

Navoi State University – Information Technologies in Education

Program Duration: 2 years

Mode of Study: Full-time

Program Code: 70610105

Total Workload: 120 ECTS credits

ECTS credits per semester: 30

Overview

The Master's degree program in **Information Technologies in Education** (Program Code: 70610105) at Navoi State University is a two-year, full-time academic program comprising a total workload of 120 ECTS credits (30 ECTS per semester). The program is designed to prepare highly qualified Educational Technology (EdTech) specialists, instructional designers, e-learning developers, educational software engineers, and researchers equipped with advanced knowledge in digital pedagogy, educational software architecture, learning management systems (LMS), and modern ICT tools.

The curriculum integrates advanced computer science concepts, instructional design frameworks, interactive media development, and digital learning analytics. Students gain hands-on expertise in developing e-learning platforms, multimedia educational content, automated assessment tools, adaptive learning algorithms, and virtual/augmented reality (VR/AR) applications for instruction. The program places strong emphasis on modernizing educational institutions, supporting distance learning infrastructure, and integrating digital solutions in accordance with national education development strategies in Uzbekistan.

Graduates of this program are fully equipped to pursue careers as EdTech specialists, instructional designers, LMS administrators, digital curriculum developers, educational IT consultants, research officers, and academic staff in higher education institutions, as well as to continue their studies at the doctoral (PhD) level.

Assessment

A comprehensive and multi-component assessment system is applied in the Master's program in Information Technologies in Education to ensure continuous learning, technical proficiency, instructional design competence, and academic rigor.

1. Course-based assessment

- **Presentations and seminars** – assess students' ability to present, discuss, and defend digital learning projects, software architectures, EdTech frameworks, and research literature in academic settings.
- **Mini-tests, quizzes, and oral exams** – monitor understanding of core theoretical concepts, instructional systems design, e-learning standards (SCORM/xAPI), and software development principles.

- **Midterm and final examinations** – evaluate theoretical depth, software development capabilities, and instructional design problem-solving through written exams and practical lab assignments.
 - **Portfolio assignments** – compile digital courseware, instructional videos, LMS module configurations, learning analytics reports, and research paper drafts demonstrating technical and pedagogical growth.
 - **Independent assignments** – encourage self-directed software development, e-content creation, usability testing, and educational data analysis tasks.
2. **Research-based assessment**
- **Scientific Research Work (ITI)** – evaluated through research project proposals, software prototype testing reports, and defense of EdTech research outcomes before the department.
 - **Scientific and Pedagogical Work (IPI)** – evaluated via teaching practice, preparation of digital training materials, online module design, and academic reporting.
 - **Master’s Thesis (MD/M)** – evaluated based on overall scientific rigor, software/pedagogical innovation, practical implementation, thesis writing quality, and public defense before the State Attestation Commission.
3. **Practice-based assessment**
- **EdTech and Industrial Practice** – evaluated through performance in IT departments of educational institutions, digital learning centers, software development companies, and EdTech startups, accompanied by comprehensive practice reports.
 - **Pre-graduation practice** – assessed on the deployment and testing of educational software/modules and final thesis preparation.
4. **Work-integrated learning**
- **EdTech Software & E-Learning Projects** – assessed on system functionality, pedagogical effectiveness, user experience (UX/UI) design, and alignment with national educational standards.

Academic Requirements

Admission Requirements-Applicants applying for the Master’s degree program in Information Technologies in Education (Code: 70610105) must satisfy the following criteria:

- **Educational background** – A Bachelor’s degree (or equivalent qualification) in computer science, information technology, informatics and teaching methods, educational technology, applied mathematics, or related engineering/pedagogical fields from a recognized higher education institution.
- **Academic excellence** – Applicants holding an honors diploma (*imtiyozli diplom*) are eligible for preferential admission according to current regulations of the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan.
- **Language proficiency** – A valid national or international certificate demonstrating at least B2-level foreign language proficiency (CEFR, IELTS, TOEFL, etc.) in English, Russian, or another recognized foreign language.

Graduation Requirements

To be granted the Master of Science degree in Information Technologies in Education, students are required to:

- Complete all compulsory and elective modules specified in the curriculum, accumulating a total of **120 ECTS credits** (30 ECTS per semester).
- Maintain standard academic standing according to Navoi State University regulations (passing marks in all subjects).
- Successfully complete all practical trainings (EdTech development practice, educational internship, and pre-graduation practice) with positive performance evaluations.
- Fulfill all research requirements (Scientific Research Work and Scientific-Pedagogical Work).
- Prepare, submit, and successfully defend a **Master's Thesis** demonstrating original research and practical software/pedagogical solutions before the State Attestation Commission.
- Pass all required state attestation processes.

