

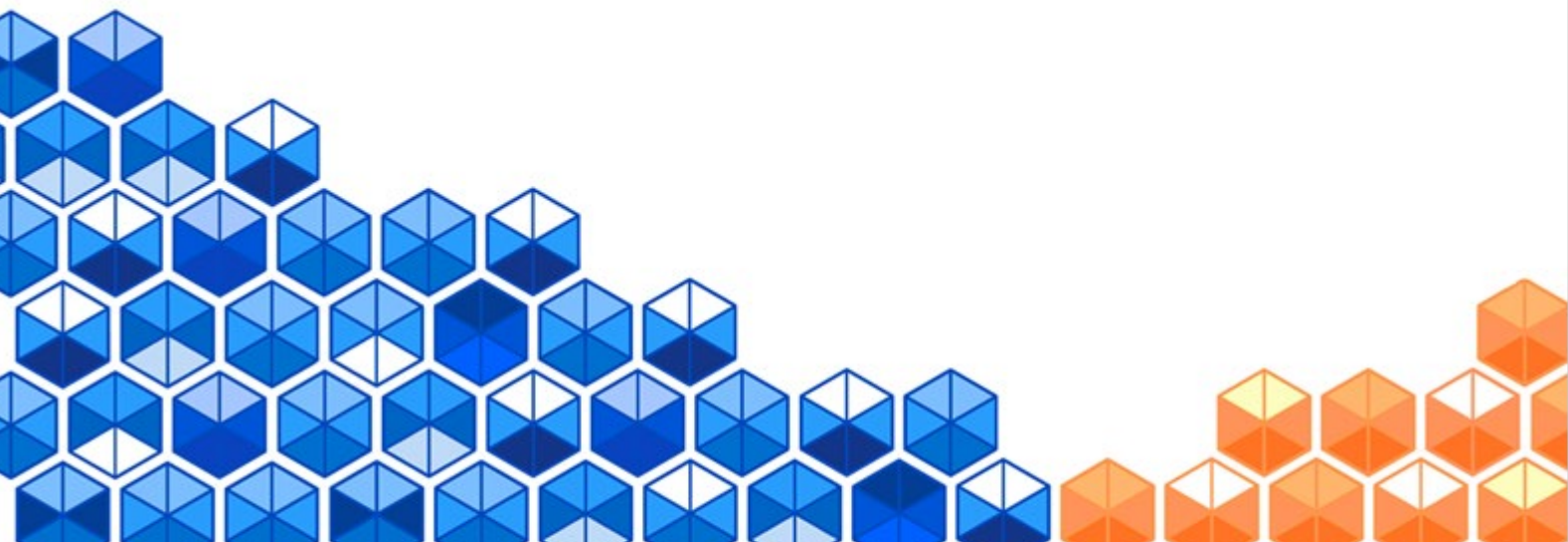
IQAA

**INDEPENDENT AGENCY
FOR QUALITY ASSURANCE IN EDUCATION - IQAA**

**REPORT
ON THE EXTERNAL AUDIT
BAKU STATE UNIVERSITY
PROGRAM ACCREDITATION**

**7005011 – Mathematical Analysis
7005011 – Discrete Systems**

Astana, 2026



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**LEVEL OF CONFORMITY OF THE SELF-EVALUATION REPORT
TO THE ACTUAL STATE OF THE EDUCATIONAL PROGRAM
7005011 MATHEMATICAL ANALYSIS FOR EACH STANDARD**

Standards	Indicate the level of compliance of the self-assessment report with the actual state of affairs at the university for each standard			
	Full compliance	Significant compliance	Partial compliance	Non-compliance
<i>Standard 1</i> Policy on Educational Program Quality Assurance and Academic Integrity	+			
<i>Standard 2</i> Curriculum Development and Approval, Information Management	+			
<i>Standard 3</i> Student-centered learning, teaching, and assessment	+			
<i>Standard 4</i> Admissions, Academic Performance, Recognition, and Certification	+			
<i>Standard 5</i> Faculty	+			
<i>Standard 6</i> Learning Resources and Student Support	+			
<i>Standard 7</i> Public Outreach the public	+			



**LEVEL OF CONFORMITY OF THE SELF-ASSESSMENT REPORT TO THE
ACTUAL STATE OF AFFAIRS OF THE EDUCATIONAL PROGRAM
7005011 DISCRETE SYSTEMS FOR EACH STANDARD**

