

Azerbaijan Technical University

DEVELOPMENT STRATEGY for 2021-2030

Goal: The main goal of AzTU's development in the next decade is to offer smart solutions for the technological future on the digital platform and provide specialist training in this direction.

Mission: To be a leading university in the field of engineering sciences and application of smart technologies in the region.

The main strategic goals: Innovative-enterprising academic who teaches the development of industry and the solution of issues meeting the technological future, to establish a research and entrepreneurial university with graduate and student staff, to raise the level of prepared engineering personnel to the level of international standards.

Slogan: (3D: design, development, deploy).

1.1. 1. To provide quality education with modern standards at all levels of education for the acquisition of global competences.

- *1.2. To ensure the unity of the teacher and the learner in the teaching process, to align teacher training programs and curricula with global perspectives:*
- *Giving the main place to specialty subjects in educational plans, increasing the amount of practical lessons, reducing the amount of teaching hours in general and providing support to the research process;*
- *Creation of a Teaching and Learning Center meeting modern challenges in 2022 and*

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ensuring methodological training of professors and teachers in this direction for each specialty (programme) by 2030;

- The main task of the teacher is to be able to teach and apply, to organize the learning process in the direction of the formation of skills and competencies;

1.2. *By becoming a full-fledged member of CDIO in 2022, in 2023 in a number of specialties, starting the training of a new generation of specialists with this approach, ensuring that engineering training is conducted on the basis of CDIO (Conceiving, Design, Implementing and Operation) standards by 2030.*

- *To implement teaching and learning at all levels of higher education for learners and educators, taking the needs of the economy and society into consideration in the context of global competences.*

- Taking into account that the provision of connected and continuous education in engineering training at secondary and higher education is the basic principle of the labor market in the formation of global competences, by ensuring that the skills that require practical, easy to perform, standardized competence for the labor market are imparted in secondary vocational schools in a shorter period of time, to implement integration between university and secondary education levels;

- Creation of joint cooperation with business participants, educational production bases to strengthen university-industry cooperation;

By 2024, the completion of the creation of a single teaching-methodical complex to ensure the integration

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of "vocational-sub-bachelor-bachelor-master-doctorate" educational stages and levels; taking into account the points of ensuring continuity at the level of further education during the preparation of curricula and subject programs of secondary specialized education;

- Instilling creative knowledge in secondary schools through a career-oriented promotion platform, establishing a feedback relationship between AzTU and secondary schools, organizing "Young Technicians" Internet High School (AzTU Academy), "Young Engineers", "Young Robots" clubs (virtual), continuous with secondary schools regularly conducting olympiads, contests or intellectual contests to establish continuous relations;
- By 2030, increasing the intellectual and personnel potential by implementing a perfect "Talent Search and Development" project within the university and in secondary schools;
- Establishing a Vocational Education Center in the 2021-2022 academic year, starting teaching from 2022 and developing it in regional and various fields, building a flexible platform for the education of citizens in social needs;
- Preparation of necessary documents for the opening of AzTU Branches in Central Asian countries and other places, and determination of the action plan.

To provide professional skills, interdisciplinary knowledge, research methods, "soft skills", innovation and entrepreneurship habits for future career:

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- to provide each student with a road map reflecting the content of his future education in his specialty and employment prospects both in his specialty and in related fields, and to start training in his specialty from the first year;
- to ensure the compatibility of educational programs with the employer's competencies, to expand the construction of laboratories of leading companies at the university, to achieve that the volume of practical training not being less than 50%; teaching the relevant subjects in order for students to meet the modern demands of society, in the first and second years, the development of business communication, emotional intelligence, gaining a competitive advantage in the labor market, creating one's image and teaching team work methods;
- teaching the subject "Building one's own business" for all majors in the fourth year, and as a result, evaluating the knowledge gained by students on the basis of the business plan prepared by them in order to realize their own business idea;
- confirmation of practical knowledge, skills and habits of graduates in their specialties with international certificates of leading companies in those fields, including conducting relevant work for opening their authorized test centers;
- expanding the range of cooperation related to specialties in order to create new directions for students to undergo high-quality practice and get a job in the future and conducting active work with them;

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- Conducting consistent PR work on dual diploma programs of AzTU to attract talented young people to engineering majors at AzTU.

