contacts are presented in the course as the e-mail address.</p>



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Grading scale: national and ECTS	AMOUNT OF POINTS	ECTS Grade	GRADE ACCORDING TO NATIONAL SCALE	
			exam	test
	90-100	A	excellent	evaluated
	83-89	B	good	
	75-82	C		
	63-74	D	satisfactorily	not evaluated
	50-62	E		
	21-49	FX	unsatisfactory	
0-20	F			

Course Structure

Names of content modules and themes	Number of hours											
	full-time form						part-time form					
	total	including					total	including				
		l	p	lab	ind	self.		l	p	lab	ind	self.
1	2	3	4	5	6	7	8	9	10	11	12	13
Module 1												
General methodology of using digital technologies in educational process												
The philosophy of digital technologies and their place in higher education: opportunities and risks.	2	2										
European and Ukrainian regulatory documents, standards about digital competence of the teacher.	10	2				8						
Modern understanding of student's digital	6	2				4						



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literacy, stages and methodology of its formation.													
Digital learning: theoretical rationale, principles of digital learning and different approaches to its organization.	8	2	2			4							
Technology of creating digital content.	10	2	2			6							
Methods of supporting students in digital learning.	8	2				6							
Teacher's use of digital tools.	8	2				6							
Methods of evaluating students' learning achievements in digital learning.	8	2	2			4							
Digital technologies in STEAM education.	16	2	2			12							
Total for module 1	76	18	8			50							
Module 2													
Application of digital technologies in educational process (by flipped learning)													
Ensuring the quality of digital learning	6		2			4							
Digital content planning (distance course)	8		2			6							
LMS Basics	18			6		12							
Presentation of theoretical material in the digital course	8		2	2		4							



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Methodical aspects of adaptation of digital content	8		2	2		4							
Formation of practical skills for digital learning	6		2	2		2							
Organization of student support for digital learning	8		2	2		4							
Active methods for digital learning	6		2	2		2							
Organization of learning outcomes evaluation.	6		2	2		2							
Total for module 2	74		16	18		40							
Total hours	150	18	24	18		90							

Course Program (content block)

Module 1	General methodology of using digital technologies in educational process		
Topic	Topics of seminars / practical / laboratory classes (if any)	Approximate topics for individual and / or group tasks (if any)	Tasks for individual work
Topic 1. The Philosophy of Digital Technologies and Their Place in Higher Education: Opportunities and Risks.			Searching for information on the Internet.



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Topic 2. European and Ukrainian regulatory documents, standards about digital competence of the teacher.		A 1.1. Creating Summarizing Report (Group Work)	Learning and processing of documents.
Topic 3. Modern understanding of student's digital literacy, stages and methodology of its formation.		A 1.2. Development of recommendations for the formation of digital literacy in school (group work)	Learning the support literature
Topic 4. Digital learning: theoretical rationale, principles of digital learning and different approaches to its organization.	P 1.1 Development of recommendations for organizing digital education at school		Preparation for practical lesson
Topic 5. Technology of creating digital content.	P 1.2 Development of pedagogical scenario of digital content		Preparation for practical lesson
Topic 6.		A 1.3. Development of	Exploring the sources.



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Methodology of supporting students in digital learning.		recommendations (individual work)	
Topic 7. Teacher's use of digital tools.		A 1.4. Creating a teacher's digital tools directory	Searching for information on the Internet.
Topic 8. Methodology of evaluating students' learning achievements in digital learning.	P 1.3 Development of rubrics for criteria. Development of computer test scenario		Preparation for practical lesson
Topic 9. Digital technologies in STEAM education.	P 1.4 STEAM lesson scenario development		Preparation for practical lesson
Module 2	Application of digital technologies in educational process (by flipped learning)		
Topic 1. Ensuring the quality of digital learning	P 2.1 Development of requirements for digital learning.		Preparation for lesson
Topic 2. Digital content planning (distance course)	P 2.2 Development of a work program and a weekly digital course planning		Preparation for lesson
Topic 3. LMS Basics	L 2.1 Setting up the new course L 2.2 Course prototype		Preparation for lesson



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	L.2.3 Adding elements of course		
Topic 4. Presentation of theoretical material in the digital course	P 2.3 Scheme of the lecture L 2.4 Presentation of educational content in the course		Preparation for lesson
Topic 5. Methodological aspects of adaptation of digital content	P 2.4 Development of recommendations for the course L 2.5 Adapting the course content		Preparation for lesson
Topic 6. Formation of practical skills for digital learning	P 2.5 Development of practical tasks and case scenarios in the course. L 2.6 Implementation of practical tasks in the course		Preparation for lesson
Topic 7. Organization of student support for digital learning	P 2.6 Scenarios development for consultations, chats and other communication features. L 2.7 Role-playing game "Communication in the course"		Preparation for lesson
Topic 8. Active methods for digital learning	P 2.7 Development of flipped lesson scenario. L 2.8 Implementation of flipped lesson in digital course.	Team work (role-playing game)	Preparation for lesson
Topic 9. Organization of learning outcomes evaluation.	P 2.8 Development of evaluation criteria for a flipped lesson L 2.9 Role-playing game «Assessment in the course»	Team work (role-playing game)	Preparation for lesson



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Technological and resource support used for a course (as needed)	
Use of opportunities of the innovation class as a component of the educational ecosystem MoPED	A class of creative training is used.
Recommended sources of information (including electronic resources)	<p>1. Base</p> <ol style="list-style-type: none">1. Course on educational web-portal do.luguniv.edu.ua2. Кухаренко, В. М., О. В. Рибалко, and Н. Г. Сиротенко. "Дистанційне навчання: Умови застосування. Дистанційний курс: Навчальний посібник." <i>Харків: НТУ "ХШ", "Торсіна" (2002).</i> <p>2. Supportive</p> <ol style="list-style-type: none">1. http://vo.ippo.kubg.edu.ua/тренінги-для-вчителів/ікт-компетентність2. https://www.microsoft.com/uk-ua/education/default.aspx3. Morze, Nataliia V., and Olena H. Hlazunova. "Моделі ефективного використання інформаційно-комунікаційних та дистанційних технологій навчання у вищому навчальному закладі." <i>Інформаційні технології і засоби навчання 6.2 (2008).</i> <p>3. Other</p> <ol style="list-style-type: none">1. Структура ІКТ-компетентності учителів. Рекомендації ЮНЕСКО, CFT (2008, 2011, 2012)2. Цифрова адженда України – 2020 (2016)3. DigComp 2.0, DigComp 2.1 (2016, 2017)4. Proposal for a COUNCIL RECOMMENDATION on Key Competences for Lifelong Learning (2018)
Internal quality assurance system of teaching the course	
Conducting student survey about the quality of teaching the course and the results of their success.	



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Feedback from independent internal and external experts on the quality of teaching the course.