Standards	Indicate the level of compliance of the self-assessment report with the actual state of affairs at the university for each standard			
	Full compliance	Significant compliance	Partial compliance	Non-compliance
<i>Standard 1</i> Policy on Educational Program Quality Assurance and Academic Integrity	+			
<i>Standard 2</i> Curriculum Development and Approval, Information Management	+			
<i>Standard 3</i> Student-centered learning, teaching, and assessment	+			
<i>Standard 4</i> Admissions, Academic Performance, Recognition, and Certification	+			
<i>Standard 5</i> Faculty	+			
<i>Standard 6</i> Learning Resources and Student Support	+			
<i>Standard 7</i> Public the public	+			



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CHAPTER 1

CONTEXT AND OBJECTIVES OF THE VISIT

Introduction

The external expert group's visit to Baku State University as part of the international program accreditation process took place from March 12 to 13, 2026. The external audit was conducted in accordance with the Program developed by the IQAA agency and agreed upon with the university. All materials necessary for the work of the external expert group (EEG): the visit program, the self-assessment report for program accreditation, the composition of the external expert group, the list of interview participants, the guidelines for organizing and conducting the external evaluation, the expert code of ethics, and the EEG accreditation report template were provided to the members of the expert group prior to the start of their work at the educational institution, which ensured timely preparation for the external evaluation procedure.

The self-assessment report on the educational programs of Baku State University contains a sufficient amount of information presented in accordance with program accreditation standards; it identifies strengths and weaknesses, as well as external threats and opportunities for risk management and the university's further development.

In accordance with the EEG visit program, a visual inspection was conducted, which allowed the members of the expert group to gain a general understanding of the organization of the educational, methodological, and research processes, as well as the material and technical infrastructure, and to determine its compliance with standards. In addition, meetings were held with the university administration, vice-rectors, deans of faculties and department heads, faculty members, representatives of academic schools, undergraduate and graduate students, alumni, and employers. The experts inspected the university's structural units, the academic library, sports, recreational, and medical facilities, dining areas, and the student dormitory.

During the external audit, the experts reviewed the university's regulatory documentation to gain a more detailed understanding of document management, teaching and methodological, research, and logistical support, the university's website, its navigation and content, as well as the representation of the university's educational programs on the website's pages and tabs, in the media, and other electronic resources.

The planned activities for the external visit facilitated a more detailed understanding of the university's structure and its operations, and allowed external

experts to conduct an independent assessment of the alignment of the self-assessment report on educational programs with the actual state of affairs at the university and the standards of program accreditation.

Key Characteristics of the University

Full name of the educational institution: Baku State University. Year of foundation and establishment: 1919.

The mission of Baku State University is to train highly qualified, competitive in the domestic and international labor markets, and imbued with a patriotic spirit—scientific, pedagogical, and engineering-technical personnel—based on the acquisition of fundamental knowledge and innovative research skills in the field of multidisciplinary lifelong education and scientific research in accordance with international standards.

The university conducts educational activities at all levels of higher education, as well as pre-university and continuing education.

In the field of scientific activity, Baku State University conducts fundamental, theoretical-methodological, pedagogical-methodological, and applied scientific research, as well as the implementation of research results into practice and the industrial and innovative development of the country.

The highest governing body of the university is the Academic Council.

The academic structure of Baku State University includes 16 faculties that train specialists in 55 fields at the bachelor's level and in 153 fields at the master's level across various academic disciplines; 4 institutes; a rich academic library; 21 scientific, methodological, and practical journals published by the university; and a university clinic that serves the faculty, staff, and students of the university.

Baku State University has a well-developed and functional infrastructure that meets modern requirements. The University comprises four academic buildings equipped with lecture halls and computer labs featuring state-of-the-art technical equipment. All university buildings are connected to a single corporate computer network, ensuring their integration into a common information space. The University Library, equipped with electronic reading rooms and providing free Internet access, creates the necessary conditions for the effective organization of students' academic and research activities. The educational television studio provides additional opportunities for implementing innovative forms of organizing the educational process.

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CHAPTER 2

EXTERNAL AUDIT REPORT BY THE EXPERT GROUP

Introduction

An external audit was conducted on the master's degree programs 7005011 "Discrete Systems" and 7005011 "Mathematical Analysis" offered at Baku State University. The purpose of the external audit was to comprehensively assess the quality of the implementation of these programs, their compliance with international standards for program accreditation, and to analyze the effectiveness of the internal quality assurance system for education. This structure of the introductory section fully corresponds to the example report provided by our colleagues.

