COURSE SYLLABUS
“Climate Change Adaptation in Territorial Communities”

Course component – *optional* (*3*)

Educational and Professional Programme	**Regional Development and Spatial Planning**
Specialty	C6 “Geography and Regional Studies”
Field of knowledge	C Social Sciences, Journalism, Information and International Relations
Level of higher education	second (master’s)
Language of instruction	English
Lecturer profile(s)	Dariia Kholiavchuk, Doctor of Geographical Sciences (DSc) https://terra.chnu.edu.ua/dariya-ivanivna-holyavchuk/
Contact phone	+380502648008
E-mail:	d.kholyavchuk@chnu.edu.ua
Moodle course page	
Consultations	In-person consultations: Thursday, 13:00–14:20 (by prior appointment); Online consultations: Thursday, 14:40–15:40

COURSE DESCRIPTION

The course aims to develop students’ systematic knowledge of the scientific, policy, legal and methodological foundations of climate change adaptation at the local level, together with practical skills in assessing climate risks and vulnerability of territorial communities (hromadas) and in integrating adaptation into regional development strategies and spatial planning documentation. The course covers observed and projected climate change in Ukraine and the Carpathian region and its local manifestations; the IPCC AR6 risk framework (hazard, exposure, vulnerability, adaptive capacity); multi-level adaptation governance in the EU and Ukraine in the context of decentralisation and European integration; methods of climate risk and vulnerability assessment of territorial communities based on GIS, open climate data and participatory approaches; mainstreaming adaptation into comprehensive spatial development plans of territorial communities and strategic environmental assessment; sectoral adaptation options, including nature-based solutions and disaster risk reduction; the development, financing, implementation and monitoring of local adaptation plans and Sustainable Energy and Climate Action Plans (SECAP) under the Covenant of Mayors.

COURSE CONTENT

MODULE 1. SCIENTIFIC AND POLICY FOUNDATIONS OF CLIMATE CHANGE ADAPTATION AT THE LOCAL LEVEL	
Topic 1	Climate change in Ukraine and the Carpathian region: observed trends, scenarios and local manifestations

Topic 2	Hazard, exposure, vulnerability and adaptive capacity of territorial communities
Topic 3	Multi-level governance of climate adaptation: EU and Ukrainian policy and legal frameworks in the context of decentralisation
Topic 4	Climate risk and vulnerability assessment of territorial communities: methods, indicators and data
MODULE 2. PLANNING, IMPLEMENTATION AND MONITORING OF ADAPTATION IN TERRITORIAL COMMUNITIES	
Topic 1	Mainstreaming adaptation into spatial planning and regional development strategies
Topic 2	Sectoral adaptation options: nature-based solutions, water management, urban heat, land use and disaster risk reduction
Topic 3	Local adaptation plans and SECAPs: stakeholder engagement, financing, monitoring and evaluation

TEACHING FORMS, METHODS AND EDUCATIONAL TECHNOLOGIES

The course employs a range of teaching methods and educational technologies:

- verbal methods (lecture, consultation, discussion);
- problem-based learning, namely the analysis of case studies on climate risks and adaptation responses of territorial communities in Ukraine and the EU, including the case of the Chernivtsi city territorial community;
- practical classes using GIS technologies, open climate data (Copernicus Climate Data Store, IPCC WGI Interactive Atlas) and participatory mapping tools;
- group work on the development and defence of a draft climate change adaptation plan for a selected territorial community, including stakeholder role-play;
- independent study of international and national policy and legal documents, planning documentation of territorial communities and scientific sources.

FORMS AND METHODS OF CONTROL AND ASSESSMENT

Form of final assessment: credit (defence of a group project, a draft climate change adaptation plan for a selected territorial community).

Ongoing assessment includes oral and written answers to questions on the lecture material, assessment of practical assignments (analytical reports, climate risk and vulnerability maps, vulnerability matrices, multi-criteria appraisal of adaptation options) and review of independent study tasks.

Test-based assessment uses a set of standardised tasks for each content module (closed and open-ended questions, interpretation of climate data, scenarios and planning documents).

Independent study is completed in the form of analytical briefs, summaries, comparative tables, essays and policy briefs for local self-government bodies, followed by discussion and assessment.

Assessment is based on a 100-point scale. Ongoing assessment (lectures, practical classes and independent study) accounts for up to 60 points, and the final assessment (project defence) for up to 40 points. For practical assignments and independent study tasks, a student may earn 8 to 10 points per topic, depending on the scope of the topic.

A student may earn up to 35 points for the first content module and up to 25 points for the second. The final assessment (defence of the adaptation plan project) is worth 40 points.

