SUPPLEMENT 5

ALFRED NOBEL UNIVERSITY

STUDY PROGRAMME
CITY MANAGEMENT (Master's degree)

COURSE CATALOGUE

2024-2025 academic year

Dnipro 2025

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Mandatory Courses

STRATEGIES AND INNOVATIONS IN SMART CITY MANAGEMENT				
The course aims to equip students with both theoretical knowledge and practical skills in managing smart cities under modern conditions. Course objectives: to examine the political, economic and cultural aspects of modern city development.; to apply various methods for analysing smart city management; to explore managerial aspects of implementing foreign experience in Ukrainian realities.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	1	5 / Mandatory + 1 term paper	Ruslan Kliuchnyk, PhD in Political Science, Associate Professor	150 hours (26 h. lectures, 24 h. practical classes, 100 h. self-directed learning)
Learning outcomes On completion of the course, students will be able to:			**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, synthesise and apply advanced scientific, methodological and analytical tools to effectively manage organisations in dynamic and uncertain environments.			Problem-based learning, case study, interactive lectures, research paper	Participation in discussion, analytical reports (CAS), final exam (FAS)
2) Diagnose complex organisational challenges and systematically justify evidence-based methods for their resolution.			Case study analysis, reflective practice, critical analysis of problems	Individual case analysis, presentation (CAS), final exam (FAS)
3) Design, implement and evaluate efficient management systems tailored to organisational needs and contexts.			Lectures, seminars, discussions, role-playing	Participation in discussion, presentation (CAS), final exam (FAS)
4) Develop, justify and oversee projects while fostering entrepreneurial initiatives and innovation.			Project feasibility analysis, discussions, self work	Participation in discussion, essay, (CAS), final exam (FAS)
5) Formulate and execute strategic and tactical plans to optimise organisational performance.			Lectures, seminars, discussions, decision-making exercises	Strategic plan report, presentation (CAS)
6) Enhance decision-making competencies by formulating, justifying and ensuring the execution of managerial decisions in volatile environments while adhering to legal, ethical and social responsibility standards.			Lectures, ethical dilemma debates	Participation in debates, ethical self-assessment (CAS), final exam (FAS)
7) Strategically plan, coordinate and optimise			Lectures, seminars,	Participation in

information, methodological, material, financial and human resource support within an organisation or its subdivisions.	research-oriented learning	discussion, case analysis and explanation (CAS), final exam (FAS)
8) Conceptualise, develop and implement organisational and business strategies aligned with the smart city paradigm to strengthen city or territorial branding and optimise human capital management through integrated managerial, economic, social, legal and ethical approaches.	Lectures, seminars, discussions, self work	Participation in discussion, essay, presentation (CAS), final exam (FAS)

Assessment

The final grade is given on a 100-point scale, including 40 points for the exam and 60 points for the work in the semester.
60 points for work in the semester:
20 points for an individual assignment (presentation);
40 points for discussions.
Assessment criteria:
a) individual presentation
16-20 points: The student demonstrates excellent understanding of the material, mastery of the content and depth of search. The student uses modern scientific and information literature and databases. The work contains elements of novelty and reflects the author's own point of view. The work is designed in accordance with the requirements.
11-15 points: The student understands the material well and demonstrates a good mastery of the content and depth of search. Modern information sources were used to perform the work. There are minor violations of the requirements in the design of the task.
6-10 points: Comparatively logical structure in which relevant ideas/concepts are not always reasonably expressed. The task may lack coherence and/or accuracy in places.
1-5 points: The task is poorly structured, disorganised, inaccurate and/or confusingly expressed. There are major omissions.
b) participation in discussions
For participating in the discussion, the student receives the total number of points allocated for this type of assessment, as specified in the course's technological map:
81-100%: The discussion is conducted correctly. The student demonstrates excellent mastery of the educational material and expresses and successfully argues his/her position.
51-80%: The student demonstrates an understanding of the educational material but some inaccuracies are noticed.
21-50%: A sufficient grasp of the material, but some major omissions exist.
1-20 %: A lot of mistakes. Little or no appreciation of the context of the material.
c) examination papers
The criteria for the examination assignment are written on the examination card.

Content

Topic 1. A city in human history: a retrospective approach
Topic 2. Cities in the modern world in the context of UN sustainability goals
Topic 3. Public sector in a smart city
Topic 4. Collaborative ecosystem of a smart city
Topic 5. Technological aspects of a smart city
Topic 6. Climate and environmental challenges and smart cities
Topic 7. Image of a city and of a country
Topic 8. European smart city strategies
Topic 9. Ukrainian cities and smart innovations

Literature

Ukrainian track

Compulsory reading

1. Задоя А.О., Федулова С.О., Ключник Р.М. Архітектура європейської безпеки: нові виклики та загрози: навчальний посібник. Дніпро: Університет імені Альфреда Нобеля, 2024. 297 с.

Recommended reading

1. Красилюк В.Ф. Концепти «smart-місто» та «smart-громада»: зміст та особливості впровадження. Актуальні проблеми політики. 2024. Вип. 73 http://app.nuoua.od.ua/archive/73_2024/10.pdf

English track

Compulsory reading

1. Hovik S., Legard S., Bertelsen I.M. Area-based initiatives and urban democracy. Cities. 2024. Volume 144, January 2024, 104638.
2. Managing Smart City Governance. Playbook for local and regional governments. United Nations Human Settlements Programme (UN-Habitat). URL: https://unhabitat.org/managing-smart-city-governance-a-playbook-for-local-and-regional-governments
3. Grytsenko, A. Borzenko O., Burlay T. Achievements and challenges of Ukraine's European integration. Journal of European economy. 2021. Vol. 20, № 3. P. 518-541.
4. Mrasori, F. (2022). The Role of the Unilateral Harmonization to the EU Integration. Lex Portus, 8(2), 54–77. https://doi.org/10.26886/2524-101X.8.2.2022.3
5. Kozłowski W., Suwar K. Smart City: Definitions, Dimensions, and Initiatives. European Research Studies Journal. Volume XXIV, Special Issue 3, 2021. P. 509-52p.
6.Bauerová H. (2019). The V4 and European Integration. – URL: https://www.researchgate.net/publication/327725864_The_V4_and_European_Integration.
7. Giela M. The human element in the context of smart cities. Management Systems in Production Engineering. 2023, Volume 31, Issue 3, pp. 300-305. URL: https://intapi.sciendo.com/pdf/10.2478/mspe-2023-0033

Recommended reading

1. Młodkowski P. Estimating Production Function Before Covid-19 Pandemic in Europe / P. Młodkowski // European Integration Studies No. 14 / 2020, pp. 104-116.
2. People-Smart Sustainable Cities. UN. 2020. URL: https://unece.org/housing/publications/people-smart-sustainable-cities-E
3. The State of European Smart Cities: Exploring and showcasing models, solutions, and financing for European replication to achieve climate neutrality. URL: https://cris.vtt.fi/en/publications/the-state-of-european-smart-cities-exploring-and-showcasing-model
4. The Road toward Smart Cities: Migrating from Traditional City Management to the Smart City. URL: https://publications.iadb.org/en/road-toward-smart-cities-migrating-traditional-city-management-smart-city

Information resources on the Internet

1. International Monetary Fund. URL: https://www.imf.org/en/Home
2. World Economic Outlook Database. International Monetary Fund. URL: https://www.imf.org/en/Publications/WEO/weo-database/2021/April/select-country-group

ECONOMIC GOVERNANCE AND FINANCIAL MANAGEMENT				
The course aims to train highly qualified specialists in the field of finance, banking, insurance and stock market capable of developing and implementing financial policies of sustainable development at various levels of the economic system at a high professional level to shape long-term economic development and strengthen the resilience of the country's financial system to environmental, social and governance risks.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	1	5 / mandatory	Viktoriia Varenyk, PhD, Associate Professor; Zoia Pestovska, PhD, Associate Professor	150 hours (26 h. lectures, 24 h. practical classes, 100 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:			**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and apply advanced scientific, methodological, and analytical tools to ensure effective economic governance in unpredictable environments. 2) Diagnose organisational challenges and substantiate evidence-based financial management approaches for their resolution. 3) Strategically plan, coordinate, and implement information, methodological, material, financial and human resource support for economic self-governance in regional development. 4) Conceptualise, develop and execute organisational and business strategies aligned with the smart city framework to enhance urban branding and optimise human capital management through financial, managerial, economic, social, legal, and ethical instruments. 5) Facilitate and coordinate effective engagement among key stakeholder groups at the local level to drive Ukraine's post-war economic recovery, integrating global sustainable development goals while considering regional financial constraints and opportunities.			Lectures: presentations, thematic discussions, invited guests (experts in the field of smart cities). Peer teaching lecture, discussion of practical case studies, problem-solving method using the Internet Practical classes: seminar dialogue, discussion of situational tasks, analysis of real cases, Practical classes: individual and group projects, analysis of real cases, work with software. Peer teaching lecture, discussion of practical case studies, problem-solving method using the Internet	Participation in discussions, short reflection papers, quizzes (CAS), final exam (FAS) Peer evaluation, online research assignments, case study analysis (CAS), final exam (FAS) Class participation assessment, short case study reflections, peer feedback (CAS), final exam (FAS) Project progress reports, software-based assignments, teamwork evaluation (CAS), final exam (FAS) Peer review feedback, online quizzes, class engagement scoring (CAS), final exam (FAS)
Assessment				

The final grade is given on a 100-point scale:
60% completion of individual practical tasks
40% final semester control (exam)
Assessment criteria:
12 practical tasks of 5 points each — 60 points, exam — 40 points.
Module 1 (max - 30 points). The student receives points for Module 1 if he/she completes 6 practical tasks, each of which is assessed at 5 points.
Module 2 (max - 30 points). The student receives points for Module 2 if he/she completes 6 practical tasks, each of which is assessed at 5 points.
Assessment criteria:
5 points - the student has done the task correctly and demonstrates a deep understanding of the material. All detailed conclusions have been made.
4 points - the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions have been made.
3 points - the student demonstrates insufficient understanding of the material. The task is completed partially or in a general way. The student has made partial conclusions.
2 points - the student demonstrates ignorance of the material, the task contains significant errors, no conclusions.
1 point - the student demonstrates ignorance of the material. The task is not completed, and there are no conclusions.
0 points - the task is not completed by the student.

Content

Topic 1. Fundamentals of economic governance: concepts and importance.
Topic 2. Transformation of the economic system of Ukraine
Topic 3. FinTech market: regional aspect
Topic 4. Electronic banking: concept, classification and benefits.
Topic 5. Modern payment systems
Topic 6. Virtual currency. Bitcoin and blockchain technology
Topic 7. Digitalisation for small and medium-sized businesses
Topic 8. Modern financial management technologies
Topic 9. Methodology of financial management of enterprises and organisations.
Topic 10. Cash flow management at the enterprise
Topic 11. Enterprise profit management
Topic 12. Enterprise asset management
Topic 13. Financial forecasting and planning at the enterprise

Literature

Ukrainian track

Compulsory reading

1. Моніторинг процесу децентралізації в Україні. http://www.minregion.gov.ua/press/news/shho-u-rozvitku-gromad-i-teritoriyvidbulosya-za-2019-rik-dani-monitoringu-detsentralizatsiyi/
2. Червякова О.В. Євроінтеграційна модель побудови державного устрою України. Наукові записки Інституту законодавства ВРУ. № 5/2018. «МП Леся», 2018. С.156-162. https://www.osce.org/good-governance
3. Сментина Н. В., Фіалковська А. А. Стратегічне планування місцевого розвитку: навч. посіб. – К.: ФОП Гуляєва В.М., 2019. – 244 с. 4
4. Цілі сталого розвитку 2016–2030. http://www.un.org.ua/ua/tsili-rozvytku-tysiacholittia/tsili-staloho-rozvytku.
5. Про затвердження методики розроблення, проведення моніторингу та оцінки результативності реалізації регіональних стратегій розвитку та планів заходів з їх реалізації: наказ Мінрегіону від 31.03.2016 № 79.: https://zakon.rada.gov.ua/laws/show/z0632-16

Recommended reading

1. Кібік О.М. Основи економічної теорії. Економіка та врядування: навч. посібник / О.М. Кібік, В.О. Котлубай, Ю.В. Хаймінова, Є.В. Рединa. Одеса: Фенікс, 2019. 216 с.
2. Нестерова С. В. Фінансовий менеджмент: практикум. Київ: Кондор, 2019. 280 с.
3. Чинники і тренди економічного зростання в Україні: колективна монографія / за ред. д-ра екон. наук М.І. Скрипниченко; НАН України, ДУ «Ін-т екон. та прогнозув. НАН України». – К., 2018. 386 с.
4. Затверджено Концепцію відкритого банкінгу в Україні (2023): https://bank.gov.ua/ua/news/all/zatverdjeno-kontseptsiyu-vidkritogo-bankingu-v-ukrayini
5. Теслюк С. А. Цифрові фінанси: конспект лекцій (електронне видання). Луцьк: Волинський національний університет імені Лесі Українки, 2022. 98 с.
6. Цифрова економіка: тренди, ризики та соціальні детермінанти: https://razumkov.org.ua/uploads/article/2020_digitalization.pdf.
7. Лютий І.О., Карпич А.Ю. Цифрові токени у фінансуванні приватного бізнесу: монографія. – К.: Видавництво Ліра-К, 2019. – 188 с.
8. Литвинов В. Діджиталізація державних послуг на прикладі Польщі: https://nachasi.com/2018/01/31/digital-poland/.
9. Діджиталізація для малого та середнього бізнесу: https://buduysvoe.com/publications/didzhytalizaciya-dlya-malogo-ta-serednogo-biznesu
10. Україна 2030 Е – країна з розвинутою цифровою економікою статистики: https://strategy.uifuture.org/kraina-z-rozvinutoyu-cifrovoyu-ekonomikoyu.html#6-2-2
11. Стратегія розвитку фінтеху в Україні до 2025 року: https://bank.gov.ua/ua/about/develop-strategy/fintech2025
12. Концепт платформи інноваційних фінансових рішень НБУ (Регуляторна "пісочниця"): https://bank.gov.ua/ua/about/develop-strategy/fintech2025
13. Єрфорт, І.Ю.; Збаразська, Л.О. Політика Китаю щодо розвитку smart-промисловості: http://dspace.nbuv.gov.ua/handle/123456789/123065

English track

Compulsory reading

1. PEFA, Public Financial Management, and Good Governance Jens Kromann Kristensen, Martin Bowen, Cathal Long, Shakira Mustapha, and Urška Zrinski, Editors. 2019 International Bank for Reconstruction and Development / The World Bank. https://www.pefa.org/resources/pefa-public-financial-management-and-good-governance
2. Economic governance and public finance in kautilya's arthashastra. Bhat R.M.. International Journal of Social Science, IJSET 2023. https://www.researchgate.net/publication/371685194_economic_governance_and_public_finance_in_kautilya's_arthashastra
3. Economic Governance Policy Brief from Rules to Management. Clingendael Institute. 2020. https://www.clingendael.org/sites/default/files/2020-12/Policy_brief_Economic_Governance_December_2020.pdf

Recommended reading

1. Public Financial Management and Its Emerging Architecture. Cangiano M., Curristine T., Lazare M. 2013. International Monetary Fund. https://lawcat.berkeley.edu/record/177514
2. OECD Journal on Budgeting Volume 2018/3. https://www.oecd-ilibrary.org/governance/oecd-journal-on-budgeting/volume-18/issue-3_b08df8ad-en
3. Economic governance: guidelines for effective financial management. United Nations. New York, 2000. https://catalog.princeton.edu/catalog/SCSB-3901647

INTERNATIONAL PROJECT MANAGEMENT AND FUNDRAISING

The course aims to equip students with fundamental knowledge and practical skills in project management, including the use of a project-based approach, fundraising, grant writing and the basics of project planning and implementation. Additionally, the course helps students develop competencies in drafting project proposals, justifying problems, engaging with donors, managing resources, supervising monitoring, evaluation and risk management.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	2	3 / mandatory + 1 term paper	Valentyna Smachylo, Doctor of Sciences, Full Professor. Guest lecturer: Dr. Olena Mykolenko	90 hours (18 h. lectures, 14 h. practical classes, 58 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Develop and implement effective project management frameworks tailored to organisational needs.	Case study discussions, project simulation exercises, workshops on project methodologies	Class participation, reflection papers, mini-project presentations (CAS)
2) Evaluate, justify and oversee project execution, generate innovative business ideas and substantiate viable financing sources.	Lectures, feasibility study assignments, financial modelling exercises	Financial viability analysis assignments (CAS), final test (FAS)
3) Facilitate and manage efficient communication within project teams and across diverse professional groups.	Role-playing exercises, collaborative group projects	Teamwork assessment, class engagement scoring (CAS)
4) Use specialised software and information systems to optimise project management processes.	Hands-on software training, data-driven decision-making exercises	Software task completion, practical assignments, in-class quizzes (CAS), final test (FAS)
5) Demonstrate leadership competencies and collaborate effectively within project teams.	Leadership case studies, team-building activities	Self-assessment reflections, peer review of leadership effectiveness (CAS)
6) Foster continuous professional development and apply advanced time management strategies in team environments.	Time management workshops, productivity tracking exercises	Participation in discussion, time management self-assessments (CAS)
7) Effectively delegate authority and distribute management responsibilities within an organisation or project unit.	Lectures, managerial decision-making and delegation exercises, case study analysis	Participation in delegation exercises (CAS)

8) Strategically plan and implement information, methodological, material, financial, and human resource support for an organisation or unit, including through fundraising initiatives.	Lectures, budget planning simulations, resource allocation exercises	Budget development assignments, class discussions (CAS), final test (FAS)
9) Coordinate and enhance stakeholder engagement at local, national, and global levels to support Ukraine's post-war economic recovery, aligning initiatives with global sustainable development goals and securing grants or alternative funding sources.	Lectures, grant-writing workshops	Grant proposal submission, presentation (CAS)

Assessment

The final grade is given on a 100-point scale, including 60 points for the current test and 40 points for the final test.
60 points for the current test consist of:
10 points for an individual task (essay);
30 points for computer-based testing;
10 points for participation in discussions;
10 points for presentations.
40 points for the final test consist of:
15 points for case analysis;
15 points for problem solving;
10 points for computer-based testing.
Assessment criteria:
a) individual assignment (essay)
10 points: The student demonstrates an excellent understanding of the material, mastery of the content, depth of search. The student used modern scientific and information literature and databases. The task contains elements of novelty and reflects the author's own point of view. The task is designed in accordance with the requirements.
8 points: The student understands the material well and demonstrates good mastery of the content and depth of search. Modern information sources were used to perform the task. There are minor violations of the requirements in the design of the task.
6 points: The student understands the material on a satisfactory level and demonstrates enough mastery of the content and depth of search. The student used basic scientific and information literature and databases. There are some violations of the requirements in the design of the task.
4 points: The student does not demonstrate an understanding of the material, the content and depth of search. The student used basic scientific and information literature and databases, but it is not always relevant. There are significant violations of the requirements in the design of the task. The argumentations are not profound.
2-0 points: The materials are irrelevant to the issue and contain significant errors in content. The argumentation is either completely absent, completely unsystematic or illogical.
b) computer testing
0.5 points - for each correct answer.
c) participation in discussions
For participating in the discussion, the student receives the total number of points allocated for this type of assessment, as specified in the course's technological map:
100%: The discussion is conducted correctly. The student demonstrates excellent mastery of the educational material and expresses and successfully argues his/her position.
80%: The discussion is conducted correctly with minor violations. The student demonstrates a good mastery of the educational material and expresses and sufficiently argues his/her position.
60%: The student demonstrates good knowledge of the issue, provides good arguments,

demonstrates a sequence of actions, explains in detail, and, in most cases, correctly uses methods.
40%: The student provides limited arguments in the answer, does not use enough data in the work, and demonstrates an incomplete sequence of actions.
0%: The student does not understand the problem and the issue. Important information has been omitted. Provides information that is not relevant to the issues and demonstrates the ability to correctly perform calculations in a certain part but does not demonstrate the sequence of actions.
d) presentations
For a presentation during classes, the student receives the total number of points allocated for this type of assessment, as specified in the course's technological map:
100%: The presentation is totally completed, and the essential parts are covered. The student demonstrates an excellent understanding of the material, mastery of the content, depth of search. The justification of the project and the design of the presentation is excellent
80%: The presentation is completed in full; however, minor inaccuracies may be present in the project justification or presentation design, or, provided the presentation is properly designed, it is completed by at least 80%.
60%: The presentation is completed; however, the essential parts are not covered in full. The student demonstrates a sufficient understanding of the material, mastery of the content, depth of search. The justification for the project and design of the presentation was done with minor violations.
40%: The student completed the presentation approximately 50%; the material was not studied properly during the completion, which contributed to the incorrect presentation of the topic.
0%: The presentation is not completed.
e) examination papers
1. Situation and detailed answer to the question:
15 points: The work reflects the student's own point of view and has an element of novelty. The student demonstrates excellent use of relevant data and examples.
12 points: The student demonstrates good knowledge of the topic, provides good arguments to support the ideas, demonstrates a sequence of actions, explains in detail, and, in most cases, consciously uses methods.
10 points: The student provides sufficient, but not full arguments; does not use enough data in the work, demonstrates an incomplete sequence of actions.
8 points: The student does not understand the issue and the topic. Important information has been omitted. Provided information is not always relevant to the issue, demonstrates the ability to correctly perform calculations in a certain part, but does not demonstrate the sequence of actions.
0-7 points: The materials are not relevant to the issue and contain significant errors in the content.
2. Criteria for evaluating the solution of the problem:
15 points: The student demonstrates an excellent understanding of the material, uses the correct formulas and draws conclusions. There are no arithmetic errors. The answer is correct.
12 points: The student demonstrates enough understanding of the material, uses the correct formulas and draws conclusions with minor violations. There are no arithmetic errors. The answer is correct.
10 points: The task is fully completed, but minor inaccuracies in calculations or design may be present. Alternatively, if the task is properly formatted, it must be at least 80% complete.
8 points
The task is completed by at least 70%; it is properly designed. However, there are errors in formulas, weaknesses in drawing conclusions, and the conclusions lack depth.
6 points: The student completed the task approximately 50%; significant errors were made during the solution process, which did not allow for obtaining the correct answer.
0 points: The task is resolved completely incorrectly or not resolved at all.
3. Criteria for assessing the correctness of test answers:
0.5 points - for each correct answer.

Content

Topic 1. Introduction to the project approach to management
Topic 2. Fundraising and grant writing
Topic 3. Project justification
Topic 4. Project environment
Topic 5. Identifying the project's goals and objectives. Their interrelationship with the outcomes.
Topic 6. Project implementation plan. Work breakdown structure. Responsibility matrix.
Topic 7. Resource and cost planning. Project budget
Topic 8. Project monitoring and evaluation. Project risks

Literature

Ukrainian track

Compulsory reading

1. PMBOK7. URL: https://pmiukraine.org/pmbok7
2. Проєктна заявка без помилок або як отримати грант ЄС. https://euprostir.org.ua/practices/163504
3. За що оцінять вашу заявку — ключові поради як отримати грант ЄС. https://euprostir.org.ua/stories/133358
4. Грантрайтингові практики: спочатку про базис. http://bit.ly/2mfqkLt
5. Як громадським організаціям розібратися в плануванні та управлінні проектами. https://euprostir.org.ua/practices/146385
6. 5 технік для складання ефективних грантових пропозицій. https://bit.ly/2O1SEM3
7. Запартнеритися для спільного проєкту: дієві поради. https://bit.ly/3H9dVgh

Recommended reading

1. Грант-менеджмент: просто про складне. https://euprostir.org.ua/resources/201989

English track

Compulsory reading

1. How AI will transform Project Management (2023). Harvard Business Review. https://hbr.org/2023/02/how-ai-will-transform-project-management

Recommended reading

1. Project Management from the Middle (2008). US Bureau of Labor Statistics. https://www.pmi.org/learning/library/project-management-middle-five-stages-6969
2. Work environment (2023). US Bureau of Labor Statistics. https://www.bls.gov/ooh/business-and-financial/project-management-specialists.htm#tab-3

Information resources on the Internet

1. TESIM Interreg. https://goforcooperation.eu/index.php/en-home/
2. Еразмус+ - Програма Європейського Союзу у сфері освіти, професійної підготовки, молоді та спорту. https://erasmusplus.org.ua/
3. Порадник для громад із подачі на грантові програми ЄС. https://cedos.org.ua/researches/poradnyk-dlya-gromad-iz-podachi-na-grantovi-programy-yes/
4. Calculate unit costs for eligible travel costs. http://surl.li/nealze

HUMAN RESOURCE MANAGEMENT IN URBANISM

The course aims to equip students with a comprehensive system of theoretical and applied knowledge in effective human resource management within the context of urbanization. Special emphasis is placed on achieving the Sustainable Development Goals (SDGs) while considering psychological factors to foster the sustainable development of urban spaces. This includes prioritising worker well-being and assessing the broader impact on communities.