During the audit, the expert group focused on the following key aspects: the content and structure of the educational programs; the learning outcomes of master's students and the level of development of their professional competencies; students' research activities; the provision of resources and infrastructure for the educational process; interaction with employers and other stakeholders; and the transparency and accessibility of information about the programs.

Baku State University is one of the leading higher education institutions in the Republic of Azerbaijan and a recognized scientific and educational center in the region. The educational programs "Discrete Systems" and "Mathematical Analysis" are implemented within a framework of sustainable institutional development, a well-established scientific base, and a functioning digital educational environment.

Standard 1. Policy on Educational Program Quality Assurance and Academic Integrity

Evidence and Analysis

Baku State University considers quality assurance in education to be one of the priorities of its activities. The university has developed and implemented an institutional policy on quality assurance, enshrined in the document *Policy and Standards for Quality Assurance in Education at Baku State University*, approved by a decision of the Academic Council. This document defines the basic principles, mechanisms, and approaches to ensuring the quality of the educational process and aims to foster a sustainable culture of quality.

The primary goal of BSU's quality assurance policy is to train qualified specialists who meet international standards by ensuring the effective integration of science, education, and industry. At the heart of this mission lies the development of human capital that is proficient in modern technologies, possesses innovative thinking, is capable of solving society's socio-economic challenges on a scientific basis, and remains competitive in the labor market. In accordance with the BSU Charter, the quality policy, based on academic integrity, is one of the key elements of the university's strategic management. To ensure the quality control of

educational programs, various structural units operate at the university, including the Quality Assurance Center, the Center for the Organization and Management of the Educational Process, the Center for the Organization of Scientific Activities and Innovations, methodological councils, faculty deans' offices, and departments. These bodies are responsible for evaluating the educational process, the professional development of the teaching staff, monitoring activities, and implementing informational and educational initiatives.

The quality assurance policy is implemented in close alignment with the university's strategic documents and is systematic in nature.

The process of improving the quality of the educational program is constantly being refined and includes the development of a culture of quality in all areas of university life. Key criteria for ensuring program quality include the competitiveness of graduates in the labor market, employer satisfaction with the level of graduate training, the academic performance of master's and doctoral students, student satisfaction, as well as the results of thesis and dissertation defenses.

For the "Discrete Systems" program, the processes of implementing and evaluating training encompass the Faculty of Applied Mathematics and Cybernetics, the relevant department, the faculty, and the students. For the "Mathematical Analysis" program, a similar system is implemented at the Faculty of Mechanics and Mathematics and is linked to ensuring fundamental scientific training, academic transparency, and quality control of research activities.

The BSU administration provides the university's structural units with educational and scientific literature, materials, and equipment; encourages the activities of scientific and teaching staff; and creates conditions for enhancing their professional competence.

The university pays special attention to issues of academic integrity and good faith. To prevent academic plagiarism, the university has an Anti-Plagiarism Commission. Since 2017, the StrikePlagiarism system has been used to check written works.

Papers submitted for initial review are checked at the university's expense; however, if plagiarism is detected, the paper is returned to the author for revision. The author has three months to make corrections and resubmit the work for a second (paid) review. If plagiarism is detected again after the second review, the author may submit a request to the rector at for a third review. Research papers that do not pass the final review are not permitted for defense or publication.

Starting in 2024, the capabilities of the StrikePlagiarism system have been expanded to include the detection of texts created using artificial intelligence technologies. All written work by students, as well as scientific publications, undergo mandatory originality checks.

Between 2020 and 2025, one doctoral dissertation successfully passed the plagiarism check. In addition, during the 2023–2024 academic year, six master's theses, and during the 2024–2025 academic year, another six master's theses were reviewed by the Anti-Plagiarism Commission and found to meet the requirements of academic integrity. Overall, effective mechanisms for plagiarism control have

been established in the “Mathematical Analysis” specialization, and the relevant procedures are systematically implemented in research activities. The materials for the “Discrete Systems” program separately reflect the checks of master’s theses by academic year and their compliance with academic integrity requirements.

In addition, the university has implemented modern digital systems, including SEMS, which ensure transparency in the educational process, student access to course materials, and the objectivity of learning assessment. For the “Mathematical Analysis” program, access to syllabi, lectures, and grading criteria via SEMS is directly reflected in the self-assessment report.