In accordance with the “Regulation on the Interaction of Formal and Non-formal Education and the Recognition of Learning Outcomes (Obtained through Non-formal and/or Informal Education) in the Formal Education System at Yuriy Fedkovych Chernivtsi National University” (Minutes No. 16 of 25 November 2024), learning elements may be recognised and additional points may be awarded for the results of non-formal education, in particular for completing free training courses (webinars, seminars) on Ukrainian or international professional platforms, provided that a free certificate is obtained. Such

results are credited only for the corresponding topics of the lectures, laboratory and practical assignments of this course, within the number of points allocated to that learning element.

CRITERIA FOR ASSESSING LEARNING OUTCOMES

Score in points	Grade on the national scale	Grade on the ECTS scale		Assessment criteria
		Grade	Explanation	
90-100	**Passed**	**A**	**Excellent** (outstanding performance with only minor errors)	The student has a thorough knowledge of the scientific basis of climate change and of IPCC concepts and scenarios, uses the terminology fluently, independently and convincingly assesses climate risks, vulnerability and adaptive capacity of territorial communities using GIS and open climate data, critically analyses EU and Ukrainian adaptation policy, and develops a well-substantiated, realistic local adaptation plan that is coherent with spatial planning documentation and includes a clear system of monitoring indicators. All practical assignments have been completed and the project has been defended at a high level.
80–89	**Passed**	**B**	**Very good** (above the average standard, but with some errors)	The student knows the theoretical material, has completed all practical assignments, mostly correctly assesses climate risks and vulnerability of territorial communities, and develops an adaptation plan with minor inaccuracies in the justification of measures, their integration into planning documents or the system of indicators. The project has been successfully defended.
70–79		**C**	**Good** (generally sound work with a number of notable errors)	The student knows the theory and completes practical assignments, but not always in full: notable errors occur in the risk and vulnerability assessment or in the selection and prioritisation of adaptation options. The student sometimes hesitates when answering questions but finds the correct solution after clarification. The project has been defended with remarks.
60–69	**Passed**	**D**	**Satisfactory** (fair, but with significant shortcomings)	The student knows the main theoretical provisions on climate change and adaptation policy, has completed most of the practical assignments and is familiar with the use of GIS and climate data for community-level assessment, but requires assistance in developing the adaptation plan. The student answers most of the lecturer’s questions.
50–59		**E**	**Sufficient** (performance meets the minimum criteria)	The student has a general understanding of the scientific basis and policy of climate change adaptation and has completed most of the practical assignments, but with substantial errors in the risk and vulnerability assessment and in the development of the adaptation plan. The student answers about half of the lecturer’s questions.

35–49	**Fail**	**FX**	**Fail** (with the possibility of re-assessment)	The requirements for a "passed" grade have not been met (practical assignments have been completed partially or with gross errors, the project has not been defended); the student completes additional tasks within the course programme for re-assessment.

ACADEMIC INTEGRITY POLICY

Compliance with the academic integrity policy by participants in the educational process within this course is regulated by the following ChNU documents:

"Code of Academic Integrity and Ethics of Yuriy Fedkovych Chernivtsi National University"

"Regulation on the Detection and Prevention of Academic Plagiarism at Yuriy Fedkovych Chernivtsi National University"

"Policy on the Use of Artificial Intelligence at Yuriy Fedkovych Chernivtsi National University"

Use of artificial intelligence (AI) tools by students when completing learning tasks:

is permitted provided that the principles of academic integrity are observed (the student is responsible for the content, reliability and results of the submitted work and, if AI is used, must disclose the fact and the manner of its use);

is not permitted as a substitute for the independent completion of tasks or for the purpose of violating academic integrity requirements;

additional restrictions or requirements on the use of AI *may be set* by the lecturer for specific types of learning activities in accordance with the specifics of the course.

Policy on deadlines and re-assessment	Work submitted after the set deadlines without valid reasons is not assessed. Module tests may be retaken with the lecturer's permission upon submission of documents confirming valid reasons.

Policy on academic plagiarism, falsification and fabrication	Cheating during module tests, independent work and the credit is prohibited (including the use of mobile devices). If such violations are detected, the work is not assessed. If AI is used to prepare written assignments, students must specify for which components of the work it was used. Students bear personal responsibility for violations of academic integrity, including plagiarism, cheating and prompting. On the first detected violation, the points awarded for the assignment are cancelled; repeated violations may result in the cancellation of all points earned in the course.
Attendance policy	Attendance is compulsory. For valid reasons (e.g., illness, academic mobility), classes may be attended individually in an online format.

