AZERBAIJAN TECHNICAL UNIVERSITY

Advanced Digital Technology Policy

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1. CONTEXT AND PURPOSE

Azerbaijan Technical University (hereinafter referred to as “AzTU”) recognises advanced digital technologies as essential instruments for strengthening institutional effectiveness, academic quality, research excellence, operational efficiency, and sustainable development. The University is committed to integrating innovative digital solutions, including Artificial Intelligence (AI), Internet of Things (IoT), data analytics, digital management systems, and smart technologies into its governance, academic, research, and administrative activities.

Digital transformation is embedded within the University’s governance and quality assurance framework and supports evidence-based decision-making, institutional transparency, service enhancement, and continuous improvement. Through the implementation of integrated digital platforms and data-driven management systems, AzTU seeks to create a modern, efficient, and sustainable institutional environment that responds effectively to the needs of students, staff, researchers, and external stakeholders.

The purpose of this Policy is to:

- Strengthen evidence-based decision-making through data-driven management systems and analytics;
- Improve efficiency, transparency, and accountability in academic and administrative processes;
- Enhance teaching, learning, research, and innovation through the effective use of digital technologies;
- Support high-quality service delivery for students, staff, researchers, and external stakeholders;
- Promote responsible, ethical, secure, and sustainable use of emerging digital technologies;
- Foster continuous institutional improvement through digital transformation and innovation.

2. KEY TERMS AND DEFINITIONS

For the purposes of this Policy, the following definitions apply:

- **Artificial Intelligence (AI)** – Digital systems capable of performing tasks that typically require human intelligence, including data analysis, prediction, pattern recognition, automation, and decision support.
- **Internet of Things (IoT)** – A network of connected devices, sensors, equipment, and systems that collect, exchange, and analyse data to improve operational efficiency, monitoring, and resource management.
- **Digital Transformation** – The integration of digital technologies into institutional processes, governance, teaching, learning, research, and service delivery.
- **Learning Analytics** – The collection, analysis, and interpretation of educational data to improve student engagement, academic performance, and learning outcomes.
- **Decision Support System** – A digital platform or analytical tool that assists institutional leaders and managers in making informed decisions based on performance indicators and institutional data.
- **Smart Campus Technologies** – Integrated digital and sensor-based systems that support efficient management of campus facilities, resources, infrastructure, and services.

3. APPLICABILITY

This Policy applies to all academic departments, administrative units, research centres, laboratories, support services, students, academic staff, researchers, and external stakeholders engaged in activities involving advanced digital technologies within Azerbaijan Technical University.

The Policy covers all institutional digital systems, platforms, databases, software applications, smart technologies, and data-driven management processes implemented across the University.

All members of the University community are expected to utilise digital technologies in accordance with institutional regulations, ethical standards, and the principles established in this Policy.

4. DIGITAL TECHNOLOGY GOVERNANCE FRAMEWORK

AzTU maintains a structured governance framework for the implementation, monitoring, and continuous improvement of advanced digital technologies.

Institutional oversight is provided through the Quality Assurance and Rankings Committee (QARC), University Administration, and relevant institutional bodies responsible for ensuring that digital technologies support institutional objectives, quality standards, and strategic priorities.

At faculty and departmental levels, Deputy Deans, Heads of Chairs, Programme Coordinators, and scientific-methodological bodies utilise digital systems and analytical tools to monitor academic performance, curriculum implementation, learning outcomes, stakeholder satisfaction, and improvement activities.

The governance framework ensures that digital technologies contribute effectively to institutional planning, quality assurance, operational management, research administration, and service delivery.

5. ADVANCED DIGITAL TECHNOLOGY INFRASTRUCTURE

AzTU utilises integrated digital platforms and management systems to support institutional operations, decision-making, monitoring, and service delivery.

Key digital systems include:

- Electronic Management System (EMS) for academic and administrative workflow management;
- Centralised Electronic Information System (CEIF/MEIS) for document submission, review, approval, and traceability;
- Researcher Platform for research performance management and analytics;
- Internal Grant Platform for administration, evaluation, and monitoring of research grants;
- Plan and Reporting Platform for institutional planning, activity monitoring, and performance reporting;
- CLO–PLO Platform for curriculum mapping, learning outcomes assessment, and programme improvement;
- Internship Platform for coordination and monitoring of work-based learning activities;
- Alumni Tracking Platform for graduate monitoring, alumni engagement, and employer feedback collection;

- Learning Management Systems (LMS) and Microsoft Teams for digital learning, communication, assessment, and student engagement monitoring.

The University may additionally implement AI-based analytical tools, IoT-enabled monitoring systems, predictive analytics platforms, smart campus technologies, and other emerging digital solutions as institutional needs evolve and technological opportunities expand.

6. PRINCIPLES FOR THE USE OF ADVANCED DIGITAL TECHNOLOGIES

6.1. Evidence-Based Decision-Making

The University will utilise advanced digital technologies to support evidence-based decision-making at institutional, faculty, department, and programme levels. Data generated through integrated digital platforms will provide timely and reliable information for strategic planning, performance monitoring, quality assurance activities, resource allocation, and institutional development. Digital analytics and reporting tools will assist managers and decision-makers in identifying trends, evaluating performance, and implementing improvement actions based on objective evidence, including student enrolment trends, graduation and retention rates, learning outcomes achievement, research performance indicators, stakeholder satisfaction, workload allocation, infrastructure utilisation, and institutional reporting. Digital systems will further support governance processes, committee reviews, accreditation activities, and strategic planning exercises.

