

General information	Name, code and number of credits	EDU 631 ICT Provision and Management in Education, 6 ECTS
	Department	Education
	Program	Graduate
	Semester	Fall 2025
	Subject teacher (s)	Murad Aliyev
	E-mail:	aliyev.murad4320@gmail.com
	Lecture room	Neftchiler building
	Advice hours	Available online by appointment
Language of instruction	English	
Type of subject (compulsory/ elective)	Elective	
Resources	<p>Required reading materials:</p> <ol style="list-style-type: none"> 1. Bowen, J. A., & Watson, C. E. (2024). <i>Teaching with AI: a practical guide to a new era of human learning</i>. Johns Hopkins University Press. https://dx.doi.org/10.56021/9781421449227 2. Rajasekaran, S., Adam, T., & Tilmes, K. (2024). <i>Digital pathways for education: Enabling greater impact for all</i>. World Bank. http://hdl.handle.net/10986/42386 3. Republic of Azerbaijan. (2025, March 19). On approval of the “Artificial Intelligence Strategy of the Republic of Azerbaijan for 2025–2028”. Presidential Decree No. 530. Retrieved August 19, 2025 from https://e-qanun.az/framework/59218 4. OECD. (2023). <i>OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem</i>, OECD Publishing, Paris. https://doi.org/10.1787/c74f03de-en. 5. Paiano, S. (2011). How to evaluate the effectiveness of ICT in teaching, <i>Journal of e-Learning and Knowledge Society</i>, 7 (1), 41-47. 6. UNESCO. (2024). <i>AI competency framework for teachers</i>. Retrieved, from https://www.cedefop.europa.eu/files/unesco_ai_competency_framework_for_teachers.pdf 7. UNESCO. (2023). <i>Global Education Monitoring Report 2023: Technology in education – A tool on whose terms?</i> Paris, UNESCO. (Data related to Azerbaijan). <p>Note: Additional reading materials will be provided throughout the course.</p>	

Course description	<p>The course “ICT provision and management in education” has been designed to prepare students for leadership roles where they can effectively plan, implement, and maintain technology to support modern teaching, learning, and administrative functions. We emphasize practical skills (using real tools and platforms) and policy/management issues (planning, budgeting, governance) over purely theoretical content. International frameworks stress the importance of ICT for quality education. For example, UNESCO highlights ICT (and AI) as key to reaching SDG 4, noting that policies and strategies are central to maximizing ICT’s benefits while mitigating risks. In accordance with these frameworks, in Azerbaijan the Ministry of Science and Education has also formalized ICT goals (e.g. improving infrastructure, embedding digital skills in the curriculum and providing training resources). Thus we ground the course in global and local policy, while engaging students in hands-on projects (e.g. configuring e-learning platforms, designing ICT plans, exploring AI tools).</p>
Course objectives	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Analyze and apply international and national ICT policy frameworks to align technology initiatives with educational goals. • Evaluate and select appropriate educational technologies (infrastructure, platforms, digital tools, AI) to meet institutional needs and pedagogical objectives. • Develop solutions for challenges such as the digital divide, teacher training, and data security by proposing concrete policy or program interventions. • Lead ICT-driven change by integrating leadership and change-management principles into planning and implementation of digital education projects.
Learning outcomes	<p>By the end of the course, students will be able to:</p> <ul style="list-style-type: none"> • Analyze a given ICT-in-education strategy (e.g. UNESCO/OECD framework or national policy) and adapt its key elements to a local school setting, identifying implications for stakeholders. • Evaluate and justify the choice of specific hardware, software, and digital content tools for a defined educational scenario (e.g. choosing an LMS, collaboration platform, or AI tool for a course). • Create an interactive digital learning resource or configure an educational technology platform (e.g. an LMS module, multimedia lesson, or AI-supported activity) and explain how it enhances teaching and learning objectives. • Assess cybersecurity and privacy risks in an educational tech deployment and propose technical and policy safeguards to mitigate those risks.