2.1. To teach how to solve the real problems created by the world industrial revolution.

- *To implement the teaching and learning process directly by conducting research:*
- Achieving an approach in the context of sustainable development at the master's and doctoral levels of higher education; Meeting the demand for scientific and pedagogical personnel in Azerbaijan and the region, constantly increasing the quality and efficiency of education and research at the doctoral level;
- to change into the project and problem-based learning methodology an integral part of the curriculum based on the country's priorities; to use the experience of regional universities, especially Turkish and German universities in this field, and utilize the support of Turkish science and technology centers;
- To achieve higher quality education for more students at all levels like highly qualified researchers, entrepreneurs, managers graduates working in Azerbaijan and foreign countries, together with AzTU supporters and other partners; To be ready to meet the challenges arising from the emergence of multidisciplinary specialties and professions at the intersection of several specialties and

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disciplines by 2025, Mastering the concept of "specialties of the future";

- To carry out activities in the direction of specialist training for new multidisciplinary specialties, renewal and replacement of existing specialties, taking into account the expected rapid application of artificial intelligence, robotization and automation by 2030.

□ ***Məzunlarımızın tədqiqatçı və sahibkar kimi qlobal məkanda və ölkəmizdə texnoloji innovasiyalara töhfə vermələri üçün mühit yaratmaq:***

- To shape our graduates with high intellectual and practical engineering skills, self-management and communication skills, and the determination to be able to solve real-world problems with initiative. Prepare to take responsibility for the development of Azerbaijan's economy in case of high demand in the international labor market;
- To ensure the establishment of the AzTU Alumni movement by 2023, to constantly create AzTU-Alumni feedback with the excellent Alumni Association platform; Contribute to the organization of teaching work to correctly define the expectations of the industry by fully establishing "feedback" work with graduates;
- To establish a feedback mechanism that monitors the employment of graduates by 2023, and to achieve employment of more than 70% of them in their specialties by 2030;

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- To develop teaching and learning with parties at AZTU in order for our graduates leave with a modern and high-quality professional education based on the natural and social sciences. To realize the impact of the ideas and knowledge of our best researchers on the economy and society through our graduates.

2.2.To support a modern university experience that is fully open to the public, creating ICT and innovative skills, knowledge and practical skills:

- Acquiring the digital skills according to the requirements of the modern era by the majority of staff and students by 2030, creating an ecosystem that facilitates the learning of more applicable and updated programming languages;
- To create engineering design, computer and language skills, as well as program packages in various directions of the engineering field, specialized laboratories and parks that form engineering habits of students, organization of creative clubs and socially important subjects for the acquisition of technical knowledge.

3.1To promote research supporting high-tech industry as the basis of quality teaching, innovation and initiative.

- To raise research standards to those of industry and advanced technology universities:
- to encourage the quality education, entrepreneurship formation of an innovative environment, taking into account the preparation of strategic documents arising from the Sustainable Development Goals adopted by

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the UN General Assembly, the implementation of high-tech development in Azerbaijan, by ensuring the conduct of quality research aimed at solving the issues arising from the innovative technological development of our country, the development of industrial solutions,

- To permanently support the implementation of research works, especially dissertation works, on the basis of real projects, the application and publication of the results at AzTU;
- To ensure the publication of Scientific Works journal of AzTU in accordance with modern standards, the formation of modern journals of international status in the field, the publication of research results in high-status journals of the university and the world;
- To achieve the establishment of a scientific journal with the status of an International index journal by 2025.

3.2. *To conduct research on the basis of project-based competitive funding:*

- Supporting sustainable, responsible and high-level research groups that contribute to the development of the economy, society, as well as the educational process and service areas at AzTU;
- To reduce risks for innovative thinking and enterprising research groups at AzTU and to strengthen cooperation between research groups in key research areas for the university, constantly develop the motivational funding model within the university; To increase competitive funding in the university and to create a mechanism for supporting

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research groups applying for funding in key areas for the university;

- To provide at least 3 project-based competitions in various fields nominations that meet real problems in order to support researches, and stimulation of project teams every academic year.

3.3. ***Constantly increasing research revenues based on the university-industry business model:***

- To develop a career model to support skilled, enterprising and results-oriented members of our academic community who contribute to research, teaching and learning as well as community service. Stimulate talented young researchers to ensure that they develop self-management skills in the short term and are supported as members of the university community;
- By 2030, increase the annual income from the application of research and innovation of AzTU to the limit of 20% of the total annual income.

3.4. ***Continue to support leading scientists by involving them in more research:***

- Research and education at AzTU should be open to all the public, educational materials, research results, business partners should be accessible to pupils, students and the public in general;
- Providing stimulating support to the scientific schools of leading scientists, helping to implement joint work with the world's leading higher education institutions, and preventing the "brain drain".