To ensure integrity and impartiality, all classrooms and laboratories at BSU are equipped with video surveillance cameras, allowing for real-time monitoring of academic activities. Ethical conduct and transparency are ensured at the institutional level. The Ethics Committee investigates ethical violations, the Quality Assurance Center monitors the objectivity of data, and the Center for the Organization and Management of the Educational Process ensures the accuracy of information in promotional materials and admissions processes.

To combat corruption and conditions that foster its emergence, Order No. R-47 of May 2, 2023, approved the “Action Plan for 2023–2026.” Under this document, preventive and proactive measures are implemented, and complaints are addressed promptly.

Best Practices

- The existence of an institutional policy for ensuring the quality of education, integrated into the university’s strategic development;
- Systematic operation of mechanisms for ensuring quality and academic integrity;
- Use of digital tools to monitor academic integrity and support the educational process.

Level of compliance with Standard 1: for the "Discrete Systems" program—full compliance; for the "Mathematical Analysis" program—full compliance.

Standard 2. Development and Approval of the Educational Program, Information Management

Evidence and Analysis

The development and approval of educational programs at Baku State University are carried out in accordance with the university’s mission, its strategic priorities, and the current legislation of the Republic of Azerbaijan in the field of education and science. Both programs have been developed in accordance with the Law of the Republic of Azerbaijan “On Education,” the classification of master’s degree specializations, international practices, and labor market requirements.

The objectives of the educational program are aligned with the mission and strategic plan of BSU. The “Mathematical Analysis” program provides students with advanced theoretical knowledge and practical skills. At BSU, the development and approval of programs are carried out in accordance with the rules established by national legislation. These rules cover the program description, rationale, duration of study, learning outcomes, and other components. Additionally, the Institute of Educational Problems of the Republic of Azerbaijan participated in the development of the program.

The correct formulation of learning objectives and outcomes for specialization programs in higher education is based on the Azerbaijan National Qualifications Framework (hereinafter – AzNQF). The learning objectives and outcomes for the “Mathematical Analysis” specialization program have been developed in accordance with the requirements of the AzNQF, taking into account the priorities and needs of the regional labor market. This approach directly impacts both the quality of education and the competitiveness of graduates in the labor market.

The learning objectives and outcomes of the educational program in the specialty “Mathematical Analysis” have been developed in accordance with the National Qualifications Framework for Lifelong Learning and take into account the needs of the regional labor market.

The master’s degree programs in the specializations 7005011 – “Mathematical Analysis” and “Discrete Systems” have been developed in accordance with the Law of the Republic of Azerbaijan “On Education,” the relevant resolution of the Cabinet of Ministers of the Republic of Azerbaijan, the “Classification of Master's Specializations,” leading international practices, and labor market requirements. In addition to staff members of BSU, experts from other higher education institutions, as well as researchers from the Institute of Mathematics and Mechanics of the Azerbaijan National Academy of Sciences, actively participated in the development of the program. This ensured that feedback from students, employers, graduates, and other stakeholders was taken into account during the program’s development. The modules of the educational programs for specialty 7005011—“Mathematical Analysis” and “Discrete Systems”—have been aligned with the Dublin Descriptors and the ECTS system.

The programs are aimed at developing both academic and professional competencies. The learning outcomes matrix for the “Mathematical Analysis” and “Discrete Systems” programs reflects the relationship between courses and program learning outcomes. Curricula developed on the basis of the educational program provide students not only with theoretical knowledge but also with practical skills. Textbooks, teaching materials, electronic resources, and methodological guidelines have been prepared for use in the educational process.

The development of curricula for training programs in various fields (or specializations) at higher education institutions in the Republic of Azerbaijan is carried out under the guidance of a Commission headed by a representative of ARETN.

This organizational structure ensures that program content is developed on a scientifically and practically sound basis, taking into account the specific nature of the particular field of study. Curricula prepared through this process are subject to approval by ARETN. Once approved, the educational programs are mandatory for all higher education institutions in Azerbaijan offering master's-level education in the relevant specialty, regardless of their management system, form of ownership, or legal and organizational structure. In addition, when determining the courses within the program, higher education institutions actively take into account the recommendations and feedback of labor market representatives.

