

Міністерство освіти і науки України
Харківський національний університет імені В.Н. Каразіна

Кафедра фізичної географії та картографії

“ЗАТВЕРДЖУЮ”



Проректор з науково-педагогічної роботи

Олександр ГОЛОВКО

Сергій 2022 р.

Робоча програма навчальної дисципліни

CARTOGRAPHIC BASE FOR SPATIAL PLANNING

(англійською мовою)

(назва навчальної дисципліни)

рівень вищої освіти	<u>другий (магістерський)</u>
галузь знань	<u>10. Природничі науки, 01. Освіта / Педагогіка</u>
спеціальність	<u>106. Географія, 014.07 Середня освіта (Географія)</u>
освітня програма	<u>Географія; Географія, Людина і природа та туристська робота</u>
вид дисципліни	<u>за вибором</u>
факультет	<u>геології, географії, рекреації і туризму</u>

2022 / 2023 навчальний рік

Програму рекомендовано до затвердження вченою радою факультету геології, географії, рекреації і туризму «30» серпня 2022 року, протокол № 9

РОЗРОБНИКИ ПРОГРАМИ: Попович Н.В., к. геогр. н., доцент кафедри фізичної географії та картографії

Програму схвалено на засіданні кафедри фізичної географії та картографії
Протокол від «23» червня 2022 року № 10

Завідувач кафедри фізичної географії та картографії



(підпис) (Юлія ПРАСУЛ)
(прізвище та ініціали)

Програму погоджено з гарантими освітньо-професійних програм:

Гарант ОПП «Географія»



(підпис) (Наталія БУБИР)
(прізвище та ініціали)

Гарант ОПП «Географія, Людина і природа та туристська робота»




(підпис) (Сергій КУЛІШ)
(прізвище та ініціали)

Програму погоджено науково-методичною комісією факультету геології, географії, рекреації і туризму

Протокол від «29» серпня 2022 року № 7

Голова науково-методичної комісії
факультету геології, географії, рекреації і туризму



(підпис) (Олександр ЖЕМЕРОВ)
(прізвище та ініціали)

INTRODUCTION

The curriculum of the discipline "**Cartographic base for spatial planning**" is compiled in accordance with the educational and professional training program of the **master's degree "Geography**», specialty 106. Geography, and "Geography, Man and Nature and Tourism Work", specialty 014.07 Secondary Education (Geography).

1. Description of the discipline

1.1. The purpose of teaching of the discipline is providing students with theoretical knowledge and practical skills in cartographic substantiation of spatial planning in connection with natural, social, economic, environmental, political and aesthetic aspects of spatial development.

1.2. The main tasks of teaching the discipline are providing students with: the concepts of spatial planning and modern planning systems of the world countries (including Ukraine); the knowledge of properties and features of cartographic works that serve to substantiate the spatial planning; skills of working with the cartographic works and their design; the knowledge, techniques and methods of analysis, evaluation and use of cartographic information in spatial planning, including the use of geographic information systems.

1.3. The number of credits: 4.

1.4. Total hours: 120.

1.5. Characteristics of the discipline	
<u>Normative / optional</u>	
Full-time education	Distance education
Preparation year	
1st	1st
Semester	
1st	1st
Lectures	
32 hours	8 hours
Practical, seminar classes	
16 hours	6 hours
Laboratory classes	
hours	hours
Individual work	
72 hours	106 hours
Individual tasks	
hours	hours

1.6. Planned learning outcomes

Formed competence:

«*Geography*»

- ability to think abstractly, analyze and synthesize information; scientific worldview, knowledge of basic theories, concepts, teachings that form scientific picture of the world (GC01);