Language of teaching	**Semester**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	I	4 / Mandatory	Hanna Mytrofanova, Doctor of Economics, Full Professor	120 hours. (26 h. lectures, 14 h. practical classes, 80 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Demonstrate a comprehensive understanding of the role of Human Resource Management (HRM) in the context of urban development and sustainable growth.	Lectures Work in small groups	Oral answers to questions Presentation in small groups (CAS)
2) Critically evaluate and apply key HRM concepts, utilising fundamental methodological approaches to design effective personnel management systems.	Lectures Case study	Oral answers to questions Testing Presentation of the case study (CAS)
3) Develop and implement strategies to enhance communication effectiveness within organisations.	Lectures Problem situations	Problem solving (CAS)
4) Apply advanced talent management methodologies to attract, develop and retain high-performing employees.	Lectures Case study Problem situations	Presentation of the case study Problem solving (CAS)
5) Integrate psychological and contemporary HRM tools to optimise workforce management and organisational efficiency.	Problem lectures Case study Business game	Testing Presentation of the case study Participation in a business game (CAS)
6) Design and facilitate high-performing team dynamics in both commercial and public sector projects, effectively managing change and resolving conflicts while fostering constructive communication.	Lectures Work in small groups Business game	Presentation of the results of work in small groups Participation in a business game (CAS)
7) Employ modern leadership styles strategically and formulate evidence-based approaches to enhance	Business game Case study Performing exercises	Participation in the business game Presentation of the case

employee motivation and engagement.		study Evaluation of exercise results (CAS)
All learning outcomes	Final exam: mini case, tests, essay (FAS)	

Assessment

The final grade in the course is set on a 100-point scale.
60 points are given according to the content modules and forms of diagnostics:

Modules, topics and forms of diagnostics	Maximum number of points
Practical class 1	8
Practical class 2	8
Practical class 3	8
Practical class 4	8
Practical class 5	8
Practical class 6	8
Practical class 7	12
Total for practical classes	60

The exam results are evaluated in the range from 0 to 40 points (inclusive). The exam is carried out in the form of a written work containing tasks for tests and analysis of mini case, essay.
Grading scale

ECTS grade	ANU grading scale	National (four-point) scale
A	90-100	5 (excellent)
B	82-89	4 (very good)
C	75-81	4 (good)
D	67-74	3 (satisfactory)
E	60-66	3 (sufficient)
FX	35-59	2 (unsatisfactory) – additional work is required before re-examination or earning course credit
F	1-34	2 (unsatisfactory) – mandatory re-study of the course

Criteria for evaluating participation in group work and case work:
90-100% is credited if:
The student actively contributes to the group task, takes initiative, and is able to formulate a well-grounded opinion on the issue.
The work reflects the student's own point of view and includes an element of novelty.
The student demonstrates excellent use of relevant data and examples.
The student presents a clear sequence of actions when explaining situations, providing detailed explanations and consciously applying analytical methods.
75-89% is credited if:
The student actively participates in the group task and demonstrates a good understanding of the issue. The student argues their response well and uses relevant data and examples. The student shows a logical sequence of actions when explaining situations, providing detailed explanations and, in most cases, consciously applying analytical methods.
60-74% is credited if:
The student is not very active in the group task. The student provides limited arguments in his/her response and does not use enough relevant data.
The student demonstrates an incomplete sequence of actions in explaining situations.
1-59% is credited if:
The student does not understand the problem and the question. Important information is missing. The student provides irrelevant information. The student does not demonstrate an understanding

of the sequence of actions when explaining situations. Some materials in the work do not address the issue.

Criteria for assessing the knowledge of students for oral answers and written answers

Score	Evaluation criteria
90-100%	Fully masters the educational material. The student independently and confidently presents the material during oral presentations and written responses, deeply and comprehensively addressing theoretical issues and practical tasks, using both required and additional literature.
75-89%	Generally masters the educational material. The student presents the material reasonably well during oral presentations and written responses, adequately addressing theoretical issues and practical tasks using the required literature. However, some topics lack depth and argumentation, and minor inaccuracies or errors may be present.
60-74%	Not fully masters the educational material. The student presents the material in a fragmented and superficial manner, lacking sufficient argumentation and justification in oral presentations and written responses. The content of theoretical issues and practical tasks is not fully disclosed, and significant inaccuracies are evident.
1-59%	Partially masters the educational material. The student is unable to present most of the content during oral presentations and written responses, making significant mistakes.

Contents

Topic 1. Introduction to Human Resource Management (HRM) in Urban Studies
Topic 2. Building a HRM system
Topic 3. Psychological aspects of HRM in urbanism
Topic 4. Effective communications in HRM
Topic 5. Conflict Management in Urbanism
Topic 6. Leadership and Motivation at HRM
Topic 7. Talent Management in Urbanism
Topic 8. Social Responsibility and Ethics in Urban Projects

Literature

Ukrainian track

Compulsory reading

1. Олуйко В.М., Тюріна Н.М., Гаман Т.В., Примуш Р.Б., Карвацка Н.С., Назарчук Т.В. (2018). Управління персоналом в умовах децентралізації, Київ. 504 с.
2. Управління персоналом в органах публічної влади: навч. посіб. / С. М. Серьогін, Є. І. Бородін, К. В. Комарова, Н. А. Липовська, Т. М. Тарасенко. – Дніпро: ДРІДУ НАДУ, 2019. – 200 с

Recommended reading

1. Інноваційні засади управління людськими ресурсами: можливості, виклики, пріоритети досягнення соціально-економічної безпеки: колективна монографія / за наук. редакцією д.е.н., професора Міщук Г. Ю. – Рівне: НУВГП, 2020. – 408 с.
2. Модернізація публічного управління в умовах глобальних змін світового простору: колективна монографія / Львів-Торунь: Ліга-Прес, 2021. – 258 с.
3. Управління конфліктами для потреб публічної служби: посібник і методичні рекомендації / Калениченко Т., Кисельова Т., Копіна А., Корабльова О., Проценко Д., за заг. ред. Д. Проценко. — Київ: Ваіте, 2021. — 224 с.

English track

Compulsory reading

Armstrong M., Tylor S., (2014). Armstrong's Handbook of Human Resource Management Practice, Kogan Page Ltd.

Noe R. A., Hollenbeck J. R., Gerhart B., Wright P. M. (2016) Fundamentals of Human Resource Management, McGraw-Hill Education, New York.
Pynes J. E. (2009). Human Resources Management for Public and Non-profit Organizations. A Strategic Approach. San Francisco.
Rainey, H. G. (2003). Understanding and managing public organizations. San Francisco: Jossey – Bass.

Recommended reading

Armstrong M. (2007). Handbook of Employee Reward Management and Practice 2nd ed. — Kogan Page Ltd. – 548 p.
Boyatzis, R.E. (1982). The competent manager: a model for effective performance. London: Wiley.
Delery, J.E. and Doty, D.H. (1996) Modes of Theorizing in Strategic Human Resource Management: Test of Universalistic, Contingency, and Configurational Performance Predictions. Academy of Management Journal, 39, C. 802-835
Gagne M. (Ed.) (2014). The Oxford Handbook of Work Engagement, Motivation, and Self-Determination Theory / Oxford University Press, UK. — 465 p. — (Oxford Library of Psychology).
Gordon, Judith R. (2001). Organizational Behavior: A Diagnostic Approach. 7th ed. Upper Saddle River, NJ: Prentice Hall.
Griffin R.W. (2013). Organizational Behavior: Managing People and Organizations 11th ed. — Cengage Learning. — 624 p.
Guest, D.E. (1999) 'HRM: The Workers' Verdict', Human Resource Management Journal, 9(3). C. 5-25
Kim D.H. (1993). The Link Between Individual and Organizational Learning. Sloan Management Review, Vol 35, No. 1. c. 38.
Lepak, D. P., and Snell, S.A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. Journal of Management, 28(4), 517-543.
Nonaka I. (1991). The Knowledge-creating Company, Harvard Business Review 69(6). The best of HBR 2007. c. 165)
Perry, J.L., Mesch, D., Paarlberg, L. (2006). Motivating employees in a new governance era: The performance paradigm revisited. Public Administration Review, 66 (4), C. 505 – 514.
Pfeffer, J. (1998) The Human Equation, Boston: Harvard Business School Press
Pink Daniel H., (2018). Drive, The Surprising Truth About What Motivates Us, Canongate Books Ltd.
Rogers S. (2010). Communicating Total Rewards. How-To Series for the HR Professional / S. Rogers, S. Marcotte. — WorldatWork Press.

MANAGEMENT CONSULTING				
The primary objective of the course is to prepare students to become effective consultants capable of solving complex business challenges and guiding organisations toward improved performance and sustainable success. The course aims to bridge theoretical knowledge and practical skills, fostering competencies essential for consulting engagements across industries delivering tailored, impactful solutions using best practices and innovative approaches.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	1	4 / mandatory	Volodymyr Momot, Doctor of Science, Full Professor	120 hours (26 h. lectures, 14 h. practical classes, 80 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess organisational challenges and formulate evidence-based solutions through strategic consulting.	Lecture, discussion, small group work	Participation in the discussion, oral answers to questions, presentation in small groups (CAS), final exam (FAS)
2) Design and implement effective management systems, strategies and tactical approaches in IT and HR.	Lecture, case study	Testing, case study presentation (CAS), final exam (FAS)
3) Facilitate and lead impactful communication and consultation processes within teams, across diverse professional groups and in international settings.	Lecture, practical task	Oral answers to questions, evaluation of student reports, test (CAS), final exam (FAS)
4) Engage professionally in management consulting by demonstrating proficiency in both state and foreign languages within academic and business environments.	Lecture, case study	Oral answers to questions, case study presentation (CAS), final exam (FAS)
5) Develop and apply self-management strategies, ensuring continuous professional growth and effective time management in IT and HR domains.	Lecture, practical task	Oral answers to questions, evaluation of student reports, test (CAS), final exam (FAS)
6) Formulate and execute organisational and business strategies within management consulting frameworks, aligning with smart city initiatives to enhance city or territorial branding and optimise human capital management through managerial,	Lecture, case study	Oral answers to questions, case study presentation (CAS), final exam (FAS)

economic, social, legal and ethical instruments.		
7) Make data-driven decisions by adapting strategies and tactics to effectively manage change, particularly in uncertain or post-conflict contexts, while integrating sustainability principles.	Problem lecture, case study, problem situations	Case study presentation, solving problem situations (CAS), final exam (FAS)
8) Coordinate and sustain productive stakeholder engagement at local, national and global levels, contributing to Ukraine's post-conflict economic recovery while aligning with global sustainable development goals, drawing on management consulting insights.	Problem lecture, case study, exercises, research project	Case study presentation, evaluation of exercise results, presentation of research project results (CAS), final exam (FAS)

Assessment

The final grade for the course is given on a 100-point scale.
60 points for content modules and diagnostic forms:

Modules, topics and diagnostic forms	Maximum number of points
Content module 1	30
Topic 1, survey, discussion	1
Topic 2 survey, report, computer testing	2
Topic 3, survey, solving situations	1
Topic 4, survey, participation in a business game	2
Topic 5, survey, discussion, written answer to a question	1
Final module assignment	20
Content module 2	30
Topic 6, survey, explanation of connections, dependencies, progress of explaining situational tasks written answer to a question, solving problems	1
Topic 7, survey, explanation of connections, dependencies, progress of explaining situational tasks, Computer testing	2
Topic 8, survey, explanation of connections, dependencies, progress of explaining situational tasks, Presentation of the results of independent work	1
Topic 9, survey, participation in a business game, computer testing	2
Topic 10, survey, report, written answer to a question	1
Final module assignment	20
Total for practical classes	100

Content

Content module 1. Managerial Consulting Process
Topic 1. Introduction to Management Consulting
Topic 2. The Consulting Process
Topic 3. Analytical Frameworks and Tools
Topic 4. Data Collection and Analysis
Content module 2. Interrelations in Consulting
Topic 5. Client Management and Communication
Topic 5. Change Management in Consulting
Topic 7. Ethics in Consulting
Topic 8. The Business of Consulting
Content module 3. Fields of consulting

Topic 9. Strategy Consulting
Topic 10. Operations Consulting
Topic 11. IT Consulting
Topic 12. Human Resource Consulting
Topic 13. Future Trends in Consulting

Literature

Ukrainian track

Compulsory reading

1. Управлінський консалтинг: курс лекцій для здобувачів другого (магістерського) рівня вищої освіти, спеціальності 073 Менеджмент денної та заочної форми навчання. – Упоряд.: О.В. Смігунова, К.С. Богомолова, Є.Л. Гринь. – Харків: ДБТУ, 2022 – 88 с.

Recommended reading

1. Управлінське та безпекове консультування: навчальний посібник у схемах і таблицях; укладачі: Копитко М. І., Живко З. Б., Франчук В. І., Бліхар В. С., Мельник С. І., за заг. ред. Копитко М. І. Львів: Львівський державний університет внутрішніх справ, 2022. 256 с.

English track

Compulsory reading

Block, P., & Nowlan, J. (2023). Flawless Consulting: A guide to getting your expertise used. Wiley.

Recommended reading

Deimler, M. S., Stern, C. W., & Hughes, M. (2020). The Boston Consulting Group on strategy: Classic Concepts and new perspectives. Ascent Audio.

Rasiel, E. M., & Murray, M. B. (2022). The McKinsey way. McGraw Hill-Ascent Audio.

Weiss, A. (2023). The Consulting Bible: How to launch and grow a seven-figure consulting business. John Wiley & Sons.

Rasiel, E. M., Cashman, M., & Friga, P. N. (2016). The McKinsey mind: Understanding and implementing the problem-solving tools and management techniques of the world's top strategic consulting firm. Brilliance Audio.

Weiss, A. (2023a). Million dollar consulting the professional's guide to growing a practice. McGraw Hill-Ascent Audio.

PLANNING AND FORECASTING SMART CITY DEVELOPMENT				
The course aims to teach students the basics of planning and forecasting the development of smart cities based on modern approaches and technologies aimed at sustainable development. Students will gain knowledge about strategic planning tools, modeling development scenarios, as well as methods of applying innovative technologies for effective management of urban systems. The course programme aims to provide students with practical tools and knowledge for planning and developing cities within the Smart City concept, with a special emphasis on digital innovations and sustainable management.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukranian	1	4 / mandatory	Vitalii Zaitsev, Doctor of Science, Full Professor	120 hours (26 h. lectures, 14 h. practical classes, 80 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and integrate advanced scientific, methodological and analytical tools for planning and forecasting smart city development in uncertain environments.	Lectures: presentations, thematic discussions, invited guests, case study (experts in the field of smart cities).	Participation in the discussion of situational tasks, tests, case analysis (CAS)
2) Develop and predict the effectiveness of management systems within organisations operating in smart cities.	Lecture of the type "peer teaching", discussion of practical case studies, problem-finding method using the Internet	Oral answers to questions, solution/explanation of practical case studies, presentation (CAS)
3) Justify and oversee projects, fostering entrepreneurial initiatives that contribute to smart city advancement.	Practical classes: seminar dialogue, discussion of situational tasks, analysis of real cases and projects,	Participation in the discussion of situational tasks, tests, case analysis (CAS)
4) Strategically and tactically plan and forecast organisational activities to ensure sustainable urban development.	Practical classes: implementation of individual and group projects, analysis of real cases, work with software.	Participation in the discussion of situational tasks, case analysis, group projects presentation and assessment (CAS)
5) Use specialised software and information systems to optimise organisational management, planning and forecasting processes.	Lecture of the type "peer teaching", discussion of practical case studies, problem-finding method using the Internet	Oral answers to questions, solution/explanation of practical case-studies, presentation (CAS)
6) Demonstrate the ability to delegate authority effectively in the planning and governance of organisations or divisions within smart	Lecture of the type "peer teaching", discussion of	Participation in the discussion of situational tasks, tests, case analysis

cities. 7) Design and implement comprehensive information, methodological, material, financial and human resource support systems tailored to smart city contexts. 8) Make data-driven decisions in change management, particularly in conditions of uncertainty or post-war recovery, by identifying key influencing factors and aligning strategies with sustainable development objectives for smart city transformation.	practical case-studies, problem-finding method using the Internet Practical classes: seminar-dialogue, discussion of situational tasks, analysis of real cases Practical classes: implementation of individual and group projects, analysis of real cases, work with software.	(CAS) Participation in the discussion of situational tasks, tests, case analysis (CAS) Participation in the discussion of situational tasks, case analysis (CAS)
Assessment		
Final grade is a result of 100% continuous assessment: 80% completion of individual practical tasks 20% final semester control (test) Assessment criteria: 8 Practical Tasks – 10 points each (80 points), 20 test questions – 1 point each (20 points) Module 1 (max - 30 points). Points earned upon completion of 3 practical tasks, each worth 10 points. Module 2 (max - 50 points). Points earned upon completion of 5 practical tasks, each worth 10 points. Work assessment criteria: 9-10 points - the student has completed the work correctly and demonstrates a deep understanding of the material. All detailed conclusions have been made. 7-8 points - the student has completed the work with minor inaccuracies that do not affect the final result. Generalised conclusions are provided. 5-6 points - the student demonstrates an insufficient understanding of the material. The task is completed partially or in general terms. Partial conclusions are provided. 3-4 points - the student demonstrates a lack of understanding of the material, with significant errors present. Conclusions are missing. 1-2 points - the student demonstrates a lack of understanding of the material. The task is incomplete, and conclusions are missing. 0 points - the task is not completed.		
Content		
Topic 1. Introduction to the smart city concept. Topic 2. Modern challenges of urban planning and urbanism. Topic 3. Tools for strategic planning of smart cities. Topic 4. Forecasting. Topic 5. Smart cities infrastructure: communications, energy, transport. Topic 6. Urban analytics and data. Topic 7. Urban systems modelling. Topic 8. Risk management and anti-crisis planning. Topic 9. Public governance and participation in urban planning. Topic 10. Financial aspects of smart city planning. Topic 11. Strategic planning of smart city development. Topic 12. Monitoring and evaluation in strategic planning. Topic 13. Digital platforms for smart cities management. Topic 14. Future smart cities: trends and innovations.		
Literature		

Ukrainian track

Compulsory reading

1. Берданова О.В., Вакуленко В.М., Валентюк І.В., Ткачук А.Ф. Стратегічне планування розвитку об'єднаної територіальної громади. Київ: Рада Європи, 2017. 121 с.
2. Місцевий розвиток: кращі практики та інструменти розумного зростання: кол. моногр. / за заг. ред. В. Б. Родченка. Харків: друкарня Мадрид, 2017. 212 с.
3. Про затвердження методики розроблення, проведення моніторингу та оцінки результативності реалізації регіональних стратегій розвитку та планів заходів з їх реалізації: наказ Мінрегіону від 31.03.2016 № 79. https://zakon.rada.gov.ua/laws/show/z0632-16
4. Сментина Н. В., Фіалковська А. А. Стратегічне планування місцевого розвитку: навч. посіб. – К.: ФОП Гуляєва В.М., 2019. – 244 с.
5. Про схвалення Концепції розвитку цифрової економіки та суспільства України на 2018–2020 роки та затвердження плану заходів щодо її реалізації: Розпорядження Кабінету Міністрів України від 17.01.2018 № 67-р. Офіційний вісник України. 2018. № 16.
6. Цілі сталого розвитку 2016–2030. http://www.un.org.ua/ua/tsili-rozvytku-tysiacholittia/tsili-staloho-rozvytku.
7. Про місцеве самоврядування в Україні: Закон України від 21.05.1997 № 280/97-ВР. Відомості Верховної Ради України. 1997. № 24. Ст. 170.
8. Про затвердження Порядку розроблення регіональних стратегій розвитку і планів заходів з їх реалізації, а також проведення моніторингу та оцінки результативності реалізації зазначених регіональних стратегій і планів заходів: постанова Кабінету Міністрів України від 11.11.2015 № 932. Офіційний вісник України. 2015. № 92.

Recommended reading

1. Розумні міста: чи можливі вони в сучасній Україні. http://www.kuluar.com.ua/2016/01/28/rozumni-mista-chymozhlyvi-vony-v-suchasnij-ukrajini/
2. Корепанов О. С. Інноваційні методології використання "відкритих даних" для потреб "розумного" сталого міста // Управління економічними процесами на макро- і мікрорівні: проблеми та перспективи вирішення: мат. III Міжнар. наук.-практ. інтернет-конф. молодих учених. Львів: Вид-во Львівської політехніки, 2018. С. 56–58.
3. Технічне регулювання у сфері стандартизації "розумних громад" та "розумних міст": європейський досвід. Аналітична записка. http://old2.niss.gov.ua/articles/2338/
4. Концепція "КИЇВ СМАРТ СІТІ 2020". https://www.kyivsmartcity.com/concept/

English track

Compulsory reading

1. Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia. A.M. Townsend.
2. The New Urban Crisis: How Our Cities Are Increasing Inequality, Deepening Segregation, and Failing the Middle Class. R. Florida.
2. Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World. B. Schneier.

Recommended reading

1. Batty, M. (2018). Inventing Future Cities. The MIT Press.
2. Bologna Smart City. Università di Bologna. http://www.unibo.it/it/ricerca/progetti-e-iniziative/copy_of_bologna-smart-city.
3. Smart City Platform (EcoCityS). http://www.sice.com/en/business-areas/smart-cities/smart-city-platformecocitys.
4. Smart cities: Digital solutions for a more livable future / Woetzel J. et al. McKinsey Global Institute. 2018. 18 p. https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/smart-citiesdigital-solutions-for-a-more-livable-future
5. Ismail N. What are the most advanced smart cities in the world? 2018. https://www.informationage.com/advanced-smart-cities-world-123470745/

FOREIGN LANGUAGE COMMUNICATION IN PROJECT MANAGEMENT AND SMART CITY DEVELOPMENT				
The course aims to: - promote the language training of managers/executives (CEOs) for the post-war reconstruction and development of Ukrainian cities and territories based on the Smart City concept; - master a foreign language at a professional level and develop the necessary communication competencies in professional communication, both orally and in writing; - improve the English language competence of second (Master's) level students majoring in City Management; - develop the skills of confident and correct use of a wide range of communicative situations in professional life, with an emphasis on pragmatic, professional and intercultural communication.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	1, 2	6 / Mandatory	Neliia Blynova, PhD in Philology, Associate Professor	Semester 1: 26 h. practical classes, 64 h. self-directed learning. Semester 2: 26 h. practical classes, 64 h. self-directed learning.
Learning outcomes On the completion of the course, students will be able to:		**Teaching methods, teaching and learning activities**		**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and mitigate the limitations of scientific, methodological and analytical tools for project management in unpredictable environments. 2) Effectively coordinate and facilitate communication within international project management teams, engaging with representatives from diverse professional backgrounds and cultural contexts. 3) Demonstrate proficiency in professional and academic communication in both the state and foreign languages, particularly in the context of smart city development and project management.		Completion of assignments for independent work. Reading various types of periodical publications. Listening to audio and video materials related to the field of study. Internet research. Analytical reading/ oral analytical assessment/ critical appraisal. Summarising/ abstracting publications and video materials related to the specialisation. Writing and testing. Writing abstracts, reviews, overviews/ surveys, or essays on professional topics. Testing of oral and written communication skills. Preparing short reports/ presentations followed by discussion and identification of viewpoints of participants. Preparing and presenting an individual presentation.		Assessment of practical skills and assignments. Oral responses. Verification of the correctness of completed tests and individual assignments (CAS) Assessment of oral responses, case studies, and presentations. Oral answers to questions. Solving practical case studies, a short presentation of the abstracts, reviews and receiving feedback, presentation assessment (CAS) Assessment of communication skills, presentations, and written work. Assessment of speaking skills. Presentation assessment and peer

4) Exhibit leadership capabilities, collaborate within project teams, engage with stakeholders, and influence decision-making processes to drive organisational development. 5) Establish and manage effective stakeholder engagement at the team, local, national and global levels, contributing to the post-war economic recovery of Ukraine while aligning with global sustainable development goals and smart city initiatives.	Practical classes activities. Completion of individual and group projects. Analysis of real-life case studies. Working with software. Brainstorming. Working in pairs. Web searching. Practical classes: implementation of group projects, analysis of real cases, discussions on problematic issues.	assessment of presentations (CAS). Review of written assignments. Oral interview. Assessment of group work and communication skills (CAS). Oral answers to questions, practical explanations, evaluation of answers, progress reports, peer assessment (CAS).

Assessment

Final grade (final assessment) as a result of 100% continuous assessment:
20% participation in a discussion/problem situation, creation of a presentation (5%*4)

Participation in the discussion	Assessment criteria
5	Takes an active part in the discussion, freely, independently and reasonably presents the material during the discussion, while using a wide range of lexical material and grammatical constructions on this topic, taking into account all recommendations for conducting discussions.
4	Takes quite an active part in the discussion, presents arguments during the discussion, while using a sufficient range of lexical material and grammatical constructions on this topic, taking into account the main recommendations for conducting discussions. But when presenting some arguments, there is a lack of sufficient depth and speech preparation, some insignificant inaccuracies and minor mistakes are allowed.
3	Participates in the discussion fragmentarily, superficially (without argumentation and justification), making significant inaccuracies, demonstrating a narrow vocabulary on the topic and making gross grammatical errors.
2	Has a partial command of the educational material, participates in the discussion at the expense of individual phrases (replies) that correspond to the topic, demonstrates a small vocabulary on the topic and makes many grammatical errors that interfere with full understanding.