4.1. To contribute to the economy and society by continuously supporting innovation and entrepreneurship.

- Continuously expand university-business cooperation by supporting project-based research and directing it to industry;
- To strengthen our regional position by cooperating with the region's prestigious universities, research centers and companies; AzTU as the main educational and research center that meets the personnel and research needs of the majority of the base sectors of the economy of Azerbaijan by examining the basic needs of the economy and continuous provision with modern technologies;
- To ensure the creation of start-up and spin-off innovative entities in order to create added value of research results at AzTU;
- To contribute to Azerbaijan's national security, health technologies and energy security; as AzTU, to get closer to the research areas of the region, to participate in its formation, to be a pioneer in achieving a neutral climate in the digital society;
- To preserve the Azerbaijani language and culture, primarily by providing higher education in the Azerbaijani language in the field of engineering, AzTU contributes to local product production, creating start-ups and spin-offs, and developing the research field of the Azerbaijani language.
- ***To support the creation of intellectual property and industrial application of research results:***

- Investing more in creating intellectual property, protecting intellectual property created as a university that supports the application of our research achievements to create a healthier society;

- To prepare a working platform at AzTU to join research consortia created by funds that support research that will ensure the future scientific and technical development of the world until 2025; to achieve participation in solving industrial and technological problems.

4.2. *To support innovative and entrepreneurial initiatives based on professional development programs, to strive to increase the influence of the university in the region and in our country:*

- To promote the recognition of AzTU in Azerbaijan and the international space, the academic community of the university to communicate with the general public, to constantly explain scientific achievements, as well as to increase interest in research and engineering education;

- Supporting the establishing the university's relations on a global and regional level and establishment of various events, creative groups, networks in technological directions.

4.3. **Building a Sustainable and Inclusive University that meets the global demands of the 21st century.**

- To develop a smart university building that provides equal and quality education for all, leaving no one behind on the digital platform:

- To increase the application of distance education technologies by using the possibilities of digitalization by 2030, to work on new generation teaching methodologies to ensure the mastery of subjects online, to ensure the creation of online degree programs and electronic content in the teaching-methodical complex of subjects

- To support the development of the university by establishing a comprehensive and value-based management of the university, directing management decisions at all levels to high-quality teaching, learning and research;

- To encourage the comprehensive self-development of all, by appreciating the close-knit AzTU family of healthy and business friendly relations, academic freedom of thought, pioneering research and innovation as the driving force;

- To support the realization of new ideas and practical thinking, based on high academic culture and problem-solving research of the university.

- To value our history, our university and the members of the university community who develop and support engineering and technology education in Azerbaijan, to act as a bridge between different disciplines and academic generations and to create all opportunities for our graduates to contribute to the development of AzTU. To benefit from the assimilation of international

experience while learning the Azerbaijani language and traditions of the new members of the academic staff who are attracted to AzTU from outside Azerbaijan

□ ***Continually develop human values such as mutual respect, self-confidence, cooperation and academic courtesy, creating equal opportunities for all and protecting human dignity by developing global competence:***

□ To provide financial support for high-level practical research and innovative solutions in accordance with modern trends at AzTU, as well as to prepare flexible, transparent, mutual cooperation, integration and support services that meet the expectations of the academic community;

□ Support the development and adoption of "scientific ethics" guidelines for academic staff in 2021 and provide institutional and other support for this.

5.3. ***To consider the formation of infrastructure with modern standards for the development of teaching, research and innovation as one of the main tasks:***

□ To attract high achievers to work and study at the university and support interaction with university graduates, future students and business people in order for university ecosystem is comfortable and sustainable, both physically and virtually;

□ To ensure the creation of a modern electronic library information system open to students 24 hours a day by 2023;

□ To develop the infrastructure of the university campus and turn it into an attractive and maximally useful space for creativity for students and academic staff. To achieve the creation of a modern mini-dormitory (guest

house) for students (about 250 people) in the 3rd building of AzTU Campus by 2023;

- To achieve the construction of a student dormitory campus and its reconstruction in accordance with modern requirements, while at the same time achieving the creation of an environment for creativity by 2024;
- To ensure the establishment of innovation parks, to take advantage of international experience in this direction. To ensure the construction of AzTU's Technopark by 2025 and lay the groundwork for its development in the next 5 years.