- ability to use information and communication technologies, apply knowledge in practical situations **(GC03)**;
- ability to adapt and act in a new situation, related to work in the specialty, use scientific tools for conducting theoretical and experimental research in professional activity **(GC04)**;
- ability to communicate in a foreign language **(GC09)**;
- ability to use special geographic methods and approaches, geoinformation technologies for solution of specific scientific and applied problems in the field of geography, nature management, urban and regional development **(SC03)**;
- ability to use professional knowledge in geography in the process of comprehensive research of territories, ability to design and facilitate implementation of regional sustainable development programs, carry out geoplanning of territories of various hierarchical level **(SC04)**;
- ability to develop and implement mechanisms of territorial management and geoplanning, in particular, to provide professional evaluation of programs, strategies and plans of territorial development, processes of globalization, regionalization and urbanization in the world, to carry out their geo-ecological and socio-geographic expertise and monitoring **(SC05)**;
- ability to apply interdisciplinary approaches to critical understanding of problems of nature management, geoplanning, urban and regional development, recreation and tourism, to evaluate possible risks, socio-economic and environmental consequences of management decisions in the field of nature management, urban and regional development **(SC07)**;
- ability to apply knowledge of cartography in the process of solving professional problems, to know methods of description, analysis, systematization of information obtained from thematic maps, to design cartographic works using modern technologies **(SC11)**.

"Geography, Man and Nature and Tourism Work"

- ability to work in a team, interact with other people **(GC04)**;
- skills in using basic methods and means of interpersonal communication, speech styles, practical experience of communication in national and foreign languages in the field of geographical education; skill to constantly enrich speech **(GC05)**;
- skills of searching, processing and analyzing information from various sources, its scientific processing and usage, in particular, comparison, analysis and representations based on a variety of methods and approaches, including information and communication technologies **(GC07)**;
- research competence, ability to adapt and act in new situations: ability to use scientific tools for conducting theoretical and experimental research in educational and professional activities, practical application of latest ideas, suggestions, educational practices, ability to work, get results, make decisions and be responsible for them **(GC09)**;
- ability to use geographical concepts, paradigms, theories, ideas, principles in appropriate and critical way for explanation of written, oral and visual means of phenomena and processes at different spatial levels (global, national, regional, local) **(SC02)**;
- ability to establish the role and place of Ukraine in the modern world in the context of its geographical development factors, analyze and explain features of geospatial organization of nature, population and economy of Ukraine and its administrative units **(SC06)**.

According to the requirements of the educational program, students have to achieve the following learning outcomes:

«Geography»

- communicate freely on professional and scientific issues in a foreign language **(PLO 03)**;
- apply modern models and information technologies for conducting research and development in the field of geography, nature management, urban and regional development **(PLO 07)**;

- participate in the development of programs and strategies of city and regional development, planning of territories of various hierarchical level (**PLO 08**);
- conduct research on manifestations of the development of natural and social-geographic geosystems in complex and unpredictable conditions, to forecast their development, analyze alternatives, assess risks and possible consequences (**PLO 09**);
- professionally evaluate programs, strategies and plans of territorial development, to carry out their geocological and socio-economic examination and monitoring (**PLO 10**);
- use cartographic works in geographical studies, to apply various techniques of the cartographic research method (**PLO 17**).

"Geography, Man and Nature and Tourism Work"

- explain the changes that occur in the geographical environment under the influence of natural and anthropogenic factors, to formulate the consequences and determinants in the context of the concept of sustainable development (**PLO 16**);
- be able to apply international and national standards and practices in professional activity, to apply national and foreign languages in professional activity (**PLO 07**);
- apply conceptual and terminological apparatus of geography, its theoretical and empirical achievements at the level that allows to interpret natural-geographical and social-geographical phenomena and processes, connect and compare different views on problematic issues of modern geography, which is the basis for creative thinking and innovative activity, in particular in the context of research work (**PLO 17**);
- perform selection, analysis, presentation and distribution of geographic information in the national language, using a variety of written, oral and visual aids, cartographic methods (in particular, information and communication technologies) (**PLO 24**);
- be able to work by profession in the international context and the global information environment (**PLO 29**);
- skills to evaluate unpredictable problems in professional activity and make deliberate choice of ways to solve them, to be able to take responsibility for the results of their professional activity (**PLO 06**).

2. Thematic plan of the discipline

Section 1. CARTOGRAPHIC BASE OF SPATIAL PLANNING: THE ESSENCE OF THE CONCEPT, HISTORY OF DEVELOPMENT, RELATIONSHIP WITH SCIENTIFIC DISCIPLINES

Topic 1. Spatial planning: conceptual and terminological system. Essence of the concepts of "spatial development" and "spatial planning". History of development of spatial planning in Ukraine and the world. World and European documents on spatial planning. Spatial planning system in Ukraine.