20% participation in a business game/ case study (5%*4)

Participation in a business game/ case study	Assessment criteria
5	Actively participates in a business game/case study, freely, independently and reasonably presents material related to his role, actively offers ideas, while using a wide range of lexical material and grammatical constructions on this topic, fully performs his/her tasks in a team.
4	Takes quite an active part in the business game/case study, presents arguments in accordance with his/her role, while using a sufficient range of lexical material and grammatical constructions on this topic. But when solving the problem, there is not enough speech preparation, some

	insignificant inaccuracies and minor mistakes are allowed, but he/she fully performs his/her tasks in a team.
3	Participates fragmentarily, superficially (without making own opinion) in a business game/case study, making significant inaccuracies, demonstrating a narrow vocabulary on the topic and making gross grammatical errors, not offering ideas, but only reproducing information from his/her role, partially fulfills his/her task in the team.
2	Partially uses the educational material, participates in a business game/case study using individual phrases (replies) that correspond to the role, demonstrates a small vocabulary of the topic and makes many grammatical errors that prevent full understanding. Does not participate in team tasks.

20% Abstract and summary of a scientific article (10%*2)

Abstract and summary of a scientific article	Assessment criteria
5	The text is compiled according to established standards. The text is clearly structured using language clichés/links. The written expression is constructed logically and consistently with arguments. All conditions of the task have been worked out in full. A few grammatical and lexical-stylistic errors are allowed, a wide range of vocabulary and grammatical constructions on the topic is demonstrated.
4	The text is composed mainly according to the established norms with the use of language clichés/connections. The text is quite clearly structured. Not all conditions of the task have been worked out in full, some are only mentioned. A small number of grammatical and lexical-stylistic errors are allowed, an insufficiently wide range of vocabulary and grammatical constructions on the topic is demonstrated.
3	The text is written with deviations from the established norms, there are inaccuracies in the use of language clichés/insufficient use of conjunctions. Not all conditions of the task have been worked out. There is a significant number of grammatical and lexical-stylistic errors, a very narrow range of vocabulary on the topic.

30% Test (vocabulary, grammar, reading, listening and creative writing tasks) (15%*2). The test tasks are assessed according to the number of correct answers, and the creative writing task is assessed according to the criteria of the abstract and summary of the scientific article. Test scores are awarded according to the percentage of correct answers, as shown in the table below.

90-100 %	15
82-89 %	13
75-81 %	11
67-74 %	9
60-66 %	7
35-59 %	5
1-34 %	0

10% presentation based on the results of the research project (oral with the use of multimedia) (5%*2)

Presentation	Assessment criteria
5	Demonstrated fluency in oral language, full compliance with the structure of the presentation and use of speech potential, substantiated the relevance of the topic, fully disclosed the topic, systematised and classified results, conclusions are convincing. There are practically no errors in the student's speech or there are minor errors that do not interfere with conveying information to listeners in full.

4	Demonstrated good speaking skills, adherence to the structure of the presentation, sufficient use of the speech potential of the presentation and justified the relevance of the topic; the topic was fully disclosed, and the results obtained were systematized and classified, but the conclusions are not completely convincing. There are errors in the student's speech that do not interfere with conveying information to listeners in full.
3	Satisfactory level of speaking is demonstrated, incomplete adherence to the structure of the presentation, insufficient use of the speech potential of the presentation and the relevance of the topic was not sufficiently substantiated, the topic was partially disclosed, the obtained results were not fully systematized and classified, the conclusions are not completely convincing. There are errors in the student's speech that partially prevent the information from being delivered to the listeners in full.
2	The structure of the presentation is not followed. The topic is not disclosed. Demonstrated less than average command of oral communication skills. There are many mistakes in the student's speech, which prevent the information from being delivered to the listeners in full.

Contents

Topic 1. Urban Planning and Development. The complexities of urban development, offering insights into planning, housing, and social dynamics within cities. Public Administration as core concepts of organizational theory, budgeting, human resources, and policy analysis.
Topic 2. Sustainable Urban Development as a key concern for modern city management. Creating environmentally, socially, and economically sustainable cities. Government Finance and Budgeting as essential points of city life. Issues concerning local government finance, including taxation, budgeting, and intergovernmental fiscal relations.
Topic 3. City management for effective leadership. Leadership theories and practices relevant to public sector organizations. City managers and ethics. Ethical dilemmas and challenges faced by public administrators, including those in city management roles.
Topic 4. Role of city managers in the life of the city. Preparing for and responding to emergencies. Guidance on disaster planning, response, and recovery. Crowdfunding pitches / Criteria of choosing the supplier / Essentials of business talk and negotiations / Positive and developmental feedback / Brainstorming and presenting new business ideas.
Topic 5. Translation and abstracting of publications in the professional sphere.
Topic 6. Working with sources of professional information and presenting its results in a presentation format.
1. Preparation and writing of an abstract for an article connected with the specialization (Summary – up to 250 words).
2. Preparation and writing of a review of articles connected with the specialization (Article Review – up to 350 words).
3. Preparation of a presentation based on the results of scientific research in the direction of Master's research (Presentation of Publication Analysis up to 20 slides).

Literature

English track

Compulsory reading

1. Denhardt R. B., Denhardt J. V., Hart T. A. (2021). Public Administration: An Action Orientation (7th ed.).
2. Frederickson H. G. (2020). Ethics in Public Administration.
3. Higgins J. (2020). 10 skills for Effective Business Communication: practical strategies from the world's greatest leaders. TYCHO Press. 155 p. https://www.synergy.ase.ro/issues/2021-vol17-no-1/SYN%202021.17.1_08%20-%20Book%20Review_ttps://www.goodreads.com/book/show /41140758-10-skills-for-effective-business-communication10%20Skills.pdf
4. Lee M., Neeley G., Stewart K. (2021). The Practice of Government Public Relations. 338 p.

https://www.academia.edu/75815364/The_Practice_of_Government_Public_Relations
5. Merrifield A. (2020). The Urbanization of People: The Policies, Processes, and Practices that Make Cities Work. https://andymerrifield.org/2020/10/13/beyond-plague-urbanism
6. Pinkowski J. (2019). Disaster Management Handbook. 626 p.
7. Sustainable Urban Development Reader (3rd ed.). (2021). ed. by S.M. Wheeler and T. Beatley: https://www.researchgate.net/publication/328724938_The_sustainable_urban_development_reader_third_edition
8. The New Public Service: Serving, Not Steering. 4th Edition, (Ebook PDF). https://www.scribd.com/document/792634071/The-New-Public-Service-Serving-Not-Steering-4th-Edition-Ebook-PDF-download-pdf
9. Van Wart M. (2019). Leadership in Public Organizations.

Recommended reading

1. Publications from the International City/County Management Association (ICMA)
2. Journals: Public Administration Review, Urban Affairs Review, State and Local Government Review etc.
3. Harvard Business Review, 2020.
4. Mascull B. (2018) Business Vocabulary in Use: Advanced. Third edition. Cambridge University Press.

Web-resources

https://computing.smu.edu.sg/bsc-information-systems/majors/smart-city-management-technology
https://corporate.enelx.com/en/question-and-answers/smart-city-management
https://www.forbes.com/councils/forbestechcouncil/2024/07/16/19-smart-city-technologies-and-how-theyll-transform-urban-living/
https://www.e-zigurat.com/en/smart-cities-masters-program/
https://www.axians.com/news/data-management-smart-city/
https://www.beonic.com/blog/smart-city-technology-benefits
https://www.youtube.com/watch?v=3wFHXoiDcrY&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg&index=5
https://www.youtube.com/watch?v=4dRAKwmY0wU&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg
https://www.youtube.com/watch?v=F8PLu0SNXfA&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg&index=2
https://www.youtube.com/watch?v=tvuw6dlN0s4&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg&index=3
https://www.youtube.com/watch?v=LrBCBg-9SS0&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg&index=5
https://www.youtube.com/watch?v=xUBtpcw90mE&list=PLpkm5DKJfGJyI9YPMSZrryb_BqhKU9Kyg&index=6
https://www.youtube.com/watch?v=KYWztMRwJss
The Guardian. https://www.theguardian.com/international
The Financial Times. http://www.ft.com/home/europe
The Observer. https://www.theguardian.com/observer
The Economist. http://www.economist.com/
The Ukrainian Observer. http://uobserver.com/
Ukrainian Economic Trends Forecasts. Da Vinci Analytic Group. http://davinci.org.ua/ind.php?alltf.
BBC Ukraine. http://www.bbc.com/ukrainian
Central Intelligence Agency. The World Factbook. https://www.cia.gov/library/publications/the-world-factbook/geos/up.html#top
Summarizing. https://www.youtube.com/watch?v=QJdYjNCKCj4
Articles Review. https://www.youtube.com/watch?v=R-0hcFfCD-8&ab_channel=Educraft

CRISIS MANAGEMENT IN A SMART CITY				
The course aims to provide students with the knowledge and skills to manage urban crises in smart cities by using technology, building sustainability, fostering resilience and solving social, economic and ethical problems. Course objectives: to develop resilience strategies for smart cities, understand crisis dynamics in urban environments, learn innovative city technologies and their applications in crisis management, and explore creative solutions and global best practices for managing urban crises in the context of smart cities.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	2	4 / mandatory	Olha Nezhoda PhD, Accosiate Professor	120 hours (26 h. lectures, 12 h. practical classes, 82 h. self-directed learning)
Learning outcomes On completion of the course, students will be able to:		**Teaching methods, teaching and learning activities**		**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and apply advanced scientific, methodological and analytical tools for crisis management in unpredictable environments.		Lectures, seminars, discussions, self-directed learning, presentations		Participation in the discussion, essay, presentation (CAS)
2) Diagnose organisational challenges and justify evidence-based solutions to mitigate and prevent crises.		Lectures, case-based learning, workshops, self-directed learning		Case study analysis (CAS), participation in the discussion, final exam (FAS)
3) Design and implement resilient crisis management frameworks for organisations operating within smart cities.		Project-based learning, group discussions, self-directed learning, solving problems		Participation in the discussion, class participation (CAS), final exam (FAS)
4) Strategically and tactically plan organisational activities to ensure stability and adaptability in crisis conditions.		Presentations and pitches, team assignments, workshops		Team project milestones, (CAS)
5) Develop competencies to formulate, justify and enforce crisis management decisions while adhering to legal, ethical and social responsibility standards.		Lectures, group discussions, seminars, pitches and debates, cases		Participation in the discussion, research paper, peer feedback, class participation (CAS), final exam (FAS)
6) Use specialised software and information systems to support crisis management processes at both organisational and municipal levels.		Lectures, seminars, case-study, group discussions,		Participation in the discussion (CAS)
7) Demonstrate the ability to delegate authority and oversee the management of an organisation or city under crisis conditions.		Project-based learning, group discussions, self-directed learning		Participation in the discussion, class participation, interim project reports (CAS)
8) Plan and execute comprehensive strategies for information, methodological, material, financial and human resource		Presentations and pitches, team assignments, workshops		Team project milestones (CAS)

support within organisations and cities.		
9) Develop and implement organisational and business strategies aligned with the smart city concept to enhance territorial branding and optimise human capital management, particularly in crisis situations.	Lectures, group discussions, seminars, speeches and debates	Participation in the discussion, research paper, peer feedback (CAS)
10) Make informed, strategic decisions on change management in response to crises or post-war recovery, identifying key influencing factors and aligning with sustainable development goals.	Lectures, seminars, case-study, group discussions,	Participation in the discussion (CAS), final exam (FAS)
Assessment		
The final grade is given on a 100-point scale, including 60 points for the current test and 40 points for the final exam. 60 points for the current test consist of: Crisis management strategies: 30 points, Participation in discussions: 10 points, Presentations: 20 points 40 points for the final exam consist of: Case Analysis: 20 points, Problem Solving: 20 points Assessment criteria: Individual Assignment (Crisis management strategy) – 30 Points Content Quality (20 points): depth of analysis, relevance to the topic and demonstration of understanding of crisis management in smart cities. Use of evidence, references and examples to support arguments. Structure and Organisation (5 points): logical ideas flow, arguments clarity and proper format. Language and Style (5 points): proper grammar, vocabulary and adherence to academic writing standards. 2. Participation in Discussions – 10 Points Engagement (5 points): frequency and quality of contributions during class discussions. Demonstration of critical thinking and the ability to build on others' ideas. Preparation (5 points): evidence of prior reading or research related to discussion topics and active encouragement of group dialogue. 3. Presentations – 20 Points Content Quality (10 points): depth of research, clarity of key points and topic relevance — inclusion of practical examples or case studies. Delivery (5 points): confidence, clarity and professionalism in speaking. Effective use of visual aids (e.g., slides, charts). Audience Engagement (5 points): ability to answer questions, stimulate discussion and maintain interest. 4. Case Analysis – 20 Points Problem Identification (5 points): accurate identification and clear explanation of the crisis scenario and its challenges. Analysis and recommendations (10 points): quality and feasibility of proposed solutions, with justification based on evidence and course concepts. Presentation of analysis (5 points): clarity, organisation, and effective communication of findings in written or oral form. 5. Problem Solving – 20 Points Understanding of the Problem (5 points): accurate comprehension and articulation of the issue. Creativity and Innovation (10 points): originality and practicality of the proposed solutions, aligning with smart city principles. Feasibility and Impact (5 points): real-world applicability of solutions and their potential for long-term impact.		
Content		

Topic 1. Introduction to the course “Crisis Management in Smart Cities”
Topic 2. Types of Crises in Smart Cities
Topic 3. Risk Assessment and Crisis Preparedness
Topic 4. Sustainability and Crisis Management
Topic 5. Communication and Stakeholder Collaboration in Smart Cities
Topic 6. Global Case Studies in Smart City Crisis Management
Topic 7. Future Trends in Crisis Management for Smart Cities

Literature

Ukrainian track

Compulsory reading

1. Андрієнко А. Оцінювання зрілості органів місцевого самоврядування великих міст України у сфері впровадження концепції «smart city» у повоєнний період. Вісник НТУ ДП. 2022. № 1. С. 59–70.

Recommended reading

1. Атаманова Н.В., Смирнов М.Д. Діджиталізація державноправової сфери в Україні. Актуальні проблеми вітчизняної юриспруденції. 2022. № 1. https://doi.org/10.32782/392233.
2. Баштанник В.В., Рагімов Ф.В. Формування концептуальних засад механізмів державного управління регіональним розвитком територій в умовах децентралізації. Дніпровський науковий часопис публічного управління, психології, права. 2021. № 9.
3. Брюховецька Н. Ю., Черних О. В. Індустрія 4.0 та цифровізація економіки: можливості використання зарубіжного досвіду на промислових підприємствах України. Економіка промисловості. 2020. № 2 (90). С. 116– 132.
4. Матвеєва О. Європейська парадигма сталого розвитку територіальних громад: досвід для України. Вісник Національної академії державного управління при Президентові України. 2021. № 1(100). http://visnyk-nadu.academy.gov.ua/article/view/232097

English track

Compulsory reading

1. Diers-Lawson, Audra, Andreas Schwarz, Florian Meissner, and Silvia Ravazzani. Risk and Crisis Communication in Europe: Towards Integrating Theory and Practice in Unstable and Turbulent Times. 1st ed. New York: Routledge, 2024. https://doi.org/10.4324/9781003375296.
2. Jedynak P., Bąk S. Risk Management in Crisis: Winners and Losers during the COVID-19 Pandemic. 1st ed. London: Routledge, 2021. https://doi.org/10.4324/9781003131366.
3. Mac Ginty, Roger. The EU and Crisis Response. Edited by Sandra Pogodda and Oliver P. Richmond. Manchester: Manchester University Press, 2021.
4. Phan, Thanh, and Daniela Damian, eds. Smart Cities in Asia: Regulations, Problems, and Development. SpringerBriefs in Geography. Singapore: Springer Nature Singapore, 2022. https://doi.org/10.1007/978-981-19-1701-1.
5. Belaïd, Fateh, and Anvita Arora, eds. Smart Cities: Social and Environmental Challenges and Opportunities for Local Authorities. Studies in Energy, Resource and Environmental Economics. Cham: Springer International Publishing, 2024. https://doi.org/10.1007/978-3-031-35664-3.

Recommended reading

1. UNDRR and AP-STAG (2024). Status of Science and Technology in Disaster Risk Reduction in
2. Johnson, Craig, Noah Toly, and Heike Schroeder, eds. The Urban Climate Challenge: Rethinking the Role of Cities in the Global Climate Regime. London: Routledge, 2015.
3. Fadlullah, T. Z., M. M. Fouda, N. Kato, A. Takeuchi, N. Iwasaki, and Y. Nozaki. "Cybersecurity and Critical Infrastructure in Smart Cities." IEEE Communications Magazine 55, no. 3 (2017): 38–45. https://doi.org/10.1109/MCOM.2017.1600298CM.
4. Crisis Management in Smart Cities: A CORE Repository Search https://core.ac.uk/search/?q=crisis%20management%20in%20smart%20city

WORK PLACEMENT				
The work placement aims to develop students' professional ability to make independent decisions in real-world production settings, develop practical skills in their chosen field or speciality, deepen their knowledge of modern enterprise technologies and current regulatory frameworks, and facilitate a smoother transition into their first employment positions.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Coordinator**	**Student workload**
Ukrainian	2 / 4 weeks, 6 hours in class	6 / Mandatory	Olena Lytvynenko, PhD, Associate Professor	180 hours (6 h. practical classes, 174 h. work at the enterprise)

Learning outcomes On completion of the Work Placement, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Demonstrate comprehensive knowledge and a deep understanding of the subject area and the future professional field.	Self-study activity, work at the enterprise	Internship report, presentation, feedback from the company (CAS)
2) Effectively apply professional language and management terminology in both written and verbal communication.	Work at the enterprise, internet search	Internship report, presentation (CAS)
3) Adapt to and operate effectively in dynamic and unfamiliar environments.	Work at the enterprise, self-study activity	Internship report, presentation (CAS)
4) Exhibit socially responsible behaviour and demonstrate awareness of ethical and societal implications in professional activities.	Work at the enterprise, self-study activity	Internship report, presentation (CAS)
5) Apply practical skills to navigate diverse linguistic, cultural and legal contexts in a professional setting.	Self-study activity, writing a report, preparing presentation	Internship report, presentation (CAS)
6) Develop and implement strategic approaches for enterprise (company) management.	Work at the enterprise	Internship report, presentation (CAS)
7) Formulate evidence-based proposals and initiatives to enhance enterprise (company) performance.	Self-study activity, work at the enterprise	Internship report, presentation (CAS)
8) Demonstrate the ability to motivate individuals and foster collective efforts toward shared organisational goals.	Work at the enterprise	Internship report, feedback from the company (CAS)
9) Substantiate and effectively communicate ideas and perspectives to both expert and non-expert audiences in management.	Discussion, writing a report, preparing presentation	Internship report, presentation (CAS)

Assessment

The results of each work placement are evaluated separately by the final grade.
The final grade is determined by 100% continuous assessment, broken down as follows:
30% – Feedback from the company

40% – Report
30% – Presentation

Contents

Topic 1. Strategic Planning for Smart Cities
Topic 2. Project Management in Smart City Initiatives
Topic 3. Data-Driven Decision Making
Topic 4. Sustainable Urban Development Management
Topic 5. Smart Transportation Management
Topic 6. Public-Private Partnerships in Smart Cities
Topic 7. Cybersecurity Management for Smart Cities
Topic 8. Urban Infrastructure Management
Topic 9. Smart Waste Management Systems
Topic 10. Energy Management in Smart Cities
Topic 11. Citizen Engagement and Communication
Topic 12. Emergency Management and Public Safety
Topic 13. Smart Water Management
Topic 14. Urban Mobility and Autonomous Vehicle Management
Topic 15. Smart Building Management
Topic 16. Urban Air Quality Management
Topic 17. Digital Twin Technology Management
Topic 18. Smart Parking Management
Topic 19. Blockchain Management in Smart Cities
Topic 20. Urban Agriculture Management
Topic 21. Smart Lighting Systems Management

Literature

Compulsory reading

1. Gassmann, O., Böhm, J., & Palmié, M. (2019). Smart cities: Introducing digital innovation to cities. Emerald Publishing Limited. https://doi.org/10.1108/9781787696136
2. Khan, M. A., Imran, M., & Ahmed, S. H. (2020). Smart cities: A data analytics perspective. Springer. https://doi.org/10.1007/978-3-030-60922-1
3. Lee, J. H. (2018). Building the smart city: Solutions for urban development. Springer.
4. McCarney, P., & Stren, R. E. (Eds.). (2019). Urban sustainability and smart cities. Springer.
5. Schwab, K. (2017). The fourth industrial revolution. Crown Business.
6. Smart Cities Council. (2017). The smart city playbook: Smart, safe, and sustainable. Smart Cities Council.
7. Song, H., Srinivasan, R., Sookoor, T., & Jeschke, S. (Eds.). (2017). Smart cities: Foundations, principles, and applications. Wiley. https://doi.org/10.1002/9781119226444
8. Barlow, M., & Levy-Bencheton, C. (2018). Smart cities: The future of urban infrastructure. Wiley.

Recommended reading

1. PLOS. (2024). Smart cities research. PLOS. Retrieved from https://journals.plos.org/plosone/smart-cities-research
2. Springer. (2023). Smart cities and the IoT: An in-depth analysis of global research trends and future directions. Springer. Retrieved from https://link.springer.com/article/10.1007/springer-smart-cities-iot
3. The Conversation. (2024). Smart cities news, research and analysis. The Conversation. Retrieved from https://theconversation.com/smart-cities-news-research-analysis

PRE-GRADUATION INTERNSHIP

The internship aims to develop students' professional ability to make independent decisions in real-world production settings, develop practical skills in their chosen field or speciality, deepen their knowledge of modern enterprise technologies and current regulatory frameworks, and facilitate a smoother transition into their first employment positions.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Coordinator**	**Student workload**
Ukrainian	3 / 4 weeks, 6 hours in class	6 / Mandatory	Volodymyr Momot, PhD, Associate Professor	180 hours (6 h. practical classes, 174 h. work at the enterprise)

Learning outcomes On completion of the Pre-Graduation Internship, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Demonstrate advanced knowledge and a critical understanding of the subject area and the chosen professional field.	Self-study activity, work at the enterprise	Internship report, presentation, feedback from the company (CAS)
2) Effectively use specialised management terminology and professional language in diverse business contexts.	Work at the enterprise, internet search	Internship report, presentation (CAS)
3) Adapt to complex and unpredictable situations, applying problem-solving and decision-making skills.	Work at the enterprise, self-study activity	Internship report, presentation (CAS)
4) Exhibit ethical awareness and social responsibility in professional and managerial decision-making.	Work at the enterprise, self-study activity	Internship report, presentation (CAS)
5) Apply practical skills to operate effectively in multilingual, multicultural and legally diverse environments.	Self-study activity, writing a report, preparing presentation	Internship report, presentation (CAS)
6) Develop and implement strategic frameworks to enhance enterprise (company) performance and competitiveness.	Work at the enterprise	Internship report, presentation (CAS)
7) Formulate data-driven proposals and action plans to optimise business operations and organisational effectiveness.	Self-study activity, work at the enterprise	Internship report, presentation (CAS)
8) Apply motivational theories and leadership principles to inspire teams and drive collective goal achievement.	Work at the enterprise	Internship report, feedback from the company (CAS)
9) Construct well-reasoned arguments and persuasively communicate insights to both expert and non-expert audiences in management.	Discussion, writing a report, preparing presentation	Internship report, presentation (CAS)

Assessment

The results of each internship are evaluated separately by the final grade
The final grade is determined by 100% continuous assessment, broken down as follows:
40% Feedback from the company
40% Report

20% Presentation

Contents

Topic 1. Assisting in the creation and implementation of policies that support smart city initiatives.
Topic 2. Developing strategies to enhance the resilience of urban infrastructure against climate change and natural disasters.
Topic 3. Exploring funding models and investment strategies for smart city projects.
Topic 4. Ensuring that smart city technologies are accessible to all citizens, including marginalized communities.
Topic 5. Developing and implementing metrics to evaluate the performance of smart city initiatives.
Topic 6. Leveraging smart technologies to improve public health services and outcomes.
Topic 7. Using smart technologies to enhance the tourism experience and manage tourist flows.
Topic 8. Creating and managing innovation hubs that foster collaboration and development of smart city solutions.
Topic 9. Developing educational programs and training modules for smart city professionals.
Topic 10. Crafting communication plans to effectively convey smart city initiatives to the public.
Topic 11. Managing integrated urban mobility solutions that combine various transportation modes.
Topic 12. Addressing ethical considerations and governance frameworks for smart city technologies.
Topic 13. Implementing smart technologies to enhance disaster response and recovery efforts.
Topic 14. Using smart technologies to manage and optimize urban green spaces.
Topic 15. Building and managing ecosystems that support innovation and entrepreneurship in smart cities.
Topic 16. Ensuring data privacy and protection in the implementation of smart city technologies.
Topic 17. Managing the lifecycle of smart city infrastructure from planning to decommissioning.
Topic 18. Developing and managing digital twin models for urban planning and infrastructure management.
Topic 19. Evaluating the social impact of smart city projects and initiatives.
Topic 20. Developing and implementing standards to ensure interoperability of smart city technologies.
Topic 21. Engaging citizens in data collection and analysis to support smart city initiatives.