6.2. Operational Efficiency

The University will employ digital technologies to improve the efficiency and effectiveness of academic and administrative processes. Automated workflows, integrated management systems, and digital communication tools will reduce administrative burden, eliminate duplication of effort, improve process coordination, and accelerate institutional operations. Continuous optimisation of digital systems will support electronic document management, reporting processes, grant administration, internship monitoring, curriculum assessment, staff performance monitoring, and the efficient utilisation of institutional resources.

6.3. Service Excellence

Advanced digital technologies will be used to enhance the quality, accessibility, and responsiveness of services provided to students, staff, researchers, alumni, and external stakeholders. Digital platforms will facilitate faster access to information, more efficient communication, streamlined administrative procedures, and improved user experience. The University will continuously evaluate user needs and feedback to strengthen service delivery through technological innovation. It includes digital academic advising, electronic application and registration processes, virtual learning environments, alumni engagement systems, employer feedback platforms, and digital communication channels that improve accessibility and user satisfaction.

6.4. Transparency and Accountability

Digital systems will support transparent and accountable institutional governance by ensuring that academic and administrative processes are properly documented, traceable, and consistently applied. Electronic records, workflow monitoring, and approval mechanisms will provide clear evidence of

decisions, actions, and responsibilities. This approach will strengthen institutional integrity, reduce procedural inconsistencies, and support effective internal oversight, including policy approvals, committee decisions, quality assurance activities, curriculum revisions, research project evaluations, grant allocation procedures, and institutional reporting processes. Electronic audit trails and document management systems will support accountability and facilitate internal and external reviews.

6.5. Ethical and Responsible Use

The University will promote the ethical, responsible, and human-centred use of advanced digital technologies, including Artificial Intelligence applications. Digital technologies will be implemented in ways that support fairness, integrity, transparency, academic values, and professional standards. Human oversight will remain an essential component of all critical academic, administrative, and strategic decision-making processes supported by AI-driven tools. AI-assisted analytics, decision-support systems, learning analytics, and research evaluation tools may be utilised where appropriate, while AI-generated outputs will be reviewed by qualified personnel before being used in institutional decision-making, student assessment, personnel evaluation, or strategic planning activities.

6.6. Data Security and Privacy

The University will ensure that all digital technologies and information systems operate in accordance with institutional data protection, cybersecurity, and information governance requirements. Appropriate technical and organisational measures will be implemented to safeguard institutional data, protect user privacy, maintain data integrity, and minimise risks associated with unauthorised access, misuse, or loss of information. These measures may include secure authentication systems, controlled user access permissions, encrypted data storage, regular system backups, cybersecurity awareness activities, and monitoring mechanisms designed to protect academic, research, administrative, and personal information.

6.7. Continuous Innovation

The University will foster a culture of innovation and continuous improvement by encouraging the exploration, evaluation, and adoption of emerging digital technologies. Pilot initiatives, technology-enhanced practices, and digital transformation projects will be supported to improve academic quality, research performance, operational effectiveness, and institutional competitiveness. Regular reviews of technological developments will help ensure that AzTU remains responsive to evolving digital opportunities and challenges. This may involve the implementation of Artificial Intelligence, smart campus technologies, predictive analytics, Internet of Things (IoT) applications, digital sustainability monitoring systems, advanced learning technologies, and innovative research management tools that contribute to institutional development and service enhancement.

7. APPLICATION OF AI AND SMART TECHNOLOGIES

Artificial Intelligence and smart digital technologies may be utilised to support:

- Academic performance monitoring and learning analytics;
- Institutional planning and forecasting;
- Quality assurance and programme evaluation;
- Research performance analysis and benchmarking;

- Administrative process automation;
- Resource management and optimisation;
- Smart campus operations and infrastructure monitoring;
- Sustainability performance measurement and reporting;
- Student support services and stakeholder engagement.

AI-generated insights will be used as decision-support tools and will complement, rather than replace, professional judgment, institutional oversight, and established governance procedures.

8. IMPLEMENTATION AND RESPONSIBILITIES

University Administration will provide strategic leadership, institutional oversight, and resource allocation necessary for successful digital transformation initiatives.

The Quality Assurance and Rankings Committee (QARC) will monitor the effectiveness of digital systems in supporting institutional quality assurance, performance management, and continuous improvement.

Academic and administrative units will be responsible for the effective use of digital technologies, ensuring data accuracy, compliance with institutional requirements, and implementation of improvement actions.

Information Technology and Digital Transformation units will maintain digital infrastructure, cybersecurity measures, system integration, technical support services, and technology upgrades.

Students, academic staff, researchers, and administrative personnel will use digital systems responsibly and contribute to the effective implementation of this Policy.

9. MONITORING, ACCOUNTABILITY, AND RISK MANAGEMENT

The implementation and effectiveness of this Policy will be monitored through institutional quality assurance processes, digital system performance indicators, stakeholder feedback mechanisms, and periodic internal reviews.

Monitoring activities will evaluate:

- Effectiveness of digital technologies in supporting decision-making;
- Improvements in operational efficiency;
- Quality and accessibility of institutional services;
- User satisfaction and engagement levels;
- Data security and regulatory compliance;
- Progress toward digital transformation objectives.

Potential risks related to cybersecurity, data integrity, system reliability, technology adoption, and operational continuity will be identified, assessed, and mitigated through appropriate preventive and corrective measures aligned with the University’s governance and risk management framework.

10. POLICY EVOLUTION

This Policy will be reviewed at least every two years or earlier if required by technological developments, regulatory changes, institutional priorities, or emerging digital transformation opportunities.

The previous version of the Policy will remain in force until a revised version is approved by the University Council and formally adopted by Azerbaijan Technical University.

AZTU

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SUSTAINABLE DEVELOPMENT GOALS