The modules of the "Mathematical Analysis" specialization program (7005011) at BSU have been aligned with the Dublin Descriptors and the ECTS system. The "General Provisions" section of the mathematics curriculum explicitly states that the program is based on the "State Standard and Higher Education Curriculum" approved by the relevant resolution of the Cabinet of Ministers of the Republic of Azerbaijan. This officially confirms that the compulsory component covers the core knowledge and skills defined by the State Standard (SS) and meets the requirements of the standard curriculum, thereby ensuring the organization and structuring of the quality and content of education in accordance with a unified standard. According to Resolution No. 348 of the Cabinet of Ministers of the Republic of Azerbaijan dated December 24, 2013, one credit (, ECTS) corresponds to 30 hours of a student's academic workload (lectures, seminars, independent study, exam preparation, etc.). The annual course load for full-time students is set at 60 credits. The curriculum, developed based on the educational program, enables students to acquire both theoretical knowledge and practical skills. To develop professional competencies, the curriculum includes courses such as "Harmonic Analysis," "Nonlinear Analysis," "Spectral Theory of Differential Operators," and "Singular Integral Equations," with ECTS credits allocated accordingly.

The "Discrete Systems" program is designed to train specialists in the fields of discrete mathematics, algorithms, optimization, data analysis, and mathematical modeling of applied processes. The self-assessment materials note that students acquire the ability to analyze complex mathematical problems, process and structure large data sets, make optimal decisions, and implement algorithms in MATLAB, Python, and R. Additionally, the program focuses on modeling real-world processes through finite states and transitions, as well as representing resource allocation, production planning, and game strategy problems in the form of discrete models.

The "Mathematical Analysis" program is focused on in-depth fundamental training in the field of modern analysis. The program's self-assessment notes that the department's research results are directly incorporated into the educational process. Among the areas enriching the program's content are research on fundamental integral operators in harmonic analysis and linear and nonlinear eigenvalue problems for differential operators. This ensures a close connection between the program and the active scientific school.

To receive a diploma, a student must earn the total number of credits established by Decree No. 348 of the Cabinet of Ministers of the Republic of Azerbaijan dated December 24, 2013 (120 ECTS credits). Of these, 18 credits are allocated to general education courses, 50 credits to required courses determined by the higher education institution (HEI), 22 credits to a block of elective courses determined by the HEI, 12 credits to research and teaching practice, and 18 credits to the preparation and defense of the thesis. Research and practical training activities are conducted to give students the opportunity to apply their acquired knowledge in practical settings. This approach allows students to develop both theoretical competence and the necessary analytical and computational skills sought after in the labor market. The organization of this internship is governed by State Educational Standards and the university's internal regulations. The course load for the internship amounts to 12 ECTS credits. These activities are carried out under the supervision of university faculty members holding academic titles or degrees.

The total volume of training for the "Discrete Systems" program is 120 ECTS credits. According to the self-assessment report, 1 ECTS credit corresponds to 30 hours of coursework; the annual workload is 60 credits; and the program structure includes a general block, required and elective courses, research and teaching practice, as well as the preparation and defense of a thesis. A similar focus on ECTS and the transparent organization of the course load is also reflected in the materials for "Mathematical Analysis."

The university uses modern digital systems for managing educational information. Curricula, syllabi, learning outcomes, and assessment criteria are available to students through the university's information systems. For the "Mathematical Analysis" program, this is directly reflected through SEMS; for the "Discrete Systems" program, the self-assessment report also emphasizes that all information about the program, competencies, and learning outcomes is presented to students, employers, and other stakeholders in an understandable format.

Best practices

- Program development in accordance with national standards and international requirements;
- Clearly defined learning outcomes and their connection to the curriculum;
- Use of digital tools for academic information management.

Areas for improvement

- Continue to document the involvement of external stakeholders in program update procedures;
- Expand practices for systematically incorporating employer recommendations when revising program content.

Level of compliance with Standard 2 for the "Discrete Systems" program – full compliance; for the "Mathematical Analysis" program – full

compliance.**Standard 3. Student-centered learning, teaching, and assessment*****Evidence and Analysis***

The organization of the educational process for the “Discrete Systems” and “Mathematical Analysis” master’s programs at Baku State University is carried out in accordance with the principles of student-centered learning. The educational process is organized based on the European Credit Transfer and Accumulation System (ECTS) and is supported by digital tools, including SEMS. The self-assessment materials for both programs reflect individual educational trajectories, transparency of assessment criteria, and student access to learning materials.