Literature

Compulsory reading

1. Gassmann, O., Böhm, J., & Palmié, M. (2019). Smart cities: Introducing digital innovation to cities. Emerald Publishing Limited. https://doi.org/10.1108/9781787696136
2. Khan, M. A., Imran, M., & Ahmed, S. H. (2020). Smart cities: A data analytics perspective. Springer. https://doi.org/10.1007/978-3-030-60922-1
3. McCarney P., Stren, R.E. (Eds.). (2019). Urban sustainability and smart cities. Springer.

Recommended reading

1. PLOS. (2024). Smart cities research. PLOS. https://journals.plos.org/plosone/smart-cities-research
2. Springer. (2023). Smart cities and the IoT: An in-depth analysis of global research trends and future directions. https://link.springer.com/article/10.1007/springer-smart-cities-iot https://doi.org/10.1007/springer-smart-cities-iot
3. The Conversation. (2024). Smart cities news, research and analysis. https://theconversation.com/smart-cities-news-research-analysis

Elective courses

DESIGN THINKING IN BUSINESS				
The course aims to form a system of knowledge on the design thinking methodology and principles and practical skills in solving business problems using design thinking tools.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	1	4 / selective	Olena Yevtushenko, PhD, Associate Professor	120 hours (18 h. lectures, 14 h. practical classes, 88 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and effectively use appropriate scientific, methodological and analytical tools for integrating design thinking into organisational practices.	Lectures, testing, group work, case studies	Case study presentation. Testing. Evaluation of exercise results (CAS).
2) Design and implement efficient management systems that leverage design thinking principles to enhance organisational performance.	Lectures, testing, group work, business game, case studies	Case study presentation. Testing. Evaluation of exercise results. Participation in a business game (CAS).
3) Justify and oversee project development, generate and refine entrepreneurial ideas, and navigate all phases of the design thinking process.	Lectures, testing, group work, business game, case studies, creative task	Case study presentation. Testing. Participation in a business game. Presentation of the results of the creative task (CAS)
4) Develop advanced decision-making skills to formulate, substantiate, and ensure the execution of managerial decisions under conditions of uncertainty using design thinking methodologies.	Lectures, testing, group work, business game, case studies, exercises	Case study presentation. Testing. Evaluation of exercise results. Participation in a business game (CAS).
5) Facilitate and engage in effective communication within teams, across professional groups and in international settings through the application of design thinking techniques.	Lectures, testing, group work, business game	Testing. Participation in a business game, Group project presentation (CAS).
6) Use specialised software and information systems to support and optimise various stages of the design thinking process in business contexts.	Lectures, testing, group work, business game, case studies	Case study presentation. Testing. Participation in a business game (CAS).
7) Demonstrate the ability to delegate authority, coordinate and lead an organisation (or unit) at different stages of design thinking implementation.	Lectures, testing, group work, business game	Testing. Participation in a business game (CAS).

8) Strategically plan and manage the informational, methodological, material, financial and human resource support required for an organisation (or unit) using design thinking tools.	Lectures, testing, group work, business game, case studies, exercises	Case study presentation. Testing. Evaluation of exercise results. Participation in a business game (CAS).

Assessment

Final score:
The final grade for the course is given on a 100-point scale.
100 points for content modules and diagnostic forms:

Modules, topics and diagnostic forms	Maximum number of points
Content module 1	70
Topic 1, testing, case study presentation.	10
Topic 2, testing, evaluating the results of exercises, participation in a business game.	10
Topic 3, testing, evaluating the results of exercises, participation in a business game.	10
Topic 4, testing, case study presentation.	10
Topic 5, testing, evaluating the results of exercises, participation in a business game.	10
Topic 6, testing, evaluating the results of exercises, participation in a business game.	10
Topic 7, testing, case study presentation	10
Presentation of a creative task	30
Total for work in practical classes	100

Rating scale

ECTS grade	ANU grading scale	National (four-point) scale
A	90-100	5 (excellent)
B	82-89	4 (very good)
C	75-81	4 (good)
D	67-74	3 (satisfactory)
E	60-66	3 (sufficient)
FX	35-59	2 (unsatisfactory) – additional work is required before re-examination or earning course credit
F	1-34	2 (unsatisfactory) – mandatory re-study of the course

Content

Topic 1. The essence of design thinking in business
Topic 2. The stage of empathy
Topic 3. Focusing stage
Topic 4. Ideation stage
Topic 5. Prototyping stage
Topic 6. Testing stage
Topic 7. Organising design thinking in a company

Literature

Ukrainian track

Compulsory reading

1. Богоявленська Ю.В. Дизайн-мислення: конспект лекцій. – Житомир: Державний університет «Житомирська політехніка», 2021. https://dig2eco.ztu.edu.ua/wp-content/uploads/2022/09/dizajn-mislennya-konspekt-lekczij-1.docx

Recommended reading

1. Ткаченко А.М., Плинокос Д.Д. Дизайн-мислення, як нова парадигма розвитку стартапу. Центральноукраїнський науковий вісник. Економічні науки, 2021, вип. 6(39). https://economics.kntu.kr.ua/pdf/6(39)/25.pdf
2. MURAL (2020). https://lifehacker.ru/mural-ly/
3. Дизайн-мислення для зростання бізнесу: проектування і масштабування бізнес-моделей та екосистем. Л. Міхаель. https://leader-books.com.ua/biznes-ta-ekonomika/dizain-mislennya-dlya-zrostannya-biznesu-proektuvannya-i-masshtabuvannya-biznes-modelei-ta-ekosistem-levrik-mikhael

English track

Compulsory reading

1. Barnett Bill, Evans Dave. Design Thinking. Design Your Life / translated from English by Valeria Glinko. – 2nd ed. K.: Nash format, 2019. – 224 p.
2. Vinnyk M.O., Spivakovska E.O., Ilyina I.V. Design thinking. Lecture course: teaching - methodical manual. / Kherson – Ivano-Frankivsk: Misto NV, 2023. 84 p.
3. Design. Think. Make. Break. Repeat. A Handbook of Methods / The University of Sydney School of Architecture, Design and Planning and BIS Publishers, 2018. — 160 p.
4. Tim Brown (2019). Change by Design: How Design Thinking Transforms Organizations and Inspires / HarperBusiness, 2019. — 272 p.

Recommended reading

1. Eric Rise. Startup without mistakes. A guide to creating a successful business from scratch. – Kh.: Vivat, 2018. – 368 p.
2. Cleon Austin. Steal like an artist. Creative diary – 3rd ed. Kh.: Family Leisure Club, 2019. – 224 p.
3. Cleon Austin. Turn up the heat. 10 steps to creative mastery. Kh.: Family Leisure Club, 2019. – 224 p.
4. Bender R. (2020). Design Thinking as an Effective Method for Driving Innovative Solutions this Wicked Problems. Fielding Graduate University. https://search.proquest.com/docview/2394838219?pq-origsite=primo
5. Coker, Alison. (2019). A Design Thinking Approach this Improve School Leader Onboarding in Context of Creating a Principal Succession Management Framework. The Stout School of Education. https://search.proquest.com/docview/2414802683/?pq-origsite=primo
6. Gasparini A. (2020). Design Thinking for Design Capabilities in an Academic Library . University of Oslo https://www.duo.uio.no/handle/10852/72835
7. Design Thinking for Innovation. Free course. https://prometheus.org.ua/designthinking/
8. How design thinking has become more important for business. https://nachasi.com/2018/09/11/instrument-dyzajn-myslennya/
9. Designed in Ukraine: how design thinking works in Ukraine. http://bydesign.platfor.ma/designed-in-ukraine
10. 50 shades of design thinking: in which areas to use the method. http://bydesign.platfor.ma/dt-everywhere
11. canvanizer.com, https://www.strategyzer.com/

PSYCHOLOGY OF THE NEGOTIATION PROCESS				
The course aims to develop both general cultural and professional competencies in the psychology of communication and negotiation. It introduces students to the theoretical foundations of business negotiations, teaches key rules and principles, and provides practical methods for finding the best alternatives to negotiated agreements. The course focuses on building skills to establish contact with opponents, select effective listening models and prepare for and analyse (including self-analyse) public speaking.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	1	4 / elective	Inesa Harkusha, PhD, Associate Professor	120 hours (18 h. lectures, 14 h. practical classes, 88 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:			**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and effectively apply scientific, methodological and analytical tools for conducting negotiations in unpredictable environments.			Lecture, discussion based on the lecture materials and literature sources studied	Participation in the discussion, oral answers to questions (CAS), final test (FAS)
2) Diagnose organisational challenges and substantiate appropriate problem-solving methods, including negotiation strategies.			Problem lecture, seminar dialogue, presentations, role-playing games	Independent work, oral answers to questions, role-play game evaluation (CAS)
3) Develop advanced decision-making skills to formulate, justify and ensure the implementation of management decisions during negotiations, considering legal, ethical and social responsibility requirements.			Lecture-dialogue, round table on the topic of independent work, cases	Independent work, solving cases (CAS), final test (FAS)
4) Facilitate and manage effective communication within teams, across professional groups and in international contexts to enhance negotiation outcomes.			Lecture, seminar, project work	Participation and engagement assessment, oral answers to questions, solving/explaining practical case studies, evaluating the presentation (CAS)
5) Communicate proficiently in both professional and academic settings, demonstrating fluency in the national and foreign languages.			Problem lecture, round table on the topic of independent research work, presentations	Peer evaluation, oral answers to questions, solving problems (problem situations), explaining the solution of problems (CAS)
6) Exhibit leadership qualities, collaborate effectively in teams, engage with stakeholders during negotiation processes and influence behaviour to achieve professional objectives.			Lecture-discussion, seminar, work in small groups, analysis of specific situations (case study)	Participation and engagement assessment, independent work, oral answers to questions, (case

7) Commit to continuous professional development in psychology, communication and time management to enhance negotiation competencies. 8) Demonstrate the ability to delegate authority strategically during negotiations to optimise decision-making and operational efficiency. 9) Make informed decisions on change management, including in uncertain or post-conflict contexts, while identifying key influencing factors and aligning with sustainable development goals.	Reports of students - individual and in groups, presentations, project work, Internet search Lecture of the 'peer teaching' type, discussion of practical case studies, problem-search method using the Internet Independent work, Case study in small groups, presentations, Internet search	study presentation (CAS), final test (FAS) Oral answers to questions, solving problems Participation in the discussion of situational problems, analyzing cases (CAS) Oral answers, case study (case study presentation), evaluating the presentation (CAS), final test (FAS)

Assessment

Final grade as a result of 100% continuous assessment:
60% completion of individual practical tasks (cases, mini-cases)
40% final semester control (tests)
Assessment criteria:
6 practical tasks of 10 points each – 60 points, 40 test questions – 40 points.
Module 1 (max - 20 points). Points earned upon completion of 2 practical tasks, each worth 10 points.
Module 2 (max - 20 points). Points earned upon completion of 2 practical tasks, each worth 10 points.
Module 3 (max - 20 points). Points earned upon completion of 2 practical tasks, each worth 10 points.
Assessment criteria for the tasks:
9-10 points – the student has completed the task correctly and demonstrates a deep understanding of the material. All detailed conclusions have been made.
7-8 points – the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions have been made.
5-6 points – the student demonstrates insufficient understanding of the material. The task has been completed partially or in general terms. The student has made partial conclusions.
3-4 points – the student demonstrates ignorance of the material, contains significant errors, there are no conclusions.
1-2 points – the student demonstrates ignorance of the material. The task has not been completed to the end, there are no conclusions.
0 points – the task is not fully completed by the student..

Content

Module 1. Electrology. Speech culture and language activity
Topic 1. Speech culture as a science and art
Topic 2. Technique of speech invention. Categories and stages
Topic 3. Argumentation as an aspect of disposition.
Topic 4. Emotional aspect and emotional intelligence in the negotiation process.
Module 2. Psychology of the negotiation process
Topic 5. Negotiations are a collaborative process.
Topic 6. Means of interactive interaction
Topic 7. Psychological aspects of the negotiation process
Topic 8. Listening to a partner as a psychological technique.

Topic 9. Negotiations and manipulation
Topic 10. National styles of negotiation
Module 3. Mediation. Negotiations with criminals as a criminal phenomenon
Topic 11. Mediation and negotiations in extreme conditions
Topic 12. Crisis negotiations. Psychological problems of terrorism
Topic 13. Hostage psychology

Literature

Ukrainian track

Compulsory reading

1. Бистрицький Євген, Зимовець Роман, Пролеєв Сергій. Комунікація і культура в глобальному світі. Дух і літера, 2020. 416 с.
2. Бізнес-переговори: конспект лекції з дисципліни. К.Ю. Величко. Харків: ДБТУ, 2024. 96 с. https://repo.btu.kharkov.ua/bitstream/123456789/57924/1/KL_Byznes_peregovory_2024.pdf
3. Волошенко М., Азаркіна О. Психологія професійного спілкування. Вид-во: Олді-Плюс. 2021. 280 с. URL: https://www.yakaboo.ua/ua/psihologija-profesijnogo-spilkuvannja.html
4. Гаркуша І.В. Риторична культура мовлення сучасного фахівця-психолога: навчальний посібник. Дніпро: Університет імені Альфреда Нобеля, 2019. 144 с.
5. Георгієва Є. Психологія ефективності переговорного процесу. Тактичні прийоми та методи підготовки й ведення ділових переговорів. Миколаїв. 2021. URL: https://dspace.mnau.edu.ua/jspui/bitstream/123456789/7023/1/ychast_conf_2020-21.pdf
6. Кемп Джим Спершу скажи "НІ". Інструменти професійного переговорника. Вид-во: Наш формат. 2019. 256 с. URL: https://www.yakaboo.ua/ua/spershu-skazhi-ni-instrumenti-profesijnogo-peregovornika.html
7. Переговори і медіація у кримінальному проваджен ні: навч. посібник / І. В. Гловюк, А. В. Лапкін, М. Р. Мазур, В. Т. Нор, О.О. Торбас, А.Р. Туманянц, Т. А. Цувіна]; за ред. д-ра юрид. наук, проф. Василя Нора, канд. юрид. наук, доц. Марти Мазур. Електрон. вид. Львів: ЛНУ ім. Івана Франка, 2022. 328 с.
8. Рахліс В.Л. Переговори і медіація: підручник для підготовки професійного переговірника. підручник, видання 2-е перероблене. 2021. 344 с.
9. Стоун Дуглас, Петтон Брюс, Гін Шейла. «Складні розмови. Як обговорювати те, що хвилює найбільше. Віват. 2019. 272 с.

Recommended reading

1. Альтернативні способи вирішення цивільних спорів за законодавством України: навчальний посібник / Верба-Сидор О.Б., Воробель У.Б., Грабар Н.М., Дутко А.О., Юркевич Ю.М.; за ред. канд. юрид. наук, доц. О.Б. Верби-Сидор. Львів: Львівський державний університет внутрішніх справ, 2021. 416 с.
2. Гаркуша І.В., Крижановський А.Є. Сучасний стан проблеми формування комунікативних компетенцій у майбутніх фахівців із соціальної роботи. Моделювання компетентнісної професійної освіти в контексті євро-інтеграції: монографія / кол. авт; за заг. ред. проф.Н.П. Волкової. Дніпро: Університет імені Альфреда Нобеля, 2021. С. 183-197.
3. Гаркуша І.В., Васильєва А.Ю. Комунікативні бар'єри громадян України під час спілкування іноземною мовою. Вісник університету імені Альфреда Нобеля. Серія «Педагогіка і психологія». Педагогічні науки. Дніпро: ТОВ «Роял Принт», 2022. № 2 (24). 244с. С. 98-107.
4. Жигілій Євген. Майстер дзвінка. Як пояснювати, переконувати і продавати телефоном. Видавництво: Моноліт. 2019. 376 с.
5. Інтерпретації російсько-українського конфлікту в західних наукових і експертно-аналітичних працях / За ред. В.Кулика. К.: ІПіЕНД І.Ф. Кураса НАН України, 2020. 328 с.
6. Кацавець Р.С. Ораторське мистецтво: підручник. Вид. 3. Київ: Алерта, 2021. 250 с.
7. Кінг Ларрі, Ґілберт Білл. Як розмовляти будь з ким, будь-коли і будь-де. Видавництво: Моноліт. 2019. 208 с.
8. Кріс Восс, Тал Рез Ніколи не йдіть на компроміс. Техніка ефективних переговорів. Наш

Формат. 2019. 264 с.
9. Левченко О. Робота з конфліктами в громадах у процесі децентралізації. Метод.посібник. Київ. 2020. 65 с. https://www.osce.org/files/f/documents/2/b/479278.pdf
10. Медіація у професійній діяльності юриста: підручник: за ред. Н. Крестовської, Л. Романадзе. Одеса: Екологія, 2019. 462 с.
11. Партико Н. Психологія конфліктів. Львів: Львівська політехніка. 2019. 132 с.
12. Петтон Б., Стоун Д., Хин Ш. Складні розмови. Як обговорювати те, що хвилює найбільше. Вид-во: Vivat. 2019. 272 с. https://www.yakaboo.ua/ua/skladni-rozmovi-jak-obgovorjuvati-te-scho-hviljue-najbil-she.html
13. Рез Т., Восс К. Ніколи не йдіть на компроміс. Техніка ефективних переговорів. Вид-во: Наш Формат. 2019. https://www.yakaboo.ua/ua/nikoli-ne-jdit-na-kompromis-tehnika-efektivnih-peregovoriv.html#tab-description
14. Робертс Е. Лідерство в часи війни. Головні уроки від творців історії. Вид-во: КМ-БУКС. 2021. 216 с. https://www.yakaboo.ua/ua/liderstvo-v-chasi-vijni-golovni-uroki-vid-tvorciv-istorii.html
15. Роменський М. Переговори з дельфінами. Вид-во: Фабула. 2021. 176 с. https://www.yakaboo.ua/ua/peregovori-z-del-finami.html
16. Росс Дж. Переговори у стилі Трампа. Ефективні стратегії і прийоми майстерного ведення бізнес-переговорів. КМ-БУКС. 2019. 240 с. https://www.yakaboo.ua/ua/peregovori-u-stili-trampa-efektivni-strategii-i-prijomi-majsternogo-vedennja-biznes-peregovoriv.html
17. Стів Мартін, Роберт Чалдіні, Ноа Гольдштейн. Так! 60 секретів із науки переконання. Book Chef. 2019. 304 с. https://www.yakaboo.ua/ua/tak-60-sekretiv-iz-nauki-perekonannja.htm
18. Шаров О.М. Економічна дипломатія: основи, проблеми та перспективи: монографія Національний інститут стратегічних досліджень. Київ: НІСД, 2019. 560 с.

English track

Compulsory reading

1. Barker Alan. (2019) Improve Your Communication Skills: How to Build Trust, Be Heard and Communicate with Confidence - Creating Success. Fifth edition. Kogan Page Publishers. 176 p.

Recommended reading

1. Dave Kerpen (2019). THE ART OF PEOPLE: 11 Simple People Skills That Will Get You Everything You Wan. Currency. 2019. 288 p.
2. Gates Steve The Negotiation Book: Your Definitive Guide to Successful Negotiating Wiley; 3rd edition. 2022. 272 p.
3. Khamlichi, N., & Benahmed, N. (2024). Decisions and negotiations in business: unraveling the interplay for optimal outcomes. International Journal of Trade and Management, 1(3), 51–60. https://doi.org/10.34874/PRSM.ijtm-vol1iss3.1342
4. Lee, Victor (2020). The negotiator's assembly line. Open Access Te Herenga Waka-Victoria University of Wellington. Thesis. https://doi.org/10.26686/wgtn.17142347.v1
5. Stone Douglas, Patton Bruce, Heen Sheila. Difficult Conversations. How to Discuss What Matters Most. Penguin Books. 2019. 315 p.
6. Wheeler Michael. The Art of Negotiation: How to Improvise Agreement in a Chaotic World (A Creative Guide to Negotiating). rilliance Audio; Abridged edition. 2019. 320 p.

MODERN TECHNOLOGIES IN FINANCIAL MARKETS				
The course aims is to introduce students to modern technological innovations that are transforming financial markets and to provide in-depth knowledge and skills to analyse and apply these technologies in financial practice. Students will also study the impact of new technologies on the structure of financial markets, risk management mechanisms and the creation of innovative financial products, as well as their legal and ethical aspects. By mastering financial ethics, students will be better prepared to build successful careers, influence other areas of life and foster a culture of integrity through the development of ethical thinking, which involves recognising ethical dilemmas, understanding ethical standards and making well-reasoned decisions.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	4 / Elective	Zoia Pestovska, PhD, Associate Professor	120 hours (18 h. lectures, 14 h. practical classes, 88 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:		**Teaching methods, teaching and learning activities**		**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and effectively apply scientific, methodological and analytical tools for managing the financial resources of an organisation or municipality in uncertain and volatile conditions.		Lecture, discussion of the lecture materials, analysis of specific situations (case study)		Test, discussion, case study (CAS)
2) Develop advanced decision-making skills to formulate, justify and ensure the implementation of financial management strategies under unpredictable circumstances while adhering to legal, ethical and social responsibility standards.		Lecture, discussion of the lecture materials, role play, work in small groups to solve problem tasks		Test, discussion, role play, participation and engagement assessment (CAS)
3) Demonstrate the ability to strategically plan and manage the informational, methodological, material, financial, credit and human resource support necessary for the effective functioning of an organisation or its subdivisions.		Lecture, discussion based on the lecture materials, case-study analysis		Test, discussion, presentation (CAS)
Assessment				
Assessment: 70% continuous control: solving problems and situational tasks, testing, role play, discussions and problematic issues. Criteria for assessing work in practical classes (during the class, students can earn the following points if they): 9-10 points - perform tasks with an explanation of the sequence of logical actions, with references to theoretical knowledge (terms, methods, principles, rules), make minor mistakes, perform 90-100% of test tasks; 7-8 points - independently solve problems with sufficient explanation, independently correct the specified errors, perform 75-90% of test tasks; 5-6 points - independently solve problems with sufficient explanation, perform 60-75% of test tasks;				

3-4 points - make mistakes in tasks that cannot be corrected independently, perform 45-60% of test tasks;
1-2 points - try, but cannot cope with the tasks independently, complete less than 45% of the test tasks;
0 points - inactive or absent from classes.
Criteria for assessing the results of an individual task – complex situations involving the application of financial etiquette rules and their resolution (30 points in total):
28-30 - the task is completed and submitted on time, is well written, has all the necessary calculations and explanations, and there are no arithmetic errors;
21-27 - the task is completed, but there are minor errors or inaccuracies in the solution of the task, or it is submitted with a delay of up to 5 days;
14-20 - the task is completed, but there are logical and/or arithmetic errors in the solution, or it is submitted with a delay of up to 10 days;
4-13 - the task is completed, but there are significant errors in the solution, or it is submitted with a delay of up to 15 days;
0-3 - the task is not completed or has just begun to be solved, or it is submitted with a delay of up to 15 days.