INFORMATION RESOURCES

Core literature

1. IPCC. (2022). *Climate change 2022: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. https://doi.org/10.1017/9781009325844
2. IPCC. (2023). *Climate change 2023: Synthesis report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC.
3. European Commission. (2021). *Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change* (COM(2021) 82 final). European Commission.
4. Bertoldi, P. (Ed.). (2018). *Guidebook "How to develop a Sustainable Energy and Climate Action Plan (SECAP)"*. Publications Office of the European Union.
5. GIZ. (2014). *The Vulnerability Sourcebook: Concept and guidelines for standardised vulnerability assessments*. Deutsche Gesellschaft für Internationale Zusammenarbeit.
6. GIZ, & EURAC. (2017). *Risk Supplement to the Vulnerability Sourcebook: Guidance on how to apply the Vulnerability Sourcebook's approach with the new IPCC AR5 concept of climate risk*. Deutsche Gesellschaft für Internationale Zusammenarbeit.
7. Cabinet of Ministers of Ukraine. (2021). *Strategy of environmental safety and adaptation to climate change until 2030* (Order No. 1363-r of 20 October 2021).
8. Verkhovna Rada of Ukraine. (2024). *Law of Ukraine "On the basic principles of state climate policy"* (No. 3991-IX).

Supplementary literature

9. Adger, W. N., Arnell, N. W., & Tompkins, E. L. (2005). Successful adaptation to climate change across scales. *Global Environmental Change, 15*(2), 77–86.
10. Moser, S. C., & Ekstrom, J. A. (2010). A framework to diagnose barriers to climate change adaptation. *Proceedings of the National Academy of Sciences, 107*(51), 22026–22031.

11. Carter, J. G., Cavan, G., Connelly, A., Guy, S., Handley, J., & Kazmierczak, A. (2015). Climate change and the city: Building capacity for urban adaptation. *Progress in Planning, 95*, 1–66.
12. Kabisch, N., Frantzeskaki, N., Pauleit, S., Naumann, S., Davis, M., Artmann, M., Haase, D., Knapp, S., Korn, H., Stadler, J., Zaunberger, K., & Bonn, A. (2016). Nature-based solutions to climate change mitigation and adaptation in urban areas: Perspectives on indicators, knowledge gaps, barriers, and opportunities for action. *Ecology and Society, 21*(2), 39.
13. Reckien, D., Salvia, M., Heidrich, O., Church, J. M., Pietrapertosa, F., De Gregorio-Hurtado, S., et al. (2018). How are cities planning to respond to climate change? Assessment of local climate plans from 885 cities in the EU-28. *Journal of Cleaner Production, 191*, 207–219.
14. European Environment Agency. (2020). *Urban adaptation in Europe: How cities and towns respond to climate change* (EEA Report No. 12/2020). Publications Office of the European Union.
15. UNDRR. (2015). *Sendai Framework for Disaster Risk Reduction 2015–2030*. United Nations Office for Disaster Risk Reduction.
16. World Bank. (2021). *Climate risk country profile: Ukraine*. World Bank Group.
17. Carpathian Convention Secretariat. (2003). *Framework convention on the protection and sustainable development of the Carpathians (Carpathian Convention)*. http://www.carpathianconvention.org
18. Verkhovna Rada of Ukraine. (2020). *Law of Ukraine "On amendments to certain legislative acts of Ukraine concerning planning of land use"* (No. 711-IX).
19. Cabinet of Ministers of Ukraine. (2021). *Procedure for the development, updating, amendment and approval of urban planning documentation* (Resolution No. 926 of 1 September 2021).

Online resources

20. European Environment Agency, & European Commission. (n.d.). *Climate-ADAPT: European Climate Adaptation Platform*. Retrieved November 4, 2026, from https://climate-adapt.eea.europa.eu
21. Copernicus Climate Change Service. (n.d.). *Climate data store*. Retrieved November 4, 2026, from https://cds.climate.copernicus.eu
22. IPCC. (n.d.). *IPCC WGI Interactive Atlas*. Retrieved November 4, 2026, from https://interactive-atlas.ipcc.ch
23. Covenant of Mayors – Europe. (n.d.). *Covenant of Mayors for Climate & Energy*. Retrieved November 4, 2026, from https://eu-mayors.ec.europa.eu
24. World Bank. (n.d.). *Climate Change Knowledge Portal*. Retrieved November 4, 2026, from https://climateknowledgeportal.worldbank.org
25. UNDRR. (n.d.). *PreventionWeb: The knowledge platform for disaster risk reduction*. Retrieved November 4, 2026, from https://www.preventionweb.net
26. Decentralisation in Ukraine. (n.d.). *Decentralisation portal*. Retrieved November 4, 2026, from https://decentralization.ua

Reference to the course work programme

Work programme of the course "Climate Change Adaptation in Territorial Communities" (approved at the meeting of the Department of Physical Geography, Geomorphology and Paleogeography, Minutes No. 1 of 31 August 2026).