In the “Discrete Systems” program, the student-centered approach is evident in the applied focus of courses designed to solve specific mathematical and algorithmic problems, as well as in the use of discussions, analytical exercises, and modern software environments. The program’s content fosters the development of critical thinking, analytical skills, independence, and the ability to apply mathematical models to real-world economic, technical, and financial problems.

In the “Mathematical Analysis” program, student-centered learning is combined with a strong research component. The university operates an academic advisory service, and the Faculty of Mechanics and Mathematics employs five tutors. Furthermore, the self-assessment highlights support for the academic training of master’s students and the integration of the educational process with the department’s research activities.

Assessment is conducted in accordance with the “Regulations on the Assessment of Student Knowledge within the Credit System,” approved by Order No. 1060 of the Ministry of Science and Education of the Republic of Azerbaijan dated September 11, 2008, as well as the “Rules for the Organization of Education within the Credit System at the Bachelor’s and Master’s Levels of Higher Education and in Basic Medical Education,” approved by Resolution No. 348 of the Cabinet of Ministers of the Republic of Azerbaijan dated December 24, 2013. All program components, namely specialized and elective courses, practical classes and laboratory work, as well as research and project activities, are included in individual study plans. Each master’s student has the opportunity to track specific contact hours, credit distribution, and learning outcomes within their plan. In the “Mathematical Analysis” program, the mechanism and procedure for course registration are implemented with students’ interests in mind. The main goal of this process is to provide a wide selection in accordance with master’s students’ academic interests, individual programs, and chosen areas of specialization. An annual working curriculum for the program is developed based on students’ individual study plans.

In the course of study in the "Mathematical Analysis" program, grading and examinations are conducted in accordance with the Law on the Assessment of Students Studying Under the Credit System. Each grade on a scale from 0 to 10 is

justified accordingly, and grading is conducted based on these criteria. The assessment process adheres to the principles of transparency, objectivity, and fairness.

The assessment criteria for both programs are communicated to students in advance and are reflected in the syllabi, which are available through the university's digital platforms. This ensures the transparency and objectivity of the assessment procedures.

In cases where students disagree with their grades, the Appeals Committee is available. Students may submit an appeal to the committee if they are dissatisfied with their grade. The committee objectively reviews the student's appeal, examines all evidence related to the examination or grading procedure, and renders a final decision. This process provides students with a legitimate and fair opportunity to request a review of their grades.

For each course, learning outcomes and the student's academic workload (including classroom sessions, independent study, projects, and exam preparation) are expressed in credits. This approach allows for the transfer and recognition of credits earned at other universities, regardless of the specific institution. The learning outcomes underlying teaching and assessment procedures are aligned with the National Qualifications Framework (ANQF) of the Republic of Azerbaijan, ensuring that the knowledge, skills, and competencies expected at each level of education meet national standards and the European Qualifications Framework (EQF).

At BSU, master's-level exams are typically administered in written form. Each exam is formatted as a test containing five questions for each student. Each question is graded on a 10-point scale. Exam booklets include not only theoretical questions but also practical questions related to the student's specialization. To pass the exam, a student must score at least 17 points, with a maximum of 50 points. The minimum passing grade for the course is 51 points.

This assessment mechanism not only encourages active participation by master's students in the educational process but also serves as an objective and transparent measure of their knowledge and skills. Accordingly, assessment is not limited to measuring acquired knowledge; it also functions as a mechanism that promotes active engagement and continuous development throughout the learning process. This approach requires a comprehensive assessment of both the theoretical knowledge mastered and the practical skills acquired by the student. Thanks to the use of multiple sources of assessment, this methodology ensures a more objective and holistic evaluation.

An approach based on the principles of inclusivity has been fully implemented at the institution. Individual support mechanisms are in place to meet the individual needs of students from diverse social, cultural, and ethnic backgrounds. Additional learning resources, office hours, and an academic mentoring system are available for international students, students with special needs, and working students. In accordance with the Law of the Republic of Azerbaijan "On Social Protection of Orphans and Children Deprived of Parental

Care,” as well as the relevant Cabinet of Ministers decree on covering tuition costs for students from socially vulnerable families, students may be exempted from paying tuition fees. Establishing relationships based on mutual trust and cooperation between students and faculty is one of the institution’s top priorities. Opportunities for open communication, ongoing consultations, mentoring programs, and an academic advising system contribute to the effective development of such relationships.