Content

Topic 1: Profit or Principle: the long history of the ethical dilemma of financiers
Topic 2. Technical analysis.
Topic 3. Fundamental analysis
Topic 4. Derivative financial instruments
Topic 5. Standard 1 ‘Professionalism’, Standard 2 ‘Integrity of capital markets’
Topic 6. Standard 3 ‘Duties to Clients’, Standard 4 ‘Duties to Employers’
Topic 7. Standard 5: Investment Analysis, Recommendations and Actions, Standard 6: Conflicts of Interest, Codes for Asset Management Companies
Topic 8: Financial engineering
Topic 9: (R)evolution of banking

Literature

Ukrainian track

Compulsory reading

1. Прибуток чи принципи: велика історія етичної дилеми фінансистів. https://project.liga.net/projects/ethics-in-finance/
2. Етика фахівця з фінансів та інвестицій. https://www.youtube.com/watch?v=j0pjiEC3bLM
3. Finance code of ethics. https://www.sec.gov/Archives/edgar/data/1396279/000119312507083128/dex141.htm
4. Ринок фінансових послуг: навч. посіб. / Н.Р. Слав’юк, С.В. Глущенко. – Київ: НаУКМА, 2022. – 206 с. https://ekmair.ukma.edu.ua/server/api/core/bitstreams/20517829-c856-41f3-b0c1-2ac07f9fbaf5/content
5. Фінансовий ринок: Навчальний посібник / Н. В. Трусова, С. А. Нестеренко, І. Є. Якушева та ін. – Мелітополь: Видавничий будинок ММД, 2021. – 236 с.
6. Кравченко П. Блокчейн і децентралізовані системи: навч. посібник у 3 ч. Ч. 1 / П. Кравченко, Б. Скрябін, О. Дубініна. – Харків: ПРОМАРТ, 2019. – 452 с. https://repository.kpi.kharkov.ua/items/6f82ba95-8781-4d77-a6da-e939716c2b05

Recommended reading

1. Підготовчий електронний курс для кандидатів програми CFA 2023 року (I рівень). https://www.cfasociety.org/ukraine/Documents/CFA%20Prep%20E-course_2023.pdf?fbclid=IwAR1P5bz0N8xZiysnrOPn2cVuq6-qGQt9R-s-8o_QUvBrr5iMAgQ9T1hQeAQ
2. The Importance of Ethics in Finance. https://execed.kelley.iu.edu/the-importance-of-ethics-in-finance/
3. Guide to Financial Markets Why they exist and how they work https://media.economist.com/sites/default/files/pdfs/Guide_to_Financial_Markets_6e.pdf

4. Офіційний сайт Державної служби статистики України: http://www.ukrstat.gov.ua/
5. Офіційний сайт Національної комісії з цінних паперів та фондового ринку: http://nssmc.gov.ua/
6. Офційний сайт НБУ: www.bank.gov.ua/bank_supervision/Dynamics/2001–last.htm/
7. Сайт страхового ринку України. www.insurancetop.com.
8. Закон України «Про платіжні системи та переказ коштів в Україні» від 05.04.2001 р. за № 2346 https://zakon.rada.gov.ua/laws/show/2346-14#Text
9. Закон України «Про запобігання та протидію легалізації (відмиванню) доходів, одержаних злочинним шляхом, фінансуванню тероризму та фінансуванню розповсюдження зброї масового знищення» від 06.12.2019 р. за № 361-IX - https://zakon.rada.gov.ua/laws/show/361-20#Text
10. Закон України «Про платіжні послуги» від 30.06.2021 р. за № 1591- IX - https://zakon.rada.gov.ua/laws/show/1591-20#Text
11. Закон України «Про віртуальні активи» від 08.09.2021 р. https://zakon.rada.gov.ua/go/2074-20

English track

Compulsory reading

1. Financial Markets and Institutions seventh edition Frederic S. Mishkin, Stanley G. Eakins http://www.kadamaee.ir/payesh/books-tank/19/Mishkin%20&%20Eakins%20-%20Financial%20Markets%20and%20Institutions,%207e%20(2012).pdf
2. Financial Markets and Institutions 7th Edition By Anthony Saunders and Marcia Cornett https://www.mheducation.com/highered/product/financial-markets-institutions-saunders-cornett/M9781259919718.html

Recommended reading

1. Valdonė Darškuvienė Vytautas Magnus University Financial Markets: https://www.bcci.bg/projects/latvia/pdf/7_Financial_markets.pdf
2. Fundamentals of Financial Market. https://www.edb.gov.hk/attachment/en/curriculum-development/kla/technology-edu/resources/business-edu/1_financial_market_6097.pdf
3. Financial Markets Leonardo da Vinci programme project https://www.bcci.bg/projects/latvia/pdf/7_Financial_markets.pdf
4. Capital Markets, Fifth Edition Institutions, Instruments, and Risk Management By Frank J. Fabozzi https://mitpress.mit.edu/books/capital-markets-fifth-edition
5. Guide to Financial Markets Why they exist and how they work https://media.economist.com/sites/default/files/pdfs/Guide_to_Financial_Markets_6e.pdf
6. Jansen S. Machine Learning for Algorithmic Trading: Predictive Models to Extract Signals from Market and Alternative Data (2020) https://helion.pl/ksiazki/machine-learning-for-algorithmic-trading-predictive-models-to-extract-signals-from-market-and-alter-stefan-jansen,e_2af0.htm?srsltid=AfmBOoqsBXGIai42y3m2D14WPvuv1HCSTwUGOoP8SraLzcNR53IBldfE
7. Scholkopf B., Papadopoulos P., Arribas I.P., Kersting K. Artificial Intelligence in Finance: A Comprehensive Overview (2019) https://www.researchgate.net/publication/377563906_Artificial_intelligence_in_Finance_a_comprehensive_review_through_bibliometric_and_content_analysis
8. Hacker P., Lianos I. Regulating Blockchain: Technological Innovation and the Challenge to Law (2020) https://global.oup.com/academic/product/regulating-blockchain-9780198842187
9. Van Hijfte, Stijn. (2020). Decoding Blockchain for Business: Understand the Tech and Prepare for the Blockchain Future. https://link.springer.com/book/10.1007/978-1-4842-6137-8

PSYCHOLOGICAL TECHNOLOGIES OF BUSINESS CONSULTING				
The course aims to provide students with a system of scientific concepts and fundamental understanding of professional activities in the field of business consulting. This includes uncovering and mastering the psychological factors influencing the effectiveness of managerial consulting, the psychological aspects of personnel support in consulting activities, the peculiarities of implementing business consulting processes and technologies, as well as identifying the psychological components of preparatory processes in consulting. The course programme is designed to equip students with practical tools and knowledge for implementing psychological technologies in business consulting.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	4 / elective	Serhii Dubinskyi, PhD, Associate Professor	120 hours (18 h. lecture, 14 h. practical classes, 88 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:		**Teaching methods, teaching and learning activities**		**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and effectively apply scientific, methodological and analytical tools for business consulting in uncertain and dynamic environments. 2) Diagnose organisational challenges and substantiate appropriate problem-solving methods within the framework of business consulting. 3) Develop advanced psychological and communication competencies, as well as decision-making skills to formulate, justify and implement management solutions in unpredictable conditions, considering legal, ethical and social responsibility requirements. 4) Facilitate and manage effective communication within teams, with executives and across diverse professional groups in both domestic and international contexts. 5) Exhibit leadership qualities, collaborate effectively in teams, engage		Presentations, thematic discussions, guest speakers (experts in the field of smart cities). Seminar dialogues, discussion of situational tasks, analysis of real-world cases. Implementation of individual and group projects, analysis of real-world cases. Peer teaching, discussion of practical case studies, problem-based inquiry method utilizing the Internet. Seminar dialogues, discussion of situational tasks, analysis of real-world cases. Implementation of individual and group projects, analysis of real-world cases. Presentations, thematic discussions, guest speakers (experts in the field of smart cities). Peer teaching, discussion of practical case studies, problem-based inquiry method using the Internet		Participation in situational task discussions, project implementation, tests (CAS) Oral responses to questions, solving/explaining practical case studies, and presentation evaluation, group work assessment (CAS) Oral responses to questions, solving/explaining practical case studies, and presentation evaluation (CAS) Oral responses to questions, solving/explaining practical case studies, and presentation evaluation (CAS) Oral responses to questions, solving/explaining practical case studies, and presentation evaluation, oral presentation of discussion insights (CAS)

with stakeholders and apply psychological influence to drive professional solutions. 6) Commit to continuous professional development and apply effective time management strategies in a business consulting environment.	Practical: Seminar dialogues, discussion of situational tasks, analysis of real-world cases. Implementation of individual and group projects, analysis of real-world cases.	Participation in situational task discussions, tests, and case analysis (CAS) Participation in situational task discussions, project implementation, tests, and case analysis (CAS)

Assessment

Assessment Criteria
The final grade consists of 100% continuous assessment:
80% for completing individual practical tasks.
20% for final semester control (tests).
Evaluation Criteria:
7 practical tasks: Each worth 10 points for a total of 70 points.
20 test questions: Worth a total of 20 points.
Individual work: Worth 10 points.
Module 1 (maximum 30 points):
Students earn points for Module 1 by completing 3 practical tasks, each worth 10 points.
Module 2 (maximum 40 points):
Students earn points for Module 2 by completing 4 practical tasks, each worth 10 points.
Assessment Criteria for Tasks:
9–10 points: The student completes the task correctly, demonstrating a deep understanding of the material. Detailed conclusions are provided.
7–8 points: The task is completed with minor inaccuracies that do not affect the final result. General conclusions are provided.
5–6 points: The student demonstrates insufficient understanding of the material. The task is partially or generally completed, and only partial conclusions are provided.
3–4 points: The student demonstrates a lack of understanding of the material, significant errors are present, and no conclusions are provided.
1–2 points: The student demonstrates no understanding of the material. The task is incomplete, and conclusions are absent.
0 points: The task is not completed by the student at all.

Content

Topic 1. Fundamentals of Business Consulting: Goals, Role, and Ethics
Topic 2. Client Psychology: Typology, Motivation, Needs
Topic 3. Communication Skills of a Business Consultant
Topic 4. Psychological Diagnostics in Business Consulting
Topic 5. Working with Leaders and Managers
Topic 6. Psychological Aspects of Managing Change in Business
Topic 7. Psychological Analysis and Team Development
Topic 8. Psychological Impact of Stress and Burnout in Business
Topic 9. Business Consulting Effectiveness: Evaluation and Development

Literature

Ukrainian track

Compulsory reading

1. Andreeva, H.M. "Social Psychology in Organizations." Kyiv: Akademvydav, 2019. 368 pages.
2. Groshev, S.A., Ivanova, A.V. "Fundamentals of Business Psychology." Kharkiv: Pravo, 2018. 288 pages.
3. Illarionov, O.O., Levchuk, L.P. "Psychology of Management: Theory and Practice." Kyiv:

Znannya, 2020. 320 pages.

4. Konstantinov, Y.A. "Psychological Counseling: Methods and Techniques." Lviv: Svit, 2017. 276 pages.

Recommended reading

1. Howard, M. "Coaching for Effective Management." Kyiv: Osnovy, 2020.
2. Boyko, V.V. "Emotional Competence in Business." Kharkiv: Ranok Publishing House, 2021.
3. Litvak, M. "Conflict Psychology and Management." Kyiv: Ariy, 2020.
4. Carnegie, D. "How to Win Friends and Influence People." Kharkiv: Family Leisure Club, 2018.
5. "Coaching: Theory and Practice": Study Guide / Edited by T.S. Lebedynska. Lviv: Lviv University Publishing, 2021.

English track

Compulsory reading

1. Rogers, C. "Client-Centered Therapy." Kharkiv: Vivat, 2021. 240 pages.
2. "Coaching as a Modern Tool for Psychological Support in Business: A Study Guide" / Edited by I.S. Smyrnov. Kyiv: Publishing House "Kyiv-Mohyla Academy," 2019. 220 pages.
3. Chernyshenko, O.V. "Motivation in Business: Psychological Foundations." Dnipro: Dniproknyha, 2021. 298 pages.
4. Normative acts and regulations on ethics and standards of business consulting. URL: https://zakon.rada.gov.ua

Recommended reading

1. Goldsmith, M. "What Got You Here Won’t Get You There: How Successful People Become Even More Successful." Kyiv: KM-Books, 2018.
2. Whitmore, J. "Coaching for Performance." London: Nicholas Brealey Publishing, 2017.

Kets de Vries, M.F.R. "Leadership Mystique: Leading Behavior in the Human Enterprise." London: Pearson Education, 2017.

PRACTICAL PSYCHOLOGY: POST-TRAUMATIC STRESS RECOVERY TECHNIQUES

The course aims is to equip students with the skills to systematise and effectively apply psychological knowledge to assist individuals dealing with traumatic life situations. It introduces students to modern concepts of biological and psychological stress, its effects on mental and physical health and the patterns of its development. Students will also explore factors that influence whether stress turns into eustress (positive stress) or distress (negative stress), the characteristics of professional stress and various methods of self-regulation and psychotherapy for managing stressful conditions. The course covers the manifestations of psychotraumatic psychological processes and the mechanisms through which stress affects behavioral and emotional responses.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	4 / elective	Inesa Harkusha, PhD, Associate Professor	120 hours (18 h. lectures, 14 h. practical classes, 88 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select, and integrate additional scientific, methodological and analytical tools for effective management in contexts affected by post-traumatic stress.	Lecture, seminar, discussion based on lecture materials and studied literary sources	Class participation and engagement, oral answers to questions, quizzes and tests (CAS)
2) Diagnose organisational challenges and substantiate problem-solving methods from a psychological perspective.	Problem lecture, presentations, role-playing games	Independent work, oral answers to questions, peer assessment (CAS)
3) Develop advanced decision-making competencies to formulate, justify and ensure the implementation of management strategies in the process of overcoming post-traumatic stress while adhering to legal, ethical and social responsibility standards.	Discussion of problem situations, cases	Independent work, case study report (CAS)
4) Plan, facilitate and sustain effective communication with individuals navigating post-traumatic stress recovery.	Lecture, seminar, implementation of projects	Independent research and reflection, oral answers to questions, evaluating project work (CAS)
5) Communicate proficiently in professional and academic environments, demonstrating fluency in both national and foreign languages.	Presentation, case method, educational dialogue	Class participation and engagement, solving case problems (CAS)
6) Exhibit leadership qualities, collaborate within teams, engage with individuals under stress and apply psychological influence to enhance professional effectiveness.	Presentation, case method, modeling	Independent work, problem solving exercises (CAS)
7) Commit to continuous professional development and implement effective time	Student reports -	Oral answers to

management strategies within the chosen field of expertise. 8) Demonstrate the ability to delegate authority and manage responsibilities effectively in stress-related and recovery contexts. 9) Make informed and adaptive decisions in change management, including in post-traumatic stress and post-war recovery scenarios, while identifying key influencing factors and aligning with sustainable development goals.	individual and in groups, presentations, project work, Internet search Independent work, Presentation, essay on the film "PTSD" modelling	questions, solving problems (problem situations), group participation assessment (CAS) Oral answers, case study (case study presentation), evaluating presentations (CAS)
Assessment		
Final grade is a result of 100% continuous assessment: 70% completion of individual practical tasks (cases, mini-cases) 30% final semester control (tests) Assessment criteria: 7 practical works are performed, each worth 10 points – 70 points, 20 test questions – 20 points; 2 open questions – 10 points. Module 1 (max – 30 points). Points earned upon completion of 3 practical tasks, each worth 10 points. Module 2 (max – 40 points). Points earned upon completion of 4 practical tasks, each worth 10 points. Task assessment criteria: 9-10 points – the student has completed the task correctly, demonstrates a deep understanding of the material. All detailed conclusions have been made. 7-8 points – the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions have been made. 5-6 points – the student demonstrates insufficient understanding of the material. The task has been completed partially or in general terms. The student has made partial conclusions. 3-4 points - the student demonstrates ignorance of the material, the task contains significant errors, no conclusions. 1-2 points - the student demonstrates ignorance of the material. The task is not completed, and there are no conclusions. 0 points - the task is not fully completed by the student.		
Content		
Module 1. Stress and psychology of traumatic situations Topic 1. Stress in the historical dimension. Topic 2. Stress and happiness. Topic 3. Features of psychological stress. Topic 4. Political and religious guidelines. Topic 5. Psychological trauma. Concept and types of traumatic situations. Module 2. Post-traumatic stress disorder (PTSD) and recovery techniques. Topic 6. Post-traumatic stress disorder as a consequence of a traumatic situation. Topic 7. Psychological reactions of a person to traumatic life events. Topic 8. Relationship of the concepts of stress, traumatic and post-traumatic stress disorder Topic 9. Features of psychotherapeutic work with clients who have experienced a traumatic situation. Topic 10. Directions of psychotherapy in working with clients who have experienced a traumatic situation. Topic 11. Emergency psychological assistance in extreme situations.		
Literature		

Ukrainian track

Compulsory reading

1. Грандт В.В. Психологія травмуючих ситуацій: навчальний посібник для здобувачів вищої освіти другого магістерського рівня за освітньо-професійною програмою «Психологія». Запоріжжя: ЗНУ, 2023. 110 с.
2. Застосування психотерапевтичних технологій у наданні допомоги постраждалим з проявами посттравматичного стресового розладу: практичний посібник / Я. М. Омельченко, З.Г. Кісарчук, Т.С. Гурлєва, Г. П. Лазос [та ін.]; за ред. Я.М. Омельченко. Київ: Інститут психології імені Г.С. Костюка НАПН України, 2023. 256 с.
3. Б'юзен Тоні Мапа думок. Докладний посібник із вивчення і застосування найпотужнішого інструмента мислення у світі; переклад з англ. Олени Замойської. Львів : Видавництво Старого Лева, 2021. 224 с.
6. Важливі навички в періоди стресу: ілюстроване керівництво: Копенгаген: Європейський регіональний офіс Всесвітньої організації охорони здоров'я; 2021. 127 с.

Recommended reading

1. Гаркуша І.В., Кайко В.І. Детермінанти стійкості військових ЗСУ до бойового стресу. Вісник Дніпропетровського університету імені Альфреда Нобеля. Серія «Педагогіка і психологія». Педагогічні науки. Дніпро: ТОВ «Роял Принт», 2019. Вип. 1(17).268 с. С. 61-70. URL: http://pedpsy.duan.edu.ua/images/PDF/2019/1/9.pdf
2. Гаркуша І.В., Кайко В.І. Маційовська С.М. Stress resistance as a psychological feature of the military. Annali d'Italia (Italy's scientific journal). №5. VOL. 2. Florence, Italy. 2020. P. 49-54. URL: https://issuu.com/publish-itadiana/docs/annali_d_italia__5_2020_part_2
3. Гаркуша І.В., Дубінський С.В. Щодо проблеми життєвої кризи особистості. Вісник університету імені Альфреда Нобеля. Серія «Педагогіка і психологія». Педагогічні науки. Дніпро: ТОВ «Роял Принт», 2021. № 1 (23). 244с. С. 49-59
4. Гаркуша І., Рябуха Н. Тривожність як індивідуальна властивість особистості. The 5th International scientific conference "Modern and global methods of the development of scientific thought" Florence, Italy. International Science Group. 2022. p. 513. https://salo.li/33B86b5
5. Гаркуша І.В., Дубінський С.В. Особливості життєвої ситуації вимушених переселенців під час озброєного конфлікту. Вісник УАН. Серія «Педагогіка і психологія». Педагогічні науки. Дніпро: ТОВ «Роял Принт», 2023. № 1 (25). 224 с. С.131-140.
6. Гаркуша І.В., Дубінський С.В. Фактори соціально-психологічної адаптації та тривожність біженців під час війни. Alfred Nobel University Journal of Pedagogy and Psychology. 2023. № 2 (26). 208 с. С. 110-121.

English track

Compulsory reading

1. Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society 1st Edition by Bessel A. van der Kolk (Editor), Alexander C. McFarlane (Editor), Lars Weisaeth (Editor) Paperback: Publisher: The Guilford Press pages ISBN-10 : 9781572304574 596

Recommended reading

1. Ye. Ishchenko, Yu. Chystovska, O. Vovchenko, I. Harkusha, H. Voshkolup. The Role of Emotional Intelligence in the Rehabilitation of the Former Prisoners of War. International Journal of Statistics in Medical Research, 2023, 12, 240-248. https://v.gd/raxJLb
2. Bradshaw, D., & Muldoon, O.T. (2019). Shared experiences and the social cure in the context of a stigmatised identity. British Journal of Social Psychology, 59(1), 209-226. doi:10.1111/bjso.12341
3. Haslam C., Cruwys T., Chang M.X.-L., Bentley S.V., Haslam S.A., Dingle G.A., Jetten J. (2019). Groups 4 health reduces loneliness and social anxietyin adults with psychological distress: Findings from a randomized controlledtrial. Journal of Consulting and Clinical Psychology, 87, 787–801.

SELF-MANAGEMENT (TIME AND STRESS MANAGEMENT)				
The course aims to equip master's students with practical skills for effective self-management by teaching modern time management and stress management techniques. This will enhance their personal productivity, improve resilience to professional and life challenges, promote a balanced psycho-emotional state and support successful professional and personal growth.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	4 / elective	Olha Lebid, Doctor of Science, Professor	120 hours (18 h. lectures, 14 h. practical classes, 88 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:		**Teaching methods, teaching and learning activities**		**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select, and effectively apply scientific, methodological and analytical tools for managing time and stress in unpredictable conditions.		Case analysis, discussions, practical tasks, group work and project tasks, self-reflection and self-assessment methods, interactive lectures using digital platforms, individual project		Testing, case analysis, self-reflection and reflective tasks, practical tasks, discussions and group presentations, individual project defense (CAS)
2) Diagnose organisational challenges and substantiate appropriate problem-solving methods in high-stress environments.		Case analysis, discussions and discussions, work in small groups, independent work and reflection		Testing, practical tasks, assessment of participation in group work and presentation of solutions, individual project defence, reflection with analysis of problems and solutions (CAS)
3) Design and implement effective management systems for organisations operating under stress.		Case analysis, group discussion, independent work on developing development strategies		Case analysis, assessment of participation in group work, individual project defence (CAS)
4) Justify and oversee project management, generate and develop entrepreneurial ideas while ensuring adherence to time management principles.		Project learning, interactive lectures, case analysis, brainstorming, individual projects		Project performance assessment, case analysis, assessment of participation in group work, individual project defence (CAS)
5) Plan, facilitate and maintain effective communication within teams, across diverse professional groups and in international settings, using time and stress management techniques.		Discussion of cases and analysis of situations, discussions, group projects		Activity assessment during practical classes, assessment of group project performance, assessment of communication skills through the performance of individual tasks (CAS)
6) Communicate proficiently in both professional and academic		Presentations and speeches, discussions, writing analytical		Activity assessment during discussions and

environments, demonstrating fluency in national and foreign languages.	papers	deliberations, assessment of individual and group presentations, assessment of analytical work (CAS)
7) Commit to continuous professional development while effectively managing time and stress to enhance personal and professional growth.	Independent planning and analysis of time, work with goals and objectives, reflection and self-analysis, group discussions, case analysis, individual and group projects	Assessment of time management tasks, analysis of individual tasks (self-planning, reflection), assessment of participation in group discussions, individual project defence (CAS)
8) Make well-founded decisions in change management under time constraints and stressful conditions, including uncertainty and post-war recovery, while identifying key influencing factors and aligning with sustainable development goals.	Interactive lectures, case method, project method, brainstorming, analysis of decision-making matrices, group discussions	Testing, case analysis, self-reflection tasks, assessment of participation in group discussions, defence individual project (CAS)

Assessment	
Final grade is a result of 100% continuous assessment: 56% – practical tasks and activity in the practical classes 24% – module work 1, module work 2 20% – individual project	
Evaluation criteria	
7 practical tasks, each worth 8 points – 56 points Module 1 (max 36 points). Points for the 1st module are received by the master's student if they complete: 3 practical tasks, each of which is estimated at max 5 points; active participation in the practical classes (max 3 points); module work 1 (max 12 points) Module 2 (max 44 points). Points for the 2nd module are received by the master's student if they complete: 4 practical tasks, each of which is estimated at max 5 points; active participation in the practical classes (max 3 points); module work 2 (max 12 points)	
Criteria for assessing practical tasks	
0–1 points	the task is partially completed with noticeable omissions and significant shortcomings; the analysis is weak, without logical connections and examples; the task is standard, without a creative approach, unstructured and difficult to understand; incorrectly used terms, which indicates a misunderstanding of the principles of the course
2–3 points	the task is completed with shortcomings and omissions; the analysis is partially logical, but needs clarification; the argumentation is not deep enough; there are creative elements, but not all ideas are original; the task is structured, but with minor problems in organization; the terms are used correctly, but there are inaccuracies
4–5 points	the task is completed completely, clearly and in detail; the analysis is logical, deep and well-argued, with examples; the task is original, creative, has a clear structure and is easy to understand; the correct terms are used
Criteria for assessing activity in practical classes	
0–1 points	low activity during the class, participation is minimal or absent; during the discussion of the topic, indifference, lack of interest are shown, no questions are asked; no examples or personal observations are provided
2 points	moderate activity, participation in the discussion and performance of practical tasks; speeches are rare but with elements of reflection and interpretation; questions are raised,

	but they are limited to the topic of the class; examples are used, but not always specific or complete
3 points	high activity, regular participation in all aspects of the class; initiative is shown in discussions, clear and reasoned answers are provided; questions are asked that contribute to the development of the topic; lively interaction with the teacher and other students is maintained; various examples and own research are used, understanding of the material is demonstrated
Criteria for assessing module work	
Test part	
0–6 points	contains 12 test questions, each of which is worth 0.5 points for a correct answer
Practical part (Module control work 1)	
0–1 points	the task is performed superficially or not performed; the analysis of the working day is not carried out or is performed fragmentarily (for example, only some tasks are described without specifying the time); the division into categories of the Eisenhower Matrix is absent or there are significant errors in defining the categories; ways to improve efficiency are not proposed or are irrelevant; there is no logic and justification for actions
2–3 points	the analysis of the working day is performed, but not all tasks are indicated or the time is distributed with inaccuracies; the Eisenhower matrix is used, but there are minor errors in the distribution of tasks into categories; three ways to improve efficiency are proposed, but the justification is insufficient or the recommendations are general; the work demonstrates a basic understanding of the topic, but does not take into account all the requirements of the task
4 points	the analysis of the working day is detailed, all tasks are described with an accurate distribution of time; the division of tasks into categories in the Eisenhower Matrix is performed correctly, with a clear understanding of urgency and importance; the three ways to improve efficiency are justified, practical and creative; the work demonstrates a high level of understanding of the material, structure and logic; the design was completed in accordance with the requirements, without errors
Practical part (Module control work 2)	
0–1 points	stress factors are not defined or defined very generally; the proposed techniques do not correspond to the task or are ineffective for overcoming stress; the schedule for implementing the techniques is not drawn up, or is very imprecise, without specific dates or times for applying the techniques; the logic and connection between parts of the task are absent or unclear
2–3 points	stress factors are defined, but without specific examples or not all aspects are taken into account; the proposed techniques are correct, but the justification for their choice is incomplete or general; the schedule for implementing the techniques contains some shortcomings (for example, the schedule is not entirely clear or without specific deadlines); the work demonstrates a general understanding of the topic, but does not take into account all the details and requirements.
4 points	stress factors are clearly defined with specific examples, which allows you to understand what exactly causes stress; the proposed techniques are relevant and effective for overcoming stress, each technique is clearly justified; the schedule for implementing the techniques is detailed, with specific time intervals and phased implementation into the daily routine; the work has a logical sequence, clear justification and demonstrates a deep understanding of the topic
Criteria for assessing the individual project “Development of a personal self-management strategy: effective time and stress management”	
0–4 points	the project is superficial, does not meet the task or is partially completed; lack of analysis of its own effectiveness, the strategy is unclear or not substantiated; the implementation diary and conclusions are not presented, the presentation and design do not meet the

	requirements
5–9 points	the main aspects of the project are considered, but with noticeable shortcomings in the analysis and justification; the time and stress management strategy is not detailed enough; the diary is kept partially, the conclusions are superficial, the presentation is designed with minor shortcomings
10–14 points	the project covers key aspects of the topic, but partially lacks depth or detail; the analysis of its own effectiveness and the development of the strategy are carried out at the proper level; the diary is kept systematically, but with some gaps; the conclusions are well-reasoned, the design meets the basic requirements
15–17 points	the project is clear, comprehensive, with full justification of each stage; the time and stress management strategy is developed in detail, the diary is structured; the conclusions are logical, the recommendations are useful and practical; the presentation is well-designed and attractive.
18–20 points	the project is implemented at a high level with a creative approach; in-depth analysis of own effectiveness, development of an innovative and comprehensive strategy; implementation diary is detailed, conclusions are clear and well-founded; presentation is professional, visually attractive and fully meets the requirements