Topic 2. The essence of the cartographic base for spatial planning. Relationship of spatial planning with geography and cartography. Types, properties and features of cartographic works that serve to substantiate the spatial planning. Cartographic support of development strategies of national, regional and local level. Cartographic support of functional zoning, modeling of protected areas.

Section 2. CARTOGRAPHIC METHOD OF RESEARCH IN SPATIAL PLANNING

Topic 1. Using the cartographic method for analysis and forecasting of the development of the area. Techniques of cartographic research method, used in spatial planning. Determining the required data for solving spatial planning tasks, attributes and data connections. Modeling spatial

connections (traffic routing; qualimetric assessment of the area). Analysis of social, economic, ecological condition of the area and its changes over time.

Topic 2. The role and place of geographic information systems (GIS) in spatial planning. GIS as spatial management tool. The use of modern computer technology in spatial planning. Regional GIS. GIS in the municipal administration. GIS-analysis of the location of objects to solve the problems of spatial management: creating interactive maps.

3. The structure of the discipline

Name of sections and topics	Number of hours											
	full-time education						distance education					
	Total	including					Total	including				
		lec	pr	lab		ind		lec	pr	lab		ind
1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Section 1. CARTOGRAPHIC BASE OF SPATIAL PLANNING</i>												
Topic 1	30	8	4	–	–	18	31	2	1	–	–	28
Topic 2	30	8	4	–	–	18	31	2	1	–	–	28
Total for Section 1	60	16	8	–	–	36	62	4	2	–	–	56
<i>Section 2. CARTOGRAPHIC METHOD OF RESEARCH IN SPATIAL PLANNING</i>												
Topic 1	30	8	4	–	–	18	29	2	2	–	–	25
Topic 2	30	8	4	–	–	18	29	2	2	–	–	25
Total for Section 2	60	16	8	–	–	36	58	4	4	–	–	50
Total hours	120	32	16	–	–	72	120	8	6	–	–	106

4. Topics of practical classes

№	Name of the topic	Number of hours	
		full-time education	distance education
1	Cartographic substantiation of spatial planning in European countries	4	1
2	Cartographic modeling of the national nature park	4	1
3	Cartographic substantiation of the unification of territorial communities in Ukraine	2	1
4	Analysis of spatial differentiation of united territorial communities	2	1
5	Creating an interactive map of a capable network of primary health care (PHC) provision	4	2
	Total	16	6

5. Tasks for individual work

№	Types, content of the individual work	Number of hours	
		full-time education	distance education
1	Study global and European documents on spatial planning: United Nations Human Settlements Programme; European Regional / Spatial Planning Charter (Torremolinos Charter); Guiding Principles for Sustainable Spatial Development of the European Continent; The EU Compendium of Spatial Planning Systems and Policies; Territorial Agenda of the European Union 2020	10	18
2	Deepen knowledge about legislative support of spatial planning in Ukraine, namely: state building norms of Ukraine; General scheme of planning of the territory of Ukraine; types of urban planning documentation; schemes of planning the territory of regions, districts; zoning plans and detailed territorial plans	8	10
3	According to literary sources, deepen knowledge on the topic: properties and features of cartographic works that justify spatial planning	10	18
4	Analyze the cartographic support of regional development strategies of Ukraine to 2020	8	10
5	Find the information on the application of the cartographic method to solve the problems of spatial planning: creating a map of land use for evaluation and planning; monitoring of water supply management of relevant network devices; solving telecommunication problems on the placement of new cellular devices, etc.	18	25
6	In-depth study of the topic: Route planning in ArcGIS	4	5
7	Deepen knowledge of the history of GIS application in applied tasks of spatial management, relevant research and in certain areas of business	7	10
8	According to literature and Internet sources find specific examples of the usage of GIS in regional and municipal management	7	10
	Total	72	106

6. Individual tasks

Not provided for in working curricula.

7. Teaching methods

The following teaching methods are used: verbal (conversations, lectures), visual (illustration, demonstration), practical (practical work). Lectures can be held remotely in the format of a video conference (Zoom, Google Meet, etc.), students are given questions for self-examination and self-control. Practical classes can take place in classroom or remotely. All

materials and educational and methodological complex are presented in Office365. Individual and group consultations can take place in classroom or remotely (using Telegram, e-mail, etc.).

8. Methods of control

Methods of control include: theoretical defense of practical works; current express survey based on lecture topics; participation in discussions during lectures and practical classes; current control work to check the mastering of the course material.