	<ul style="list-style-type: none"> Formulate a strategic ICT implementation plan for an educational institution and present it as a formal proposal. 		
Teaching methods	Mini lectures	+	
	Case study analysis	+	
	Group discussions and presentations	+	
	Project-based learning	+	
Assessment	Components	Date/deadline	Percentage (%)
	Class participation		10
	Individual assignments (reflection papers, case study analysis)		20
	Group projects		10
	Mid-term exam		20
	Final project		40
Rules (Teaching policy and behaviour)	<p>1. Attendance and participation This class meets once a week, so every session is important. Students are expected to attend all classes, contribute actively to discussions and group work, and catch up on any missed material if absent. It is crucial to notice that absences affect your grade. Unexcused absences may lower your participation grade, since you miss both the content and the opportunity to earn participation points. Students are expected to make class sessions a priority and to manage any absences responsibly.</p> <p>2. Preparation Students must complete assigned readings before class, reflect on the content, and bring questions or ideas for discussion. Being prepared ensures active participation and deeper learning.</p> <p>3. Individual assignments and projects In this course, all assignments must be submitted on time. Because timely planning and management are central to ICT in education, late submissions will not be accepted. If an assignment is turned in late, 1 point will be deducted for each day past the deadline. Work submitted more than one week late will not be graded.</p> <p>Task 1 (Reflection): Write a 300–400-word reflection on which ICT area is most urgent for Azerbaijani schools to manage effectively and explain your reasoning.</p> <p>Task 2 (Case study analysis): Length: 1500 – 2000 words.</p>		

Guidance:

- Choose one developed country (e.g., Estonia, Singapore, Finland, South Korea, UK, or China) and summarize the main ICT-in-education strategies of the selected country (broad vision and goals) (1–2 pages) (Due Week 3).
- Identify 2–3 key policies or practices (specific actions, programs, or initiatives) in the selected country (1-2 pages) (e.g., teacher training, infrastructure, digital curriculum) (Due Week 4).
- Analyze how these strategies and policies could be applied or adapted to Azerbaijani education system and suggest 2-3 practical recommendations (Due Week 5).

Task 3 (Group projects):**Innovating Education in Azerbaijan (due Week 15)**

Objective: Work in groups to design a practical project that innovates Azerbaijan's education system using ICT. Each group may approach the project from different elements of ICT management (e.g., infrastructure, teacher professional development, curriculum integration, data governance, digital leadership, or assessment strategies).

Length: 2000-3000 words

Guidance:

- Short presentation (5–10 minutes) summarizing the project
- Identify a specific problem or gap in Azerbaijan's education system.
- Propose an ICT-based solution or initiative addressing this problem.
- Describe strategy, policies, resources, roles, and implementation steps.
- Discuss potential challenges, risks, and solutions.
- Include clear recommendations and expected outcomes.

4. Examinations

The course includes a midterm and a final exam. First, the midterm will cover material from the first half of the course. It will test your understanding of key concepts through short-answer and problem-solving questions. Second, the final exam will cover the entire semester's material. It will emphasize application and synthesis of concepts. In particular, the final may include open-ended questions that require written responses, asking you to apply and connect ideas

<p>5. Academic integrity All assignments and exams must be original. Plagiarism, cheating, or dishonesty will result in penalties according to university regulations. Always cite sources correctly. Furthermore, you may use Generative AI tools (e.g., ChatGPT) for ideas or exploration, but undisclosed or excessive use may lower your grade. Always indicate how AI contributed to your work, so your own learning and effort remain clear.</p> <p>6. Professional conduct Students are expected to respect peers, contribute constructively to group work, and use digital technologies responsibly (laptops/smartphones only for learning purposes). Professional behavior is required throughout the course.</p>			
Tentative schedule			
Week	Date	Topics to be covered	Tasks/Resources
1.	17.09.2025	Course orientation - Course structure, objectives, assessment.	1. Syllabus 2. UNESCO. (2018). <i>ICT competency framework for teachers: Version 3.</i>
2.	24.09.2025	Foundation of ICT provision and management in education - Defining ICT provision and management and its role in educational change.	1. A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2. 2. EU4Digital (2020). New organisational forms in support of ICT innovation: policy recommendations: Azerbaijan (Summary). Task 1 (Reflection paper): Which ICT area do you think is most urgent for Azerbaijani schools to manage effectively, and why? Length: 300-400 words
3.	01.10.2025	ICT policy and strategic planning – UNESCO ICT-CFT, DigCompEdu, Azerbaijan ICT strategy (comparative case analysis); needs	World Bank Group. EdTech Team. (2022). Knowledge pack: Digital teaching and learning. World Bank Group. Case study analysis (Part 1):