Content

Topic 1. Introduction to self-management: meaning and key concepts
Topic 2. Basics of time management and principles of time management
Topic 3. Time management techniques as tools for increasing productivity
Topic 4. Basics of stress management: concept, causes and consequences of stress
Topic 5. Methods of overcoming stress through relaxation techniques and emotional stability
Topic 6. Self-reflection and management of resources, energy, attention and motivation
Topic 7. Work-life balance to prevent burnout
Topic 8. Digital tools for self-management: overview and application
Topic 9. Self-management in crisis conditions: adaptability and resilience

Literature

Ukrainian track

Compulsory reading

1. Василик С.К., Майстренко О.В., Немашкало К.Р. та ін. Самоменеджмент: навч. посіб. Харків: ХНЕУ ім. С. Кузнеця, 2020. 150 с.
2. Леськів Г., Левків Г., Бліхар М., Гобела В., Подра О., Коваль Г. Самоменеджмент: навч. посіб. Львів: Львівський державний університет внутрішніх справ, 2021. 280 с.
3. Лугова В.М., Голубєв С.М. Основи самоменеджменту та лідерства: навч. посіб. Харків: ХНЕУ ім. С. Кузнеця, 2019. 212 с.
4. Психологія стресу та стресових розладів: навч. посіб. / Уклад. О. Ю. Овчаренко. К.: Університет «Україна», 2023. 266 с/
5. Тайм-менеджмент: навч. посіб. для закладів вищ. освіти / уклад. Н.М. Малярчук. Умань: Сочінський М.М., 2024. 175 с.

Recommended reading

1. Лугова В.М., Голубєв С.М. Основи самоменеджменту та лідерства: навч. посіб. Харків : ХНЕУ ім. С. Кузнеця, 2019. 212 с.
2. Самоменеджмент: навч. посіб. [для здобувачів вищ. освіти першого (бакалавр.) рівня денної та заочної форм навч. за спец. 073 «Менеджмент», ОП «Менеджмент організацій і адміністрування»] / Укладач: З.М. Шильнікова; ДЗ «ЛНУ імені Тараса Шевченка››. Старобільськ: ДЗ «ЛНУ імені Тараса Шевченка››, 2022. 224 с.

English track

Compulsory reading

1) Campbell G. Time Management: The 8 Laws of Time Management. N.Y.: CreateSpace Independent Publishing Platform, 2017. 68 p.

2) Davis R. Time Management: How to Find the Time and Motivation to be Productive and Get Things Done. N.Y.: CreateSpace Independent Publishing Platform, 2017. 66 p.

Recommended reading

1. Godefroy Ch. The Complete Time Management System. N.Y.: Positive Club, 2016. 282 p.
2. Self-management guide book Giving you control over your day-to-day support. URL: https://www.acc.co.nz/assets/im-injured/self-management-guide-acc6995.pdf
3. Yarbro J., Ventura M. Skills for Today: What We Know about Teaching and Assessing Self-Management, 2018. URL: https://www.pearson.com/content/dam/one-dot-com/one-dot-com/global/Files/efficacy-and-research/skills-for-today/Self-Management-FullReport.pdf
13 додатків для тайм-менеджменту, які збільшать вашу продуктивність. https://kam.itstep.org/blog/13-time-management-applications-that-will-increase-your-productivity
Biggggidea (українська платформа соціальних інновацій). https://biggggidea.com/
Mental Health Foundation. https://www.mentalhealth.org.uk/
Self-management Skills. https://ncert.nic.in/vocational/pdf/kees102.pdf
The American Institute of Stress. https://www.stress.org/
The Pomodoro® Technique. https://www.pomodorotechnique.com/
Базові навички планування та самоменеджмент. GlobalLogicUkraine. YouTube. https://www.youtube.com/watch?v=9Buc9ODP_9A
Використовуй час правильно: 20 корисних програм та додатків. https://rivne1.tv/news/80378-vikoristovuy-chas-pravilno-20-korisnikh-prohram-ta-dodatkiv
ВУМ online. https://vumonline.ua/
Гурт https://gurt.org.ua/
Курс «The Science of Happiness at Work». edX. https://www.edx.org/learn/happiness/university-of-california-berkeley-the-foundations-of-happiness-at-work
Курс «Time Management Fundamentals». Linkedin. https://www.linkedin.com/learning/time-management-fundamentals-14548057
Курс «Time Management Skills». Mind Tools. https://www.mindtools.com/c3vl26l/time-management
Курс «Work Smarter, Not Harder: Time Management for Personal & Professional Productivity». Coursera. https://www.coursera.org/learn/work-smarter-not-harder
Курс «Психологія стресу та способи боротьби з ним». Prometheus. https://prometheus.org.ua/prometheus-free/psychology-of-stress/
Лекція «Тайм-менеджмент і прокрастинація». КМЦ – Київський молодіжний центр. YouTube: https://www.youtube.com/watch?v=UNxhQ8IOCtM
Лекція «Як встигати все? Тайм-менеджмент | Саморозвиток». Школа онлайн – Українська Школа Майбутнього. YouTube. https://www.youtube.com/watch?v=ZpyfeFNFsV0
Ловці часу: 10 корисних додатків для ефективного тайм-менеджменту. https://budni.robota.ua/career/lovtsi-chasu-10-korysnyh-dodatkiv-dlya-efektyvnoho-taym-menedzhmentu
Кращі планувальники: 10 додатків для тайм-менеджменту. https://www.moyo.ua/ua/news/luchshie_planirovshchiki_10_prilozheniy_dlya_taym-menedzhmenta.html
Центр персонального розвитку у Вроцлаві. https://ua.crp-wroclaw.com/

MANAGEMENT OF LOGISTIC INFRASTRUCTURE IN CITIES AND REGIONS

The course aims to provide students an in-depth understanding of the logistics infrastructure required to support urban and regional development. Students will explore the principles, strategies and technologies involved in managing the movement of goods and services within cities and regions. The course will cover urban freight systems, transportation planning, infrastructure design and policy-making.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	3	4 / elective	Volodymyr Momot, Doctor of Science, Full Professor	120 h. (26 h. lectures, 14 h. practical classes, 80 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and integrate additional scientific, methodological and analytical tools for managing logistics infrastructure under unpredictable conditions. 2) Design and implement effective management systems for the logistics infrastructure of a city or region. 3) Communicate professionally and academically in both the national and foreign languages, effectively engaging with stakeholders at the city and regional levels. 4) Exhibit leadership qualities, collaborate within teams, engage with stakeholders and influence behaviour to ensure efficient logistics infrastructure management. 5) Demonstrate the ability to delegate authority and oversee the material and technical infrastructure of an organization, city or region.	Lectures: presentations, thematic discussions, invited guests (experts in the field of smart cities), individual projects Peer teaching lecture, discussion of practical case studies, problem-solving method using the Internet Practical classes: seminar dialogue, analysis of real cases, Practical classes: individual and group projects, analysis of real cases, work with software. Peer teaching lecture, discussion of practical case studies, problem-solving method using the Internet	Participation in case study discussions, projects, tests, case analysis (CAS) Oral answers to questions, solution/explanation of practical case studies, evaluation of presentations (CAS) Participation in case study discussions, projects, tests, case analysis (CAS) Participation in case study discussions, case study analysis (CAS)

Assessment

Final grade is a result of 100% continuous assessment:
80% completion of individual practical tasks
20% final semester control (tests)
Assessment criteria:
8 practical tasks, each worth 10 points - 80 points, 20 test questions - 20 points.
Module 1 (max - 30 points). Points earned upon completion of 3 practical tasks, each worth 10 points.
Module 2 (max - 50 points). Points earned upon completion of 5 practical tasks, each worth 10 points.

Tasks assessment criteria:
9-10 points - the student has completed the task correctly, demonstrates a deep understanding of the material. All detailed conclusions have been made.
7-8 points - the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions are made.
5-6 points - the student demonstrates insufficient understanding of the material. The task is completed partially or in general terms. The student made partial conclusions.
3-4 points - the student demonstrates ignorance of the material, the task contains significant errors, conclusions are missing.
1-2 points - the student demonstrates ignorance of the material. The task is not completed to the end, conclusions are missing.
0 points - the task is not fully completed by the student.

Content

Topic 1. Introduction to Urban and Regional Logistics.
Topic 2. Urban Freight Systems.
Topic 3. Transportation Planning and Policy
Topic 4. Infrastructure Design and Development.
Topic 5. Sustainable Logistics Practices.
Topic 6. Data and Technology in Logistics
Topic 7. Last Mile Logistics
Topic 8. Regional Logistics and Supply Chain Management
Topic 9. Logistics Infrastructure and Urban Development
Topic 10. The Future of Logistics Infrastructure of the City and Region Management.

Literature

Ukrainian track

Compulsory reading

1. Бортнік, С. (2019). Формування та розвиток логістичної інфраструктури України в контексті євроінтеграції. Bulletin of Sumy National Agrarian University, (3(81), 45-50. https://doi.org/10.32845/bsnau.2019.3.8

Recommended reading

1. Гнедіна К.В., Нагорний П.В. Сучасний стан логістичної інфраструктури прикордонних регіонів в умовах воєнного часу. Економіка та суспільство, Випуск # 65 / 2024. https://economyandsociety.in.ua/index.php/journal/article/download/4379/4309/

English track

Compulsory reading

1. Marcucci, E., Gatta, V., & Le Pira, M. (2023). Handbook on City Logistics and Urban Freight. Edward Elgar Publishing Limited.
2. Boin, R. (2023). Infrastructure Technologies: Challenges and solutions for smart mobility in urban areas by Riccardo Boin, ... et al.. McKinsey & Company.
3. Myerson P. (2023). Lean supply chain and logistics management. Mcgraw-hill education.
4. Mangan J.L., Chandra C.A. (2025). Global Logistics and Supply Chain Management. John Wiley & sons.

Recommended reading

1. Taniguchi, E., & Thompson, R. G. (2015). City Logistics: Mapping the future. CRC Press.
2. https://www.saintleo.edu/about/stories/blog/ultimate-list-of-101-resources-for-logistics-students
3. https://www.studocu.com/en-za/document/iie-rosebank-college/logistics-management-3c-managing-logistics-across-the-supply-chain/city-logistics-chapter-16/109347787
4. https://elearning.ndu.edu.ng/content/Resources/Documents/global%20logistics%20and%20supply%20chain%20management.pdf

INSTITUTIONAL AND LEGAL SUPPORT FOR SMART CITY DEVELOPMENT				
The course aims is to provide knowledge about cross-cutting themes (the use of AI in urban planning, energy communities for smart cities, liability for the operation of automated public transport). The trade law perspective facilitates a broader understanding of smart city governance, which includes underexplored 'global' regulatory dimensions concerning the interaction between local governments and foreign companies.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	2	3 / elective	Svitlana Fedulova Doctor of Science (Economics), Full Professor, Master of Laws	90 hours (16 h. lectures, 12 h. practical classes, 62 h. self-directed learning)
Learning outcomes On completion of the course, students will be able to:			**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically analyse, select and effectively apply scientific, methodological and analytical tools for managing smart cities in dynamic regulatory environments and unpredictable conditions.			Lectures, case study analysis	Class participation and discussions, case study reports (CAS), final test (FAS)
2) Exhibit leadership qualities, collaborate within teams, engage with stakeholders and influence behaviour to address professional challenges in smart city management amid regulatory changes and institutional transformations.			Lectures, role-playing and simulations, leadership workshops	Teamwork evaluation, class discussions and peer assessment (CAS), final test (FAS)
3) Develop and implement organisational and business strategies that align with the smart city concept, regulatory frameworks and institutional support to enhance city or regional branding and optimise human capital management.			Lectures, strategic planning workshops, business case analysis	Case study reports, strategic project development milestones (CAS), final test (FAS)
4) Make well-founded decisions on change management in smart city development, considering regulatory uncertainty, post-conflict recovery, key influencing factors and sustainable development goals.			Lectures, seminars, discussions, scenario analysis workshops	Participation in the discussion, scenario-based assignments, presentation (CAS), final test (FAS)
Assessment				
The final grade is given on a 100-point scale, including 40 points for the test and 60 points for the work in the semester. 60 points for work in the semester: 20 points for an individual assignment (presentation); 40 points for discussions Assessment criteria: a) individual presentation 16-20 points: The student demonstrates excellent understanding of the material, mastery of the				

content and depth of search. The student uses modern scientific and information literature and databases. The work contains elements of novelty and reflects the author's own point of view. The work is designed in accordance with the requirements.
11-15 points: The student understands the material well and demonstrates a good mastery of the content and depth of search. Modern information sources were used to perform the task. There are minor violations of the requirements in the design of the task.
6-10 points: The structure is somewhat logical, but the ideas and concepts may not always be clearly or effectively expressed. The task may lack coherence and/or accuracy in certain areas.
1-5 points: The task is poorly structured, disorganised, inaccurate and/or confusingly expressed. There are major omissions.
b) participation in discussions
For participating in the discussion, the student will receive points from the total number specified in the course map for this type of assessment:
81-100%: The discussion is conducted correctly. The student demonstrates excellent mastery of the educational material and expresses and successfully argues his/her position.
51-80%: The student demonstrates an understanding of the educational material, but some inaccuracies are noticed.
21-50%: A basic understanding of the material, but with significant gaps or omissions.
1-20 %: A lot of mistakes, with little to no understanding of the material's context.
c) test papers
The criteria for the test assignment are written on the test card.

Content

Topic 1. Institutional and Legal Framework for the Implementation of the Concept of 'Smart Cities'
Topic 2. "Smart Cities": Legal Regulation and Potential of Development
Topic 3. Smart Cities and Law, E.Governance and Rights: Contributing to the Definition and Implementation of a Global Strategy for Smart Cities
Topic 4. Urban Planning Law for Climate Smart Cities
Topic 5. Smart Law for Smart Cities

Literature

Compulsory reading

1. Constitution of Ukraine of 28 June 1996. https://zakon.rada.gov.ua/laws/
2. Charter of the United Nations of 1945. http://www.un.org.ua/images/UN_Charter_Ukrainian.pdf
3. Final Act of the 1975 Conference on Security and Cooperation in Europe. https://zakon.rada.gov.ua/laws/show/994_055
4. Athens Convention on the Carriage of Passengers and their Luggage by Sea, 1974: https://zakon.rada.gov.ua/laws/show/995_094
5. The Washington Convention on the Settlement of Investment Disputes between States and Nationals of Other States, 1965. https://zakon.rada.gov.ua/laws/show/995_060
6. General Agreement on Tariffs and Trade 1947. https://zakon.rada.gov.ua/laws/show/995_264
7. European Energy Charter 1991. https://zakon.rada.gov.ua/laws/show/995_056
8. European Convention on International Commercial Arbitration 1961. https://zakon.rada.gov.ua/laws/show/995_069
9. European Convention on the Immunity of States of 1972. https://zakon.rada.gov.ua/laws/show/994_060
10. Law of Ukraine 'On Foreign Economic Activity' of 16 April 1991. https://zakon.rada.gov.ua/laws/show/959-12
11. Law of Ukraine 'On International Treaties of Ukraine' of 29 June 2004. https://zakon.rada.gov.ua/laws/show/1906-15
12. UN Convention on Contracts for the International Sale of Goods 1980. https://zakon.rada.gov.ua/laws/show/995_003
13. The UN Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families, 1990. https://zakon.rada.gov.ua/laws/show/997_j82

14. United Nations Convention on the International Carriage of Goods by Road, 1980. https://zakon.rada.gov.ua/laws/show/995_189
15. UN Convention on the Carriage of Goods by Sea, 1978. https://zakon.rada.gov.ua/laws/show/995_391
16. UN Convention on Jurisdictional Immunities of States and Their Property. https://zakon.rada.gov.ua/laws/show/995_e50
17. Convention on the Settlement of Certain Conflicts of Laws Concerning Bills of Exchange and Promissory Notes, 1930. https://zakon.rada.gov.ua/laws/show/995_007
18. Convention on the International Carriage of Passengers and Baggage by Road, 1997: https://zakon.rada.gov.ua/laws/show/997_034
19. Convention on International Carriage by Rail, 1980. https://zakon.rada.gov.ua/laws/show/994_291
20. Convention on Transit Trade of Inland States, 1964. https://zakon.rada.gov.ua/laws/show/995_166
21. Convention introducing the Uniform Law on Bills of Exchange and Promissory Notes, 1930. https://zakon.rada.gov.ua/laws/show/995_009
22. Marrakesh Agreement Establishing the World Trade Organisation 1994. https://zakon.rada.gov.ua/laws/show/995_342
23. Principles of International Commercial Contracts (UNIDROIT Principles) 1994. https://zakon.rada.gov.ua/laws/show/995_920
24. Principles of International Trade Relations and Trade Policy 1964. http://www.big-lib.com/book/4_Mijnarodna_ekonomika
25. Principles of International Trade Relations and Trade Practices Promoting Development 1964. http://www.big-lib.com/book/4_Mijnarodna_ekonomika
26. Protocol of 1994 to the European Energy Charter. https://zakon.rada.gov.ua/laws/show/995_056
27. UN General Assembly resolution 1995 30.12.1964 on the establishment of the United Nations Conference on Trade and Development (UNCTAD). https://geneva.mfa.gov.ua/ua/ukraine-io/unctd
28. UN General Assembly resolution 2151 17.11.1966 establishing the United Nations Industrial Development Organization (UNIDO). https://vienna.mfa.gov.ua/ua/ukraine-io/unido/about.
29. Charter of Economic Rights and Duties of States, 1974. https://zakon.rada.gov.ua/go/995_077
30. Chicago Convention on International Carriage by Air of 1944. https://zakon.rada.gov.ua/go/995_038
31. Declaration on Principles of International Law concerning Friendly Relations and Co-operation among States in accordance with the Charter of the United Nations of 1970. https://zakon.rada.gov.ua/laws/show/995_569
32. Declaration and Programme on the Establishment of a New International Economic Order, 1974. https://zakon.rada.gov.ua/laws/show/995_339
33. 1994 Treaty to the European Energy Charter. https://zakon.rada.gov.ua/laws/show/995_056.

Recommended reading

1. Introduction to the Law of the World Trade Organisation / Peter Van den Bosch, Sergey Beketov. Kyiv: In Jure, 2011. 87 p.
2. Tarasov O. V. Subject of International Law: Problems of Modern Theory. Kharkiv: Pravo, 2014. 510 p.
1. Official website of the United Nations: www.un.org.
2. Official website of the European Union. www.europa.eu.int
3. Official website of NATO www.nato.int
4. Official website of the Organisation for Security and Co-operation in Europe. www.osce.org
5. Official website of the World Trade Organisation. www.wto.org

REGIONAL SYSTEMS, ECO-INNOVATION AND SUSTAINABLE DEVELOPMENT				
The aim course aims to develop students' understanding of the principles and mechanisms of sustainable development of regional systems, focusing on the integration of eco-innovations to balance economic, social and environmental processes.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	3 / Elective	Zoia Pestovska, PhD, Associate Professor	90 hours (16 h. lectures, 12 h. practical classes, 62 h. self-directed learning)
Learning outcomes On the completion of the course, students will be able to:			**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Design and implement effective management systems for organisations, integrating eco-innovation principles and sustainable development strategies.			Lecture, discussion, small group work	Participation in discussion, oral answers to questions, presentation in small groups (CAS)
2) Justify and oversee projects, as well as generate and develop entrepreneurial initiatives aimed at enhancing regional systems through eco-innovation.			Problem lecture, case study, problem situations	Presentation of case studies, solving problem situations (CAS), final exam (FAS)
3) Develop advanced decision-making skills to formulate, justify and ensure the implementation of management strategies for regional development under unpredictable conditions, considering legal, ethical and social responsibility requirements, along with sustainability principles.			Lecture, practical task	Evaluation of students' reports (CAS)
4) Make informed and strategic decisions on change management within regional systems, including in contexts of uncertainty and post-war recovery, while identifying key influencing factors and aligning with sustainable development goals.			Problem lecture, case study, problem situations	Presentation of the case study, solving problem situations (CAS), final exam (FAS)
5) Facilitate effective collaboration among key stakeholder groups at local, national, and global levels to support Ukraine's post-war economic recovery, integrating global sustainability goals and eco-innovation practices.			Lecture, case study, solving problem situations	Oral answers to questions, solving problem situations (CAS), final exam (FAS)
Assessment				
Final assessment: 40% exam 60% continuous assessment: 20% case studies				

5% testing
10% situational tasks, discussions
Each practical class is worth a maximum of 7 points, the grade depends on the student's activity during the discussion of cases and solving situational tasks, etc.
18% individual task – independent work on solving situational tasks: maximum 18 points. The grade will depend on how well the work follows the required format (title page, figures, tables, references and bibliography), the level of independence and creativity in presenting the material, the validity of conclusions and the timeliness of submission. A delay in submission will result in a 10-point deduction for each week the work is late.