The teaching process utilizes interactive methods such as discussions, debates, project-based learning, and problem-based learning. This approach not only facilitates the acquisition of theoretical knowledge but also fosters the development of critical thinking, independent decision-making, and practical skills among students. The teaching methods and tools used are innovative, effective, and student-centered. They go beyond the simple transfer of knowledge, encouraging active student participation, creative thinking, and analytical skills. Teaching methods include interactive classes, project-based and problem-based learning, as well as activities that encourage collaboration and teamwork. The tools used in the educational process are technology-based and promote the development of digital literacy. These include e-learning platforms, laboratories, multimedia resources, online assessment systems, and the Student and Education Management System (SEMS). Using SEMS platforms, it is possible to centrally provide learning materials, manage assignments, distribute lecture resources, conduct online tests, and track student progress, making the learning process more transparent, flexible, and accessible for both faculty and students. The department’s state-of-the-art computer labs enable students to effectively utilize modern software, computing resources, and digital tools, while simultaneously fostering the development of practical skills.

The use of SEMS platforms further expands these opportunities, allowing students to continue their studies beyond the classroom. At the master’s level in the “Mathematical Analysis” program, students’ course loads are determined based on their individual abilities and potential. Each student’s learning pace, prior knowledge, and research skills are carefully considered to ensure a balanced and appropriate course load. This individualized approach facilitates the successful mastery of both theoretical foundations and practical application, while also encouraging responsible and active participation in the learning process.

Students who are unable to meet academic requirements on time or in full are provided with additional consultation hours and the opportunity to attend supplementary classes. In addition, summer courses and a 25% retake option are offered as needed. All processes are thoroughly explained and monitored by mentors to ensure proper implementation. To this end, instructors and academic advisors organize individual consultations and develop personalized study plans to identify students’ weaknesses and support their academic development.

Best Practices

- Implementation of student-centered learning principles;

- Use of digital educational platforms;
- Availability of academic support for students, including tutoring.

Areas for improvement

- Continue developing a unified digital learning environment;
- Expand opportunities for international academic mobility for master’s students;
- Strengthen practice-oriented elements where this aligns with the program’s profile.

Level of compliance with Standard 3: for the "Discrete Systems" program – full compliance; for the "Mathematical Analysis" program – full compliance.

Standard 4. Student Admission, Academic Performance, Recognition, and Certification

Evidence and Analysis

Baku State University implements an admissions policy in accordance with the requirements of national legislation, including the Law of the Republic of Azerbaijan “On Education,” the Regulations on Higher Education, and the rules of the State Examination Center.

Admissions to the “Mathematical Analysis” program show a stable upward trend. All stages of the admissions process—from document submission to enrollment—are regulated and ensure transparency, objectivity, and equal conditions for applicants. Information on admissions rules is open and accessible.

To help freshmen adapt, orientation events are held to familiarize them with the educational process, internal rules, and opportunities at the university, which facilitates their effective integration into the academic environment.

The processes of student admission, monitoring of academic performance, recognition of learning outcomes, and issuance of qualification documents for the “Discrete Systems” and “Mathematical Analysis” programs are regulated by the current legislation of the Republic of Azerbaijan and the university’s internal regulations. Admission is conducted through a centralized selection system administered by the State Examination Center. Information regarding admission rules and academic requirements is publicly available to applicants.

For the “Discrete Systems” program, the self-report reflects the stability of admissions and annual monitoring of student enrollment trends. The program materials note that admission criteria and requirements are published on the official website, on social media, and in admission guides, and that applicants receive information not only about the program’s content but also about employment prospects. It is also noted that graduates of the program primarily pursue careers in IT, software development, the banking sector, and educational institutions.

For the “Mathematical Analysis” program, the admission, recognition, and certification processes are generally organized in accordance with university-wide requirements. At the same time, given the program’s fundamental profile and narrower specialization, the expert group considers it advisable to further strengthen career guidance and outreach efforts aimed at increasing the program’s appeal and expanding its external academic visibility. The SWOT section of the program explicitly identifies the need to expand international experience, academic mobility, and the promotion of young researchers.

Students have the opportunity to track their academic progress through an official academic transcript, which records completed courses, earned credits, grades, and summary performance indicators.

At Baku State University, procedures for student transfers and the granting of academic leave are governed by the current regulatory act of the Ministry of Science and Education of the Republic of Azerbaijan (Decree No. KQ-02 dated February 21, 2024).

All processes—transfer, change of study format, re-enrollment, and application for academic leave—are carried out through the unified electronic platform portal.edu.az, which ensures transparency, objectivity, and efficiency in decision-making, as well as reduces the administrative burden.