9. Scoring scheme

Current check and individual work							Final Test	Total
Section 1		Section 2			Test work	Total		
PW1	PW2	PW3	PW4	PW5	10	60	40	100
10	10	10	10	10				

PW1 ... PW5 – practical works

Evaluation criteria

Practical work on the discipline are evaluated as follows:

Practical works	Number of points	Evaluation criteria
PW1	10	2 points – completeness of the description of the spatial planning system in Europe; 2 points – illustration of the report with cartographic works used in the spatial planning of Europe; 2 points – the quality of the presentation; 2 points – logic and structure of the report; 2 points – answers to questions, participation in the general discussion
PW2	10	2 points – description of the area of NPP modeling; 2 points – justification of the projected boundary of the NNP; 2 points – justification of the choice of sites for the functional zones of the NNP; 2 points – the quality of cartographic materials; 2 points – theoretical defense of the work
PW3	10	4 points – correctness and completeness of the used technique; 4 points – the quality of prepared cartographic materials; 2 points – theoretical defense of the work
PW4	10	4 points – implementation of UTC typing; 4 points – the quality of mapping according to the results of UTC typing; 2 points - theoretical defense of the work
PW5	10	4 points – quality and completeness of the geographical basis; 4 points – mapping of areas covered by the existing network of PHC;

		2 points – theoretical defense of the work
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If a student submits practical work after the term, he or she loses 50% of points.

The test work is estimated at 10 points. The weight of each question is indicated on the test form.

The criterion for admission to the final test is the submission of all practical works and the test work. Final test is estimated at 40 points and is held in the Google Forms. The weight of each question is indicated in the Google Form.

Rating scale

For credits

The sum of points for all types of educational activities during the semester	Score on a national scale (for credits)
90–100	Passed
70-89	
50-69	
1-49	Fail

10. Recommended reading

1. Dühr S. The Visual Language of Spatial Planning. Exploring Cartographic Representations for Spatial Planning in Europe / S. Dühr. – Routledge, 2007. – 216 p.
2. An Agenda for a Reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations. Barka F. 2009. – Available at : http://www.europarl.europa.eu/meetdocs/2009_2014/documents/regi/dv/barca_report_/barca_report_en.pdf.
3. Council of Europe. European heritage. Sustainable Development Strategies in South-East Europe / R. Pickard, ed. – Council of Europe Publishing, 2008. – 221 p.
4. EUROPE 2020: A European Strategy for Smart, Sustainable and Inclusive Growth. – Available at : <http://ec.europa.eu/eurostat/web/europe-2020-indicators>
5. European Environmental Bureau (EEB). EU Sustainable Development Strategy. From Theory to Delivery / J. Hontelez, M. Buntenkamp. – Brussels : European Environmental Bureau, 2006. – 66 p.
6. Indicators of Sustainable Development : Guidelines and Methodologies, 3rd Edition. – UNDESA : New York, 2007. – 93 p.
7. Von Weizsaecker, E. Come On! Capitalism, Short-termism, Population and the Destruction of the Planet / E. von Weizsaecker, A. Wijkman. – Springer, 2018. – 220 p.

11. Links to information sources on the Internet, video lectures, other methodological support

1. Declaration of the United Nations Conference on the Human Environment [Электронный ресурс]. – Available at : <http://www.unep.org/Documents.Multilingual>
2. Atlas of Sustainable Development Goals 2017. – Available at : <http://datatopics.worldbank.org/sdgatlas/>
3. European Sustainable Development Network. – Available at : <http://www.sd-network.eu/>

4. Guiding Principles for Sustainable Spatial Development of the European Continent. – CEMAT, 2000. – Available at : <http://www.rapp.gov.rs/en-GB/documents/cid30383164/guiding-principles-for-sustainable-spatial-development-of-the-european-continent>.
5. Maps and Sustainable Development Goals. – Available at : <http://icaci.org/maps-and-sustainable-development-goals/>
6. Report of the World Commission on Environment and Development: Our common future. – Available at : <http://www.un-documents.net/our-common-future.pdf>
7. The United Nations Commission on Sustainable Development / Sustainable Development Knowledge Platform. – Available at : <https://sustainabledevelopment.un.org/csd.html>