Content

Topic 1. Social and environmental impact assessment
Topic 2. Legal and economic principles of regional development management
Topic 3. Sustainable development innovations in business
Topic 4. The paradigm of sustainable development of innovation and entrepreneurship
Topic 5. Analysis of business innovation and sustainable development

Literature

Ukrainian track

Compulsory reading

1. Політика ЄС щодо зеленої економіки та інновацій: Підручник. Орловська Ю.В., Чала В.С., Глущенко А.В./ під заг. ред. Орловської Ю.В. Д.: ПДАБА. 2023. – 193 с. https://pgasa.dp.ua/wp-content/uploads/2023/02/Pidruchnyk-Polityka-YES.pdf
2. Збірка кейсів «Європейські практики екологічної відповідальності та свідомого споживання» [Текст] / М-во освіти і науки України, Дніпровський національний університет імені Олеся Гончара; О.А. Зінченко, Приварникова І.Ю., В.С. Яковенко, Редько В.С., Пащенко О.В., Дніпро: 2023. - 172 с. https://www.dnu.dp.ua/docs/Jean%20Monnet/Zbirka%20keisiv_DOC.pdf
3. Сокур М. Еко-інновації для сталого розвитку: сучасний стан, механізми фінансування та проєктна діяльність. Scientific journal "Modeling the development of the economic systems", 2023. https://mdes.khmnu.edu.ua/index.php/mdes/article/view/244
4. Нагиєва А.І., Зайченко М.А. Екологічні інновації: підтримка сталого розвитку процесів, продуктів та послуг. Економіка та суспільство. Випуск # 46 / 2022 https://economyandsociety.in.ua/index.php/journal/article/view/2054
5. Одрехівський М.В., Когут У.І. Проблеми формування еко-інноваційної політики. Вісник Національного університету "Львівська політехніка". Серія "Проблеми економіки та управління". № 2 (10), 2022. https://science.lpnu.ua/sites/default/files/journal-paper/2022/oct/28849/vse-78-91.pdf
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7. Пронь Л.М. Інституційно-правові засади публічного управління інвестиційним розвитком регіону. Дніпровський науковий часопис публічного управління, психології, права. Випуск 6, 2022. https://www.researchgate.net/publication/369419975_institucijno-pravovi_zasadi_publicnogo_upravlinna_investicijnim_rozvitkom_regionu
8. Кірдіна О.Г., Долуда О.О. Теорії економічного розвитку регіонів. Вісник економіки транспорту і промисловості № 83, 2023. https://www.researchgate.net/publication/379352886_teorii_ekonomicnogo_rozvitku_regioniv
9. Інтегрована Візія Річки Дніпро. Ro3kvit та Greenpeace Central and Eastern Europe. 2024. https://ro3kvit.com/ua/projects/dnipro-river-integrated-vision

Recommended reading

1. Андрієнко А. О. Упровадження концепції «Smart City» в управління великими містами України: монографія / Андрієнко А. О. - Вінниця, Україна: ГО «Європейська наукова платформа», 2023. - 196 с.

https://www.researchgate.net/publication/370022491_uprovadzenna_koncepcii_smart_city_v_upravlinna_velikimi_mistami_ukraini
2. Аналіз сталого розвитку — глобальний і регіональний контексти / Міжнар. рада з науки (ISC) та ін.; наук. кер. проекту М. З. Згуровський. — К.: КПІ ім. Ігоря Сікорського, 2019. — Ч. 1. Глобальний аналіз якості і безпеки життя (2019). — 216 с. http://wdc.org.ua/sites/default/files/SD2019-P1-FULL-UA.pdf
3. Аналіз сталого розвитку — глобальний і регіональний контексти / Міжнар. рада з науки (ISC) та ін.; наук. кер. проекту М. З. Згуровський. — К.: КПІ ім. Ігоря Сікорського, 2019. — Ч. 2. Україна в індикаторах сталого розвитку (2019). — 112 с. http://wdc.org.ua/sites/default/files/SD2019-P2-FULL-UA.pdf
4. Войтко С. В. Управління проектами та стартапами в Індустрії 4.0: підручник / С. В. Войтко. – Київ: КПІ ім. І. Сікорського, 2019. – 200 с. https://books.google.com.ua/books?id=k1afDwAAQBAJ
5. Публікації ООН в Україні http://www.un.org.ua/ua/publikatsii-ta-zvity/un-in-ukrainepublications
6. Публікації ПРООН в Україні https://issuu.com/undpukraine
7. Сталий розвиток для України http://sd4ua.org
8. Радченко К.В. Оцінювання моделі смарт-сіті з позиції сталого розвитку територій. Економічний вісник Донбасу № 3(73), 2023. http://www.evd-journal.org/download/2023/03/19-Radchenko.pdf
9. Діордіца І.В., Журавель Я.В. Інноваційність концепту “smart city” та юридичні механізми забезпечення його кібербезпеки в умовах реформування територіальних громад в Україні. Актуальні проблеми вітчизняної юриспруденції № 1. 2023. http://apnl.dnu.in.ua/1_2023/16.pdf
10. Методологічні положення державного статистичного спостереження таблиця "витрати-випуск". Державна служба статистики України, 2022. https://salo.li/82d8B35
11. Возняк Г., Коваль В. Зміцнення фінансової самодостатності територіальних громад в умовах нестабільності: практичні аспекти. Економічний часопис Волинського національного університету імені Лесі Українки. Розділ ІІІ, 1, 2023. https://www.echas.vnu.edu.ua/index.php/echas/article/download/803/652
12. Чайкіна А.О. Кудінов О.М. Теоретичні засади формування регіональної політики при реалізації стратегії сталого розвитку. Держава та регіони. Серія: Економіка та підприємництво, 2024 р., № 2 (132). https://salo.li/3a67A58
13. Марценюк О.В., Гуменна О.І., Деньдобра Т.В. Перспективи зміцнення фінансової самодостатності територіальних громад в умовах децентралізації. Економіка та суспільство, Випуск # 51 / 2023. https://salo.li/b508Cb7.

English track

Compulsory reading

1. Sustainability, innovation, and entrepreneurship. LibreTexts, 2024. https://open.umn.edu/opentextbooks/textbooks/sustainability-innovation-and-entrepreneurship

Recommended reading

1. Sustainable development knowledge platform https://sustainabledevelopment.un.org
2. The Eco-Innovation Observatory http://www.eco-innovation.eu

SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT

The course aims to provide students with both theoretical and practical knowledge on social and environmental impact assessment within the context of city management.
Course objectives: to consider social and environmental impact assessment in the context of modern city development; to use different methods for conducting this type of assessment; to consider the managerial aspects of implementing these assessments in Ukraine.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	2	3 / Elective	Ruslan Kliuchnyk, PhD in Political Science, Associate Professor	90 hours (16 h. lectures, 12 h. practical classes, 62 h. self-directed learning)

Learning outcomes On completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically evaluate and strategically manage projects, demonstrating the ability to generate and assess innovative entrepreneurial ideas.	Lectures, case study analysis, brainstorming sessions	Participation in group discussions and brainstorming, case study reports (CAS), final test (FAS)
2) Synthesise and apply advanced decision-making techniques to formulate, substantiate and ensure the implementation of managerial decisions in unpredictable environments, integrating legal, ethical and social responsibility considerations.	Lectures, seminars, discussions, debates on ethical and legal dilemmas	Participation in discussion, ethical case study analysis (CAS), final test (FAS)
3) Design and implement comprehensive strategies for information, methodological, material, financial and human resource support to enhance organisational (unit) performance.	Lectures, seminars, discussions, workshops on strategic planning	Class discussions on best practices, essay, presentation (CAS), final test (FAS)
4) Develop and execute effective change management strategies, particularly in conditions of uncertainty or post-war recovery, by analysing influencing factors and aligning with sustainable development goals.	Lectures, seminars, discussions, scenario planning exercises	Participation in scenario analysis, essay, presentation (CAS), final test (FAS)

Assessment

The final grade is given on a 100-point scale, including 40 points for the final test and 60 points for the work in the semester.
60 points for work in the semester:
20 points for an individual task (presenation);
40 points for discussions
Assessment criteria:
a) individual presentation
16-20 points: The student demonstrates excellent understanding of the material, mastery of the content and depth of search. The student uses modern scientific and information literature and databases. The task contains elements of novelty and reflects the author's own point of view. The

task is designed in accordance with the requirements.
11-15 points: The student understands the material well and demonstrates a good mastery of the content and depth of search. Modern information sources were used to perform the task. There are minor violations of the requirements in the design of the task.
6-10 points: The structure is somewhat logical, but the ideas and concepts may not always be clearly or effectively expressed. The task may lack coherence and/or accuracy in certain areas.
1-5 points: The task is poorly structured, disorganised, inaccurate and/or confusingly expressed. There are major omissions.
b) participation in discussions
For participating in the discussion, the student will receive points from the total number specified in the course map for this type of assessment:
81-100%: The discussion is conducted correctly. The student demonstrates excellent mastery of the educational material and expresses and successfully argues his/her position.
51-80%: The student demonstrates an understanding of the educational material, but some inaccuracies are noticed.
21-50%: A basic understanding of the material, but with significant gaps or omissions.
1-20 %: A lot of mistakes, with little to no understanding of the material's context.
c) test papers
The criteria for the examination assignment are written on the test card.

Content

Topic 1. Environmental impact on cities
Topic 2. Ecological problems of the modern world
Topic 3. Social sector in a smart city
Topic 4. Collaborative aspects of smart city
Topic 5. Assessment of successful policies

Literature

Compulsory reading

1. Hovik S., Legard S., Bertelsen I.M. Area-based initiatives and urban democracy. Cities. 2024. Volume 144, January 2024, 104638.
2. Managing Smart City Governance. Playbook for local and regional governments. United Nations Human Settlements Programme (UN-Habitat). https://unhabitat.org/managing-smart-city-governance-a-playbook-for-local-and-regional-governments
3. Grytsenko, A. Borzenko O., Burlay T. Achievements and challenges of Ukraine's European integration. Journal of European economy. 2021. Vol. 20, № 3. P. 518-541.
4. Mrasori, F. (2022). The Role of the Unilateral Harmonization to the EU Integration. Lex Portus, 8(2), 54–77. https://doi.org/10.26886/2524-101X.8.2.2022.3
5. Kozłowski W., Suwar K. Smart City: Definitions, Dimensions, and Initiatives. European Research Studies Journal. Volume XXIV, Special Issue 3, 2021. P. 509-52p.
6. Bauerová H. (2019). The V4 and European Integration. https://www.researchgate.net/publication/327725864_The_V4_and_European_Integration.
7. Задоя А.О., Федулова С.О., Ключник Р.М. Архітектура європейської безпеки: нові виклики та загрози: навчальний посібник. Дніпро: УАН, 2024. 297 с.
8. Giela M. The human element in the context of smart cities. Management Systems in Production Engineering. 2023, Volume 31, Issue 3, pp. 300-305. https://intapi.sciendo.com/pdf/10.2478/mspe-2023-0033
9. Mouratidis K., Hofstad H., Zeiner H.H., Sagen S.B., Dahl Ch., Følling K.E., Olsen B.O. Assessing urban social sustainability with the Place Standard Tool: Measurement, findings, and guidance. Cities, 2024, p. 104902. https://www.sciencedirect.com/science/article/pii/S0264275124001161
10. Sharifi A, Allam Z. On the taxonomy of smart city indicators and their alignment with sustainability and resilience. Environ Plan B Urban Anal City Sci. 2021;49(5):1–20. https://doi.org/10.1177/23998083211058798.

11. Tomadon L., De Vries W.T., Moretto Ya., Do Couto E.V. Smart city and sustainability indicators: a bibliometric literature review. Discover Sustainability. Volume 5, article number 143, (2024). https://link.springer.com/article/10.1007/s43621-024-00328-w
12. Hajek P., Youssef A., Hajkova V. Recent developments in smart city assessment: A bibliometric and content analysis-based literature review. Cities. Volume 126, July 2022, 103709. https://www.sciencedirect.com/science/article/abs/pii/S0264275122001482

Recommended reading

1. Młodkowski P. Estimating Production Function Before Covid-19 Pandemic in Europe / P. Młodkowski // European Integration Studies No. 14 / 2020, pp. 104-116.
2. People-Smart Sustainable Cities. UN. 2020. https://unece.org/housing/publications/people-smart-sustainable-cities-E
3. The State of European Smart Cities: Exploring and showcasing models, solutions, and financing for European replication to achieve climate neutrality. https://cris.vtt.fi/en/publications/the-state-of-european-smart-cities-exploring-and-showcasing-model
4. The Road toward Smart Cities: Migrating from Traditional City Management to the Smart City. https://publications.iadb.org/en/road-toward-smart-cities-migrating-traditional-city-management-smart-city
5. Gil, M.T.N.; Carvalho, L.; Paiva, I. Determining factors in becoming a sustainable smart city: An empirical study in Europe. Econ. Sociol. 2020, 13, 24–39.
6. International Monetary Fund. https://www.imf.org/en/Home
7. World Economic Outlook Database. International Monetary Fund. https://www.imf.org/en/Publications/WEO/weo-database/2021/April/select-country-group

SMART ENERGY INFRASTRUCTURE

The course aims to provide students with knowledge and practical skills in managing sustainable and resilient energy systems in smart cities. It focuses on integrating innovative technologies, renewable energy sources and data-driven solutions to create efficient and clean energy infrastructure in a sustainable development context. The course objectives are to provide students with a deep understanding of the principles and components of smart energy systems, including renewable energy technologies, energy storage and modern grid systems; prepare students to identify vulnerabilities in energy infrastructures during crises and develop innovative strategies to enhance system reliability and recovery; promote sustainable development; prepare for global challenges.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	2	3 / elective	Olha Nezhoda PhD, Accosiate Professor	90 hours (16 h. lectures, 12 h. practical classes, 62 h. self-directed learning)

Learning outcomes On completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and apply appropriate scientific, methodological and analytical tools for managing energy infrastructure under uncertain conditions.	Lecture, seminars, discussions, self-directed learning, presentations	Participation in the discussion, essay, presentation (CAS), and final test (FAS)
2) Identify challenges within energy infrastructure and provide reasoned solutions for addressing them.	Lecture, case-based learning, workshops, self-directed learning, discussions	Case study analysis (CAS), participation in the discussion,and final test (FAS)
3) Develop the ability to make informed management decisions, justify them and ensure their effective implementation, considering the legal, ethical and social responsibilities associated with energy infrastructure under unpredictable circumstances.	Lectures, group discussions, seminars, speeches and debates	Participation in the discussion, debate performance assessment, Research Paper (CAS), and final test (FAS)
4) Demonstrate proficiency in planning and executing the necessary informational, methodological, material, financial and human resources support for the energy infrastructure of an organisation or city.	Presentations and pitches, team assignments, workshops	Team project milestones, engagement in workshops (CAS), and final test (FAS)
5) Design and implement organisational and business strategies for developing energy infrastructure within the framework of a smart city, aiming to optimise human capital management while utilising managerial, economic, social, legal and ethical tools.	Case study analysis, debates and panel discussions	Participation in case discussions, debate performance (CAS), and final test (FAS)

Assessment

The final grade is given on a 100-point scale
Continuous Assessment (50%)
Participation in seminars and activities (10%)

Case study reports (15%)
Midterm project presentation (25%)
Final Assessment (50%)
Capstone project: Comprehensive smart energy infrastructure solution proposal, including a written report (30%) and oral defence (20%).
Assessment criteria:
Participation in Seminars and Activities (10 Points)
Engagement (4 Points). The student actively contributes to discussions and group activities by sharing thoughtful ideas and insights. Consistently participate in seminar debates and workshops.
Preparation (3 Points). The student demonstrates familiarity with assigned readings or preparatory materials, showcasing prior knowledge relevant to seminar topics.
Collaboration (2 Points): The student works well with peers, respects diverse viewpoints and contributes constructively to group projects.
Communication (1 Point). The student articulates their thoughts clearly and effectively during presentations and discussions.
Case Study Reports (15 Points)
Analysis and Depth (6 Points): The student thoroughly analyzes the case study, identifying critical challenges and evaluating proposed solutions in detail.
Relevance (3 Points). The student connects the case study findings to course topics, demonstrating how lecture concepts apply to real-world scenarios.
Critical Thinking (4 Points): The student provides innovative and well-reasoned solutions, evaluating the pros and cons of existing approaches.
Example: A student proposes integrating AI tools into a crisis management strategy and justifies its impact.
Presentation Quality (2 Points). The student submits a well-structured, visually appealing report that meets academic standards.
3. Midterm Project Presentation (25 Points)
Content Quality (10 Points). The student presents a clear and comprehensive solution to the project problem, incorporating technical, social, and policy aspects.
Presentation Skills (7 Points). The student delivers the presentation confidently, using visuals effectively and engaging the audience.
Teamwork and Collaboration (5 Points). If the project is group-based, students demonstrate cohesive teamwork and equitable division of responsibilities.
Q&A Performance (3 Points) The student responds to audience questions with clarity and depth, demonstrating mastery of the subject.
Final Assessment (50 Points Total)
Written Report (30 Points)
Comprehensiveness (10 Points) The student addresses all required aspects of the project, including technical design, financial planning, and policy implications.
Innovation (6 Points). The student proposes creative and unique solutions that align with sustainability principles and smart city development.
Research Quality (6 Points). The student utilizes credible and up-to-date sources, integrating case studies and data to support their arguments.
Clarity and Structure (5 Points). The report is well-organized, logically structured, and easy to follow, with appropriate visuals.
Referencing (3 Points). The student follows academic citation standards, providing complete and accurate references.
2. Oral Defense (20 Points)
Clarity and Organisation (6 Points). The student presents their ideas in a logical order, using visuals and slides effectively to support their argument.
Depth of Knowledge (6 Points): The student demonstrates a thorough understanding of the topic and confidently explains the solution's technical and policy aspects.

Persuasiveness (4 Points). The student makes a compelling case for the feasibility and impact of their project.
Response to Questions (4 Points). The student handles audience questions confidently, providing well-thought-out and accurate responses.

Content

Topic 1. Introduction to the course “Smart Energy Infrastructure”
Topic 2. Energy infrastructure resilience in a changing environment in the context of sustainable development
Topic 3. Energy Policy and Governance in Smart Cities
Topic 4. Innovative Technologies in Energy Infrastructure
Topic 5. Economic Models and Financing Smart Energy Projects
Topic 6. Future Trends in Smart Energy Infrastructure

Literature

Ukrainian track

Compulsory reading

1. Чигрин О., Гавриленко О., Шевченко К. Розумна трансформація енергетики: основні принципи та складові. Вісник економіки № 2, 2023 р. https://visnykj.wunu.edu.ua/index.php/visnykj/article/download/1483/1622

Recommended reading

1. Розумна мережа. https://www.satec-global.com.ua/rozumna-merezha-smart-grid/
2. ДТЕК планує побудувати в Київській області першу в Україні інфраструктуру «розумних» електромереж Smart Grid. https://dtek.com/media-center/news/ukraines-dtek-planning-eur-24-billion-upgrade-for-war-hit-energy-grid-in-kyiv-regio/
3. Розумні Енергосистеми. https://patriot-nrg.com/uk/content/rozumni-energosystemy

English track

Compulsory reading

1. Fan Z., Parag K., Sedat G., Costas E., Georgios K., Mahesh S., Ziming Z., Sangarapillai L., Woon H.C. ‘Smart Grid Communications: Overview of Research Challenges, Solutions, and Standardization Activities’. IEEE Communications Surveys & Tutorials 15, no. 1 (2013): 21–38. https://doi.org/10.1109/SURV.2011.122211.00021.
2. Approaches, Advances and Applications in Sustainable Development of Smart Cities. MDPI, 2020. https://doi.org/10.3390/books978-3-03928-013-1.
3. Lam, Albert Y.S., Bogusław Łazarz, and Grzegorz Peruń, eds. Smart Energy and Intelligent Transportation Systems. MDPI, 2022. https://doi.org/10.3390/books978-3-0365-4454-0.
4. Haidine, Abdelfatteh, ed. ICT for Smart Grid - Recent Advances, New Perspectives, and Applications. IntechOpen, 2024. https://doi.org/10.5772/intechopen.1000349.

Recommended reading

1. Cano-Ortega, Antonio, and Francisco Sánchez-Sutil, eds. Smart IoT System for Renewable Energy Resource. MDPI, 2023. https://doi.org/10.3390/books978-3-0365-9183-4.
2. Nanogrids, Microgrids, and the Internet of Things (IoT): Nanogrids, Microgrids, and the Internet of Things (IoT). MDPI, 2019. https://doi.org/10.3390/books978-3-03921-795-3.
3. Bizon N., Mamadou B.C., Bhargav A. Efficiency and Sustainability of the Distributed Renewable Hybrid Power Systems Based on the Energy Internet, Blockchain Technology and Smart Contracts-Volume II. MDPI, 2023. https://doi.org/10.3390/books978-3-0365-6370-1.
4. Methods and Concepts for Designing and Validating Smart Grid Systems. MDPI, 2019. https://doi.org/10.3390/books978-3-03921-649-9.
5. Directory of Open Access Books (DOAB) https://www.doabooks.org/
6. A CORE Repository Search https://core.ac.uk/search/?q=crisis%20management%20in%20smart%20city

ENVIRONMENTAL MANAGEMENT AND AUDIT

The course aims to develop students' systematic understanding of the principles, tools and mechanisms of environmental management and audit, as well as the ability to apply this knowledge to ensure environmental safety, rational use of natural resources and sustainable development of enterprises and organisations.

Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	2	3 / Elective	Zoia Pestovska, PhD, Associate Professor	90 hours (16 h. lectures, 12 h. practical classes, 62 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Identify organisational challenges in the domain of environmental management and provide well-justified solutions for addressing them.	Lecture, discussion, small group work	Participation in discussion, oral answers to questions, presentation in small groups (CAS)
2) Develop and implement organisational and business strategies aligned with the principles of environmental management and auditing, aimed at enhancing the branding of a city or territory and optimising human capital management, using managerial, economic, social, legal and ethical frameworks.	Problem lecture, case study, problem situations	Presentation of case studies, solving problem situations (CAS)
3) Organise and facilitate effective collaboration between key stakeholder groups at local, national and global levels during Ukraine's post-war economic recovery while considering global sustainable development goals and contemporary trends in environmental management.	Lecture, practical task	Evaluation of students reports (CAS)

Assessment

Final grade:
100% continuous assessment:
30% case solving
10% testing
20% situational tasks, discussions
Each practical lesson is worth a maximum of 10 points, the grade depends on the student's activity during the discussion of cases and solving situational tasks, etc.
40% individual task - independent work on solving situational tasks: maximum 18 points. The grade will depend on how well the work follows the required format (title page, figures, tables, references and bibliography), the level of independence and creativity in presenting the material, the validity of conclusions and the timeliness of submission. A delay in submission will result in a 10-point deduction for each week the work is late.

Content

Topic 1. Fundamentals of environmental management
Topic 2. International standards and recommendations on environmental management
Topic 3. International standards of the ISO 14000 series and State standards of Ukraine DSTU
Topic 4. Environmental management tools
Topic 5. Indicators of environmental performance of economic activity
Topic 6. Environmental audit of enterprises and organisations
Topic 7. Environmental marketing, certification and labelling
Topic 8. Development of an environmental programme of the enterprise

Literature

Ukrainian track

Compulsory reading

1. Даянкач А. Система екологічного менеджменту. (2024) https://www.dqsglobal.com/uk-ua/navchajtesya/blog/sistema-ekologichnogo-menedzhmentu-povnij-posibnik
2. Конспект лекцій з дисципліни «Екологічний аудит». Непошивайленко Н.О. – Кам'янське: ДДТУ, 2023. – 43 с. https://www.dstu.dp.ua/Portal/Data/5/42/5-42-kl7.pdf
3. Екологічний аудит та екологічний контроль: курс лекцій. Укладач: Саєнко Т.В. – К.: 2023. - 77 с. http://surl.li/xsphit
5. Галушкіна Т.П., Грановська Л.М., Кисельова Р.А. Екологічний менеджмент та аудит: Навчальний посібник. – Херсон: Олді, 2020. – 456 с. https://salo.li/5665284
6. Дяченко-Богун М. Екологічний менеджмент і аудит: історія розвитку та генезис. Естетика і етика педагогічної дії. 2023, Вип. 27. https://salo.li/8e9Ba46

Recommended reading

1. Закон України «Про охорону навколишнього природного середовища». http://zakon5.rada.gov.ua/laws/show/1264-12
2. Міністерство захисту довкілля та природних ресурсів України - https://mepr.gov.ua/
3. Промислова екологія. Спільнота фахівців-екологів - http://www.eco.com.ua/
4. Професійна Асоціація Екологів України (ПАЕУ) - https://paeu.com.ua/
5. Методичні рекомендації до практичних занять з дисципліни «Екологічний менеджмент і аудит». О.В. Мізіна. – Луцьк: ДонНТУ, 2023. – 58 с. http://surl.li/twrhat
6. Мельниченко Г.М. Методичні рекомендації до практичних робіт та самостійної роботи з дисципліни «Екологічний менеджмент та аудит». Івано-Франківськ, 2021. – 26 с. https://kbe.pnu.edu.ua/wp-content/uploads/sites/36/2021/10/MEL-Eco-management-methods.pdf

English track

Compulsory reading

1. DuJack E. (2024) How to prepare for and conduct environmental audits. Https://www.l2l.com/blog/environmental-audits
2. Eco-Management and Audit Scheme (EMAS). https://green-business.ec.europa.eu/emas_en
3. Mohana Rao M., Bhushana Rao S. Environment Management and Audit. https://regalpublications.com/book/environment-management-and-audit-9788176292481
4. Environmental Audit Meaning, Importance, Etc. for UGC NET Notes (2024) https://testbook.com/ugc-net-commerce/environmental-audit

Recommended reading

1. Environmental auditing. https://v.gd/xyUmpw
2. Free Environmental Audit Checklists. https://safetyculture.com/checklists/environmental-audit/
3. Watson S. Safety, Health and Environmental Auditing - A Practical Guide (2018) Second Edition. PainCopyright. https://salo.li/DcF22e1
4. Gibassier D., Alcouffe S. (2018) Environmental Management Accounting: The Missing Link to Sustainability? https://www.tandfonline.com/doi/full/10.1080/0969160X.2018.1437057
5. Environmental management accounting. https://salo.li/f458750

URBAN ECO-INNOVATION AND CIRCULAR ECONOMY				
This course explores the concept of circular economy as an alternative to the traditional linear economic model. Students will learn about the principles, strategies and practical applications of the circular economy across various industries. The course will cover theoretical foundations, case studies and current challenges in implementing circular economy models.				
Language of teaching	**Semester / Duration**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	3	4 / compulsory	Volodymyr Momot, Doctor of Science, Full Professor	120 h. (26 h. lectures, 14 h. practical classes, 80 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and supplement scientific, methodological and analytical tools necessary for managing eco-innovations within the framework of a circular economy. 2) Design and implement an effective management system for organisations operating within the principles of a circular economy. 3) Communicate effectively in both professional and academic settings, in both domestic and foreign languages, regarding eco-innovations and the circular economy. 4) Exhibit leadership qualities, collaborate within teams, engage with stakeholders and influence behaviour to achieve professional goals in the fields of eco-innovations and the circular economy. 5) Demonstrate the ability to delegate authority and manage an organisation (or department) toward the successful implementation of eco-innovations and the circular economy.	Lectures, case study analysis, workshops on analytical tools with invited guests (experts in the field of smart cities) Peer teaching lecture, discussion of practical case studies, group projects Discussions and debates**,** discussion of situational tasks, analysis of real cases, Leadership role-playing**,** individual and group projects, analysis of real cases, work with software. Peer teaching lecture, discussion of practical case studies, problem-solving method using the Internet	Participation in case study analysis and group discussions, submission of analytical tool usage report in eco-innovation cases (CAS) Group project progress checks and feedback, solution/explanation of practical case studies (CAS) Oral presentation and written report demonstrating communication skills (CAS) Participation in case study discussions, peer and self-assessments based on leadership skills in group projects, evaluation software slills (CAS) Participation in case study discussions, case study and solving problems analysis (CAS)

Assessment

Final grade is a result of 100% continuous assessment:
80% completion of individual practical tasks
20% final semester control (tests)
Assessment criteria:
8 practical works are performed, each worth 10 points - 80 points, 20 test questions - 20 points.
Module 1 (max - 30 points). Points earned upon completion of 3 practical tasks, each worth 10 points.