Courses Offered

Year 1

Compulsory:

- Research Methodology and Scientific Writing in EdTech
- Reforms in the Education System under the Development Strategy of New Uzbekistan
- Advanced Instructional Design and Digital Pedagogy
- Development of Learning Management Systems (LMS) and E-Learning Platforms
- Software Engineering and Database Design for Educational Applications

Elective:

- Multimedia Content Creation and Interactive Media in Education
- Web and Mobile Application Development for Learning
- Educational Data Mining and Learning Analytics
- Regulatory Documents, Cyber Safety, and Copyright in Digital Education
- Artificial Intelligence and Adaptive Learning Technologies

Year 2

Compulsory:

- Virtual, Augmented, and Mixed Reality (VR/AR/MR) in Education
- Quality Assurance and Testing of Educational Software Systems
- Management of Digital Transformation Projects in Education

Elective:

- Game-Based Learning and Gamification Design
- Cloud Computing and Network Infrastructure for Educational Systems
- Distance Learning Systems Architecture and SCORM Standards
- Professional Morality and Ethics in Digital Environments
- Inclusive E-Learning Technologies and Assistive Tools
- STEM and Robotics Integration in Educational Curricula
- Open Educational Resources (OER) and E-Repository Architecture

Career Opportunities

Graduates of the Master's degree program in Information Technologies in Education acquire a unique blend of technical software skills and pedagogical expertise, enabling them to pursue careers across educational, corporate, IT, and governmental sectors:

- **EdTech Specialist / Instructional Designer** in higher education institutions, secondary specialized colleges, public school systems, and private academies.
- **LMS Architect / Administrator** managing digital learning environments (e.g., Moodle, HEMIS, Canvas) in educational institutions and corporate training departments.
- **E-Learning Content Developer / Multimedia Specialist** creating interactive course materials, digital textbooks, video lectures, and educational simulations.
- **Lecturer / Instructor in Educational Informatics** in universities, pedagogical institutes, vocational colleges, and specialized IT centers.
- **Educational Software Developer / Engineer** in EdTech companies, software development agencies, and IT startups focused on learning applications.
- **Digital Transformation Consultant / IT Project Manager** in the Ministry of Higher Education, Science and Innovation, Ministry of Preschool and School Education, and educational administration bodies.
- **Corporate Learning & Development (L&D) Technology Manager** in joint ventures, banks, telecommunication companies, and corporate academies.
- **Research Officer / Specialist** in centers for educational innovation, digital pedagogy laboratories, and scientific research institutes.

Tuition Fees

- **For local students:** Approximate annual tuition – 9,700,000 UZS.
- **For international students:** Approximate annual tuition – 774.28 USD.

(Note: Tuition fees are subject to adjustment in accordance with university policy and foreign currency exchange rates.)

Learning Outcomes

Master's Degree in Information Technologies in Education

Upon successful completion of the program, graduates will be able to:

1. Knowledge

- **1.1.** Demonstrate advanced knowledge of digital pedagogy, instructional design models (ADDIE, SAM), and learning theories applied to technology-enhanced environments.
- **1.2.** Understand principles of Learning Management System (LMS) architecture, database management, cloud services, and e-learning interoperability standards (SCORM, LTI, xAPI).
- **1.3.** Explain theoretical and technical foundations of multimedia design, web development, mobile learning, AI in education, and gamification mechanics.
- **1.4.** Demonstrate knowledge of educational data mining, learning analytics methodologies, assessment automation, and data privacy regulations.
- **1.5.** Recognize national legal standards, copyright laws, accessibility guidelines (WCAG), and strategic policies governing the digital transformation of education in Uzbekistan.

2. Skills

- **2.1.** Design, construct, and deploy online courses, interactive learning content, adaptive testing modules, and multimedia educational resources.
- **2.2.** Program, customize, and integrate software tools, web/mobile applications, and LMS platforms tailored to specific educational outcomes.
- **2.3.** Apply learning analytics and statistical methods to evaluate student engagement, monitor academic progress, and optimize e-learning workflows.
- **2.4.** Develop inclusive digital content and assistive tools that accommodate diverse learning needs and accessibility standards.
- **2.5.** Prepare technical documentation, instructional guidelines, software prototypes, research papers, and EdTech project proposals.
- **2.6.** Effectively communicate technical solutions, digital pedagogical strategies, and research findings to educators, software engineers, and administrative stakeholders in national and foreign languages.

3. Competences

- **3.1. EdTech & Research Competence** – Conduct independent, scientifically grounded research and development to address complex digital teaching and learning challenges.
- **3.2. Technical Leadership Competence** – Direct digital transformation initiatives, LMS infrastructure deployments, and EdTech software development projects in educational and corporate organizations.
- **3.3. Methodological & Pedagogical Competence** – Teach educational technology and informatics subjects in academic institutions using modern blended, distance, and interactive methodologies.
- **3.4. Innovation & Creativity Competence** – Conceptualize and implement novel e-learning solutions, VR/AR simulations, and gamified learning platforms to boost educational engagement.
- **3.5. Ethical & Digital Citizenship Competence** – Uphold rigorous ethical standards, data protection protocols, academic integrity, and digital accessibility in all educational technology applications.
- **3.6. Lifelong Learning Competence** – Continuously adopt rapidly evolving software technologies, emerging EdTech frameworks, and international digital pedagogy standards through ongoing self-education and professional networks.