		assessment, stakeholder analysis, budgeting, and implementation roadmaps.	Choose one developed country (e.g., Estonia, Singapore, Finland, South Korea, UK, or China) and summarize the main ICT-in-education strategies of that country (1–2 pages)
4.	08.10.2025	Building ICT infrastructure – Hardware, software, and network planning for educational institutions	<p>World Bank Group. EdTech Team. (2022). Knowledge pack: Digital teaching and learning. World Bank Group.</p> <p>Case study analysis (Part 2): Identify 2–3 key policies or practices (specific actions, programs, or initiatives) in the selected country (1-2 pages) (e.g., teacher training, infrastructure, digital curriculum.</p>
5.	15.10.2025	Digital learning ecosystems – LMS, cloud platforms, and open educational resources integration	<p>1. World Bank Group. EdTech Team. (2022). Knowledge pack: Learning management systems for education. World Bank Group.</p> <p>2. World Bank Group. EdTech Team. (2022). Knowledge pack: Cloud for education. World Bank Group.</p> <p>Case study analysis (Part 3): Analyze how these strategies and policies could be applied or adapted to Azerbaijani education system and suggest 2-3 practical recommendations.</p>
6.	22.10.2025	Digital content creation - Interactive multimedia tools for teaching and learning.	<p>Canvas (LMS) https://canvas.instructure.com.</p> <p>Padlet https://padlet.com – free plan with 3 boards.</p> <p>Mentimeter https://www.mentimeter.com – free plan allows interactive polls, word clouds, quizzes.</p> <p>Google Data Studio (now Looker Studio) https://lookerstudio.google.com – free, requires Google account. Upload datasets (Excel/CSV).</p>

			Canva https://www.canva.com/education/ – free for educators (Canva for Education). Additional resources will be made available during class as needed.
7.	29.10.2025	Evaluating the effectiveness of ICT in education	Paiano, S. (2011). How to evaluate the effectiveness of ICT in teaching, <i>Journal of e-Learning and Knowledge Society</i> , 7 (1), 41-47.
Mid-term exam			
8.	05.11.2025	ICT governance and security (Technical and organizational) – Cybersecurity threats, infrastructure safeguards, access control, risk management, and institutional governance structures	1. Robert, J. (2025). EDUCAUSE Horizon Action Plan: Supporting Agency, Trust, Transparency, and Involvement. EDUCAUSE. 2. Malasowe, B. O., Aghware, F. O., Okpor, M. D., & Edim, E. B. (2024). Techniques and best practices for handling cybersecurity risks in educational technology environment (EdTech). 3. Küfeoğlu, S. (2022). Emerging Technologies (Cybersecurity). In: <i>Emerging Technologies</i> . Sustainable Development Goals Series. Springer, Cham. Online quiz: https://phishingquiz.withgoogle.com/
9.	12.11.2025	Digital leadership and change management – ICT manager as leader and change agent; strategies for organizational transformation	1. Rajasekaran, S., Adam, T., & Tilmes, K. (2024). Digital pathways for education: Enabling greater impact for all. World Bank. 2. OECD. (2020). ICT resources in school education: What do we know from OECD work?. 3. OECD (2023). OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem, OECD Publishing, Paris. Task (Group Project):

			Work in groups to design a practical project that innovates Azerbaijan's education system using ICT (Due Week 15).
10.	19.11.2025	Data privacy, regulation, and ethics (Legal and normative). GDPR, international privacy regulations, responsible data handling, professional ethics, and dilemmas in edtech	OECD (2023). OECD Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem, OECD Publishing, Paris. Practices: Group discussion on ethical dilemmas.
11.	26.11.2025	Artificial intelligence (AI) in education: Foundations AI literacy, competency frameworks, opportunities and limitations	<ol style="list-style-type: none"> 1. Bowen, J. A., & Watson, C. E. (2024). Teaching with AI: a practical guide to a new era of human learning. Johns Hopkins University Press. 2. Republic of Azerbaijan. (2025, March 19). On approval of the “Artificial Intelligence Strategy of the Republic of Azerbaijan for 2025–2028”. Presidential Decree No. 530. 3. UNESCO's AI Competency Framework for Teachers. (2018). Practice: Analysing the use of AI tools for educational settings
12.	03.12.2025	Artificial intelligence (AI) in education: Applications Prompt engineering, AI tools for instructional design and productivity	Robert, J., Muscanell, N., McCormack, M., Pelletier, K., Arnold, K., Arbino, N., Young, K., & Reeves, J. (2025). EDUCAUSE Horizon Report: Teaching and learning edition. EDUCAUSE. <i>Additional materials will be provided by the instructor.</i> AI resources: https://www.aiforeducation.io/ Practice: Students will draft and refine prompts that ask an AI to generate educational resources (e.g., quizzes,

			lesson plans, rubrics) for classroom use.
13.	10.12.2025	Artificial intelligence (AI) in education: Risks and responsibilities Algorithmic bias, fairness, transparency, and responsible use	<p>1. Bowen, J. A., & Watson, C. E. (2024). Teaching with AI: a practical guide to a new era of human learning. Johns Hopkins University Press.</p> <p>2. European Data Protection Board. (2025, January 23). AI: Complex algorithms and effective data protection supervision [Project completed by Dr. Kris Shrishak].</p>
14.	17.12.2025	Final project workshop. Guided development and peer feedback on project design	Presentation on how to present the projects.
15.	24.12.2025	Final project presentations and wrap-up. Submission, peer review, and reflective discussion	
Final exam			