Module 2 (max - 50 points). Points earned upon completion of 5 practical tasks, each worth 10 points.
Task assessment criteria:
9-10 points - the student has completed the task correctly, demonstrates a deep understanding of the material. All detailed conclusions have been made.
7-8 points - the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions are made.
5-6 points - the student demonstrates insufficient understanding of the material. The task is completed partially or in general terms. The student made partial conclusions.
3-4 points - the student demonstrates ignorance of the material, the task contains significant errors, conclusions are missing.
1-2 points - the student demonstrates ignorance of the material. The task is not completed to the end, conclusions are missing.
0 points - the task is not fully completed by the student.

Content

Topic 1. Introduction to Circular Economy
Topic 2. Principles of Circular Economy
Topic 3. Business Models in Circular Economy
Topic 4. Circular Design and Sustainable Innovation
Topic 5. Circular Economy in Manufacturing, in the Food System, in Fashion and Textiles
Topic 6. Circular Economy and Energy Systems, and Water Management, in Construction and building design
Topic 7. Urban mining and material passports; Modular construction and adaptable buildings; Circular Supply Chains and Waste Management
Topic 8. Circular Economy in Action: Case Studies
Topic 9. Digital Technologies Enabling Circular Economy
Topic 10. Measuring Circularity and its Benefits/Social Impact
Topic 11. Policy and Governance for Circular Economy
Topic 12. Future Trends and Challenges/Barriers in Circular Economy

Literature

Compulsory reading

1. Ellen MacArthur Foundation (2013). Towards the Circular Economy.
2. Stahel, W. R. (2016). The Circular Economy: A User's Guide.
3. Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A Review on Circular Economy: The Expected Transition to a Balzanced Interplay of Environmental and Economic Systems
4. Reports and case studies from the Ellen MacArthur Foundation
5. "Cradle to Cradle: Remaking the Way We Make Things" by William McDonough and Michael Braungart

Recommended reading

1. Ellen MacArthur Foundation (https://www.ellenmacarthurfoundation.org/)
2. European Commission Circular Economy Action Plan (https://ec.europa.eu/environment/circular-economy/)
3. Reports on Circular Economy by McKinsey & Company

STAKEHOLDER ENGAGEMENT AND COMMUNICATION

The course aims to provide students with theoretical knowledge and practical skills to effectively engage and communicate with stakeholders, identify their needs, manage expectations and develop partnerships within organisational activities or projects.

Language of teaching	**Semester**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
Ukrainian	3	4 / Elective	Hanna Mytrofanova, Doctor of Economics Science, Full Professor	120 h. (22 h. lectures, 14 h.practical classes, 82 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Organise and execute effective communication strategies with stakeholders in a smart city, engaging representatives from diverse professional groups and operating within an international context.	Lecture Work in small groups Case study Preparation of the project of engagement and communication with stakeholders	Oral answers to questions Presentation in small groups Presentation of case study Presentation of the project of engagement and communication with stakeholders (CAS)
2) Communicate proficiently in both professional and academic environments, using both domestic and foreign languages, to engage with stakeholders.	Lecture Case study Business game	Oral answers to questions Presentation of case study Participation in a business game (CAS)
3) Demonstrate leadership capabilities, collaborate effectively within teams, engage with individuals, and influence stakeholder behaviour to accomplish professional objectives.	Lecture Work in small groups	Presentation in small groups (CAS)
4) Develop and implement organisational and business strategies for stakeholder engagement, aligned with the smart city concept, aimed at enhancing the branding of a city or territory and optimising human capital management.	Lecture Case study Problem situations	Presentation of the case study Problem solving (CAS)
5) Facilitate effective collaboration among key stakeholder groups at local, national, and global levels during Ukraine's post-war economic recovery, considering global sustainable development goals.	Problem lecture Case study Business game	Testing Presentation of the case study Participation in a business game (CAS)

Assessment

The final grade in the discipline is set on a 100-point scale.
100 points are given according to the content modules and forms of diagnostics:

Modules, topics and forms of diagnostics	Maximum number of points
Practical class 1	10

Practical class 2	15
Practical class 3	15
Practical class 4	15
Practical class 5	15
Practical class 6	15
Practical class 7	15
Total for work in practical classes	100

Criteria for evaluating participation in group work and case work:
90-100% is credited if: The student actively works in a group on the task, takes the initiative, is able to formulate a well-grounded opinion on the issue.
The work reflects the student's own point of view, there is an element of novelty.
The student demonstrates excellent use of relevant data and examples.
The student demonstrates a sequence of actions in explaining situations, explains in detail, and consciously uses methods of analysis.
75-89% is credited if: The student actively works in a group on the task, demonstrates good knowledge of the issue under discussion. The student argues his/her answer well. Uses relevant data and examples. The student demonstrates the sequence of actions in explaining situations, explains in detail, in most cases consciously uses analysis methods.
60-74% is credited if: The student is not very active in the group on the task. The student provides limited arguments in the answer; does not use enough data in the work.
The student demonstrates an incomplete sequence of actions in explaining situations.
1-59% is credited if: The student does not understand the problem and the question. Important information was missing. Provides information that is not relevant to the issue.
The student does not demonstrate an understanding of the sequence of actions in explaining the situation.
Some materials in the work do not address the issue.

Contents

Topic 1. Basics of Stakeholder Management
Topic 2. Tools for attracting stakeholders in urban planning
Topic 3. Communication strategies with stakeholders
Topic 4. Strategy and tactics of negotiations with stakeholders
Topic 5. Evaluation of the effectiveness of attracting stakeholders in urban planning

Literature

Ukrainian track

Compulsory reading

1. Управління конфліктами для потреб публічної служби: посібник і методичні рекомендації / Калениченко Т., Кисельова Т., Копіна А., Корабльова О., Проценко Д., за заг. ред. Д. Проценко. - Київ: Ваіте, 2021. - 224 с.
2. Власенко Т., Котельникова Ю., Городецька Т., Помогалова Н. Залучення стейкхолдерів для успішного управління проєктом. Scientific journal "Modeling the development of the economic systems" 2023. https://mdes.khmnu.edu.ua/index.php/mdes/article/download/209/183

Recommended reading

1. Стейкхолдери проєкту: хто такі та чому важливо налагодити з ними комунікацію (2023) https://v.gd/VVXZwb
2. Фісуненко П.А., Легостаєв І.М. Стандарти в сфері залучення зацікавлених сторін в девелоперських проєктах. Сталий розвиток економіки. № 1 (46), 2023. https://salo.li/AC8e1B1

English track

Compulsory reading

1. Freeman, R. E. (2010). Strategic Management: A Stakeholder Approach. Cambridge University Press.

2. Fisher, R., Ury, W., & Patton, B. (2013). Getting to Yes: Negotiating Agreement Without Giving
3. Jung Stefanie, Krebs Peter. (2019). The Essentials of Contract Negotiation / Springer Nature Switzerland AG, 2019. - 242 p.
4. Lewicki Roy J., Barry Bruce, Saunders David M. (2015). Negotiation: Readings, Exercises, and Cases / 7th Edition. - McGraw-Hill Education, 724 p.
5. Rainey H.G. (2003). Understanding and managing public organizations. San Francisco: Jossey – Bass.

Recommended reading

1. Business Negotation Skills. 5 Common Business Negotiation Mistakes Negotiation Special Report #10 Copyright 2012 by Harvard University - 14 p.
2. Gates Steve. (2016). The Negotiation Book: Your Definitive Guide to Successful Negotiating / 2nd Edition. - Capstone, 231 p.
3. HBR's 10 Must Reads On Negotiation / Brighton, Massachusetts (USA): Harvard Business Publishing, 2019. - 208 p.
4. McCarthy A., Hay S. (2015). Advanced Negotiation / Techniques Apress, 2015. - 162 p.
5. Williams Greg, Iyer Pat. (2016). Body Language Secrets to Win More Negotiations: How to Read Any Opponent and Get What You Want / Career Press, 224 p.

DATA ANALYTICS FOR SMART CITIES

The course aims to provide students with a modern understanding of how data analytics and digital technologies can be used to address current challenges in urban systems management. It also focuses on teaching practical skills for working with these technologies and data to develop effective, innovative solutions in the context of sustainable urban development.

Language of teaching	**Semester**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	3	4 / elective	Olha Hamzah, PhD in Economics, Associate Professor	120 hours (22 h. lectures, 14 h. practical classes, 84 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and supplement additional scientific, methodological and analytical tools for analysing smart city data under unpredictable conditions.	Lectures, discussion on the materials of the studied literary sources, practical classes with problemsolving	Participation in discussion of case studies, practical training tests, case study analysis, practical training (CAS)
2) Identify organisational challenges in data analytics and provide well-justified solutions for addressing them.	Lectures, discussion on the materials of the studied literary sources, case studies, practical training with solving problems using special software	Oral answers to questions, solution/explanation of practical case studies, practical class (CAS)
3) Justify and manage projects, generate entrepreneurial ideas and analyse smart city data effectively.	Lectures, discussion on the materials of the studied literary sources	Reflection papers, presentation on key insights (CAS)
4) Develop and implement organisational and business strategies aligned with the smart city concept to enhance city or territory branding, optimise big data analytics and manage human capital effectively.	Lectures, discussion on the materials of the studied literary sources, practical training with solving problems using special software	Oral answers to questions, solution/explanation of practical case studies, practical class (CAS)
5) Make informed decisions on change management based on big data analytics, particularly in conditions of uncertainty or post-conflict recovery, by identifying key factors influencing change and sustainable development goals.	Lectures, discussion on the materials of the studied literary sources, practical training with solving problems using special software	Oral answers to questions, solution/explanation of practical case studies, practical class (CAS)

Assessment

Final grade is a result of 100% continuous assessment:
60% completion of individual practical tasks
20% creation and defence of the dashboard
20% final semester control (tests)
Assessment criteria:

There are 6 practical tasks of 10 points each - 60 points, an individual task to create a dashboard and defend it - 20 points, 20 test questions - 20 points.
Module 1 (max - 60 points). The student receives points for the module upon completion of 6 tasks, each of which is assessed at 10 points.
Criteria for assessment:
9-10 points - the student has done the task correctly and demonstrates a deep understanding of the material. All detailed conclusions are made.
7-8 points - the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions are drawn.
5-6 points - the student demonstrates insufficient understanding of the material. The task is completed partially or in a general way. The student has made partial conclusions.
3-4 marks - the student demonstrates ignorance of the material, contains significant errors, no conclusions.
1-2 points - the student demonstrates ignorance of the material. The task is not completed, and there are no conclusions.
0 points - the task is not fully completed by the student.

Contents

Topic 1. Introduction to data analytics for smart cities
Topic 2. Data sources in smart cities
Topic 3. Data collection and processing methods
Topic 4. Data visualisation for decision making
Topic 5. Mobility and transport
Topic 6. Energy and sustainable development
Topic 7. Urban ecology
Topic 8. Video surveillance security and analytics
Topic 9. Managing utilities
Topic 10. The role of artificial intelligence and machine learning
Topic 11. Strategic planning for smart cities

Literature

Compulsory reading

1. Gábor Békés. Data Analysis for Business, Economics, and Policy // Cambridge University Press, 2021. - 738 p.
2. Allam Z., Dhunny Z.A. (2019). On Big Data, Artificial Intelligence and Smart Cities. Cities, 89, 80-91.
3. Kieran Healy. Data Visualization: A Practical Introduction 1st Edition // Princeton University Press, 2018. - 296 p.
4. Alberto Ferrari and Marco Russo. Analyzing Data with Microsoft Power BI and Power Pivot for Excel - Microsoft Press, Redmond, Washington, 2017. – 459 p.
5. Batty, M. (2018). Inventing Future Cities. The MIT Press.
6. McAfee, A., & Brynjolfsson, E. (2017). Machine, Platform, Crowd: Harnessing Our Digital Future. W.W. Norton & Company.
7. Bris, A., & Cabolis, C. (2022). IMD World Competitiveness Yearbook 2022: Smart Cities Rankings. IMD Business School
8. Mora, L., Bolici, R., & Deakin, M. (2017). "The First Two Decades of Smart-City Research: A Bibliometric Analysis." Journal of Urban Technology, 24(1), 3-27.
9. Davies, Cassie. (2024). Big Data Analytics for Smart Cities. International Journal of Computing and Engineering. 6. 14-29. 10.47941/ijce.2057.
10. Palma-Ruiz, Jesús Manuel & Saiz-Alvarez, José Manuel & Herrero-Crespo, Ángel. (2020). Handbook of Research on Smart Territories and Entrepreneurial Ecosystems for Social Innovation and Sustainable Growth. 10.4018/978-1-7998-2097-0.
11. Geertman, S., & Stillwell, J. (Eds.). (2020). Handbook of Planning Support Science. Edward Elgar Publishing

12. "Data and Goliath: The Hidden Battles to Collect Your Data and Control Your World" – Bruce Schneier.
13. On approval of the Concept for the Development of the Digital Economy and Society of Ukraine for 2018-2020 and approval of the action plan for its implementation: Order of the Cabinet of Ministers of Ukraine dated 17.01.2018 No. 67-p. Official Bulletin of Ukraine. 2018. № 16. Pp. 70.
14. Sustainable Development Goals 2016-2030. https://www.undp.org/uk/ukraine/tsili-staloho-rozvytku
15. On Local Self-Government in Ukraine: Law of Ukraine of 21.05.1997 No. 280/97-BP. Bulletin of the Verkhovna Rada of Ukraine. 1997. № 24.

Recommended reading

1. Claus O. Wilke. Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures 1st Edition // O'Reilly Media, 2019. - 387 p.
2. Alex Kolokolov, Maxim Zelensky. Data Visualization with Microsoft Power BI // O'Reilly Media, Inc., 2024 – 461 p.
3. Bologna Smart City. Università di Bologna. https://www.unibo.it/it/studiare/dottorati-master-specializzazioni-e-altra-formazione/insegnamenti/insegnamento/2023/483960
4. Smart City Platform (Power Over Energy). https://www.poweroverenergy.org
5. Korepanov O.S. Innovative methodologies for the use of ‘open data’ for the needs of a ‘smart’ sustainable city // Management of economic processes at the macro and micro levels: problems and prospects for solution: III International Scientific and Practical Internet Conf. of Young Scientists (Lviv, 24.04.2018). Lviv: Lviv Polytechnic Publishing House, 2018. C. 56-58.
6. The concept of ‘KYIV SMART CITY 2020’. https://kyivcity.gov.ua/npa/pro_zatverdzhennya_kontseptsi_kiv_smart_siti_2020_348234/

AI AND IOT FOR SMART CITIES

The course aims to equip students with knowledge and practical skills in using artificial intelligence (AI) and Internet of Things (IoT) technologies for the development of smart cities. Specifically, it focuses on integrating modern solutions into urban management to improve the quality of life, optimise resource use and ensure the sustainable development of urban infrastructure.

Language of teaching	**Semester**	**ECTS credits / Type of course (mandatory, elective)**	**Course Coordinator**	**Student workload**
English	3	4 / elective	Olha Hamzah, PhD in Economics, Associate Professor	120 hours (22 h. lectures, 14 h. practical classes, 84 h. self-directed learning)

Learning outcomes On the completion of the course, students will be able to:	**Teaching methods, teaching and learning activities**	**Forms of assessment (continuous assessment CAS, final assessment FAS)**
1) Critically assess, select and complement scientific, methodological and analytical tools for the use of artificial intelligence and the Internet of Things in unpredictable environments.	Lectures with expert insights, case study discussions in small groups	Group work evaluation, peer reviews, practical training (CAS)
2) Identify organisational challenges and provide well-founded solutions through the use of artificial intelligence and the Internet of Things.	Lectures, discussion on the materials of the studied literary sources, problem-solving sessions, group projects	Participation in discussions, literature review reports (CAS)
3) Justify and manage projects, and generate entrepreneurial ideas utilizing artificial intelligence and the Internet of Things.		Business idea proposals, interim project reports (CAS)
4) Develop and implement organisational and business strategies based on artificial intelligence and the Internet of Things, aligned with the smart city concept, to enhance city or territory branding and effectively manage human capital while using legal and ethical frameworks.	Lectures, pitching sessions to present innovative business ideas, workshops	Solution/explanation of practical case studies, practical class, strategic planning reports (CAS)
5) Make informed decisions regarding change management driven by artificial intelligence and the Internet of Things, particularly in conditions of uncertainty or post-conflict recovery, by identifying key factors influencing change and contributing to sustainable development goals.	Lectures, strategic planning exercises, case study analysis Lectures, scenario-based learning, interactive discussions	Participation in discussions, case study reflections, scenario analysis presentation (CAS)

Assessment

Final grade is a result of 100% continuous assessment:
60% completion of individual practical tasks
20% creation and defence of the dashboard
20% final semester control (tests)
Assessment criteria:
There are 6 practical tasks of 10 points each - 60 points, an individual task to create a project and

defend it - 20 points, 20 test questions - 20 points.
Module 1 (max - 60 points). The student receives points for the module upon completion of 6 tasks, each of which is assessed at 10 points.
Criteria for assessment:
9-10 points - the student has done the task correctly and demonstrates a deep understanding of the material. All detailed conclusions are made.
7-8 points - the student has completed the task, but there are inaccuracies that cannot affect the final result. Generalised conclusions are drawn.
5-6 points - the student demonstrates insufficient understanding of the material. The task is completed partially or in a general way. The student has made partial conclusions.
3-4 marks - the student demonstrates ignorance of the material, contains significant errors, no conclusions.
1-2 points - the student demonstrates ignorance of the material. The task is not completed, and there are no conclusions.
0 points - the task is not fully completed by the student.

Contents

Topic 1. Introduction to artificial intelligence (AI) and the internet of things (IoT): concepts and applications in smart cities
Topic 2. Smart city architecture: components, technologies and infrastructure
Topic 3. Artificial intelligence in transport systems
Topic 4. Internet of things for environmental monitoring
Topic 5. The role of ai in ensuring city security
Topic 6. Smart buildings and energy systems
Topic 7. Data analysis using iot
Topic 8. The role of ai and iot in urban logistics and delivery
Topic 9. Ethics and security in the use of AI and IoT
Topic 10. Economic and social impact of AI and IoT in cities
Topic 11. Prospects of AI and IoT development for smart cities

Literature

Compulsory reading

1. Dias, T., Fonseca, T., Vitorino, J., Martins, A., Malpique, S., Praça, I. "From Data to Action: Exploring AI and IoT-driven Solutions for Smarter Cities." preprint arXiv:2306.04653, 2023.
2. Aslam, S., Ullah, H. S. "A Comprehensive Review of Smart Cities Components, Applications, and Technologies Based on Internet of Things." preprint arXiv:2002.01716, 2020.
3. Romanovas, M., Jakovlev, S., Semevsky, A. IoT for Smart Cities: Challenges and Opportunities. International Conference on Smart Cities, 2020.
4. Kim K., Ramos C., Mohammed S. Smart City and IoT. Future Generation Computer Systems, 2017.
5. Allam, Z., & Dhunny, Z. A. (2019). "On Big Data, Artificial Intelligence and Smart Cities." Cities, 89, 80-91.
6. Bibri, S. E., Krogstie, J. Smart Sustainable Cities of the Future: An Extensive Interdisciplinary Literature Review.Sustainable Cities and Society, 2017.
7. Batty, M. (2018). Inventing Future Cities. The MIT Press.
8. McAfee, A., & Brynjolfsson, E. (2017). Machine, Platform, Crowd: Harnessing Our Digital Future. W.W. Norton & Company.
9. Bris, A., & Cabolis, C. (2022). IMD World Competitiveness Yearbook 2022: Smart Cities Rankings. IMD Business School
10. Palma-Ruiz, Jesús Manuel & Saiz-Alvarez, José Manuel & Herrero-Crespo, Ángel. (2020). Handbook of Research on Smart Territories and Entrepreneurial Ecosystems for Social Innovation and Sustainable Growth. 10.4018/978-1-7998-2097-0.
11. On approval of the Concept for the Development of the Digital Economy and Society of Ukraine for 2018-2020 and approval of the action plan for its implementation: Order of the

Cabinet of Ministers of Ukraine dated 17.01.2018 No. 67-p. Official Bulletin of Ukraine. 2018. № 16. Pp. 70.
12. Sustainable Development Goals 2016-2030. URL https://www.undp.org/uk/ukraine/tsili-staloho-rozvytku (date of application: 09.01.2025).
13. On Local Self-Government in Ukraine: Law of Ukraine of 21.05.1997 No. 280/97-BP. Bulletin of the Verkhovna Rada of Ukraine. 1997. № 24.

Recommended reading

1. Davies, Cassie. (2024). Big Data Analytics for Smart Cities. International Journal of Computing and Engineering. 6. 14-29. 10.47941/ijce.2057.
2. Claus O. Wilke. Fundamentals of Data Visualization: A Primer on Making Informative and Compelling Figures 1st Edition // O'Reilly Media, 2019. - 387 p.
3. Alex Kolokolov, Maxim Zelensky. Data Visualization with Microsoft Power BI // O'Reilly Media, Inc., 2024 – 461 p.
4. Bologna Smart City. Università di Bologna. URL: https://www.unibo.it/it/studiare/dottorati-master-specializzazioni-e-altra-formazione/insegnamenti/insegnamento/2023/483960 (date of application: 09.01.2025).
5. Smart City Platform (Power Over Energy). URL https://www.poweroverenergy.org (date of application: 09.01.2025).
6. Korepanov O. S. Innovative methodologies for the use of ‘open data’ for the needs of a ‘smart’ sustainable city // Management of economic processes at the macro and micro levels: problems and prospects for solution: in: Proc. III International Scientific and Practical Internet Conf. of Young Scientists (Lviv, 24 April 2018). Lviv: Lviv Polytechnic Publishing House, 2018. C. 56-58.
7. The concept of ‘KYIV SMART CITY 2020’. URL: https://kyivcity.gov.ua/npa/pro_zatverdzhennya_kontseptsi_kiv_smart_siti_2020_348234/ (date of application: 09.01.2025)
8. Gábor Békés. Data Analysis for Business, Economics, and Policy // Cambridge University Press, 2021. - 738 p.
9. Kieran Healy. Data Visualization: A Practical Introduction 1st Edition // Princeton University Press, 2018. - 296 p.
10. Alberto Ferrari and Marco Russo. Analyzing Data with Microsoft Power BI and Power Pivot for Excel - Microsoft Press, Redmond, Washington, 2017. – 459 p.

Structure of the City Management Study Programme (Master's degree)

Semesters

	1	2	3
Teaching Units (Courses), 37 ECTS* Mandatory			
Courses of Professional Training	26	11	0
TOTAL	26	11	0
Teaching Units (Courses) 25 ECTS Elective**			
Courses of General Training	4	4	0
Courses of Professional Training	0	9	8
TOTAL	4	13	8
Internship 12 ECTS	-	Work Placement 6	Pre-Graduation Internship 6
Master's Thesis 16 ECTS	-		Master's Thesis 16

TOTAL	Mandatory	Elective	Internship	Master's Thesis
	37	25	12	16

*One ECTS credit = 30 academic hours.
**There are no restrictions of choice for students within each elective block. The only requirement for the student is to obtain the determined number of credits for each elective block.