Re-enrollment is permitted within 15 years of withdrawal and takes place during the relevant semester (fall or spring) during the break period.

Academic leave is granted on the following grounds:

- military service—for the duration of conscription;
- family circumstances—up to 2 years;
- health reasons—up to 2 years (based on a medical certificate);
- social reasons — in accordance with the law;
- study abroad — for up to 1 year.

Overall, these mechanisms are characterized by clear regulations and alignment with modern requirements for the digitalization of educational administration.

During the final assessment phase for second-year master’s students, specialized thesis committees are formed to evaluate master’s theses. Their work focuses on assessing the quality of the research, its relevance, and practical significance.

The councils consist of qualified specialists, faculty members, and academic advisors. During the defense, the master’s student presents the results of their research, after which the committee evaluates the scientific validity, novelty, and practical applicability of the work.

Based on the results of the defense, a decision is made regarding the thesis’s compliance with established requirements. This stage is crucial for confirming the graduate’s research competencies and readiness for academic work.

Upon completion of their studies, graduates are awarded a diploma and a Diploma Supplement containing information on their academic performance,

earned credits, and GPA. These documents are issued in accordance with the requirements of the European Higher Education Area. This process is described in detail in the self-assessment report for the “Discrete Systems” program.

Best Practices

- A transparent and centralized student admission system;
- Open access to information on admission criteria and program structure;
- Issuance of the Diploma Supplement in accordance with international standards.

Areas for improvement

- For the "Mathematical Analysis" program, intensify career guidance efforts and measures to increase the program’s appeal to prospective students;
- Continue to develop mechanisms for international academic visibility and the program’s external positioning.

Level of compliance with Standard 4: for the “Discrete Systems” program—full compliance; for the “Mathematical Analysis” program—full compliance.

Standard 5. Faculty

Evidence and Analysis

At Baku State University, the recruitment of faculty and teaching staff is carried out in accordance with the regulatory requirements of the Ministry of Science and Education of the Republic of Azerbaijan (Order No. 401 of August 7, 1996).

Positions (professor, associate professor, senior lecturer, lecturer) are typically filled through a competitive selection process for a term of 5 years, ensuring transparency, objectivity, and a high standard of professional selection. Qualified specialists with relevant academic degrees, titles, and experience in scientific and pedagogical work are eligible to participate.

Requirements for candidates vary depending on the position and include holding an academic degree, work experience, and scholarly publications.

Competitions are announced during the academic year, and information about vacancies is published and freely accessible. Candidates submit the required set of documents (application, CV, copies of diplomas, list of scientific works), based on which a comprehensive assessment of their qualifications is conducted.

Overall, the university’s personnel policy is aimed at ensuring the quality of the educational process and attracting highly qualified specialists.

The hiring process for administrative and technical staff at BSU is regulated in accordance with the Labor Code of the Republic of Azerbaijan, the Law “On Education,” the BSU Charter, and other relevant regulatory legal acts. This process

ensures that the personnel policy at the higher education institution is implemented in accordance with legal and institutional principles.

The staffing of both programs corresponds to the master's degree level and the training profile. The faculty possesses the appropriate academic qualifications, teaching experience, and research activity. The academic interests of the faculty correspond to the content and focus of the programs being implemented.

For the "Discrete Systems" program, the self-assessment provides specific indicators of faculty members' research activity: over the past five years, 77 research and teaching materials have been published, 61 presentations have been made at international conferences, and 2 textbooks and 1 monograph have been published. These data indicate sufficient scientific and methodological activity among the teaching staff and the program's sustainable human resource potential.

Scientific publications are evaluated based on their recognition, citation rates, and impact factors, including ranking by quartiles (Q1–Q4). The academic experience and achievements of the faculty members of the Department of Mathematical Analysis at the Faculty of Mechanics and Mathematics of BSU ensure the necessary professional competence and development in accordance with both national legislation and international quality standards, thereby confirming the crucial role of teaching quality. Reports for 2021–2025 indicate that department staff actively participate in local and international scientific conferences and publish articles in journals indexed in internationally recognized scientometric databases, such as Web of Science and Scopus. This demonstrates that faculty members fulfill their obligations regarding continuous professional development in accordance with the requirements of the Law of the Republic of Azerbaijan "On Education." During the 2021–2025 period, department staff published 40 scientific articles in journals indexed in the Web of Science and Scopus databases.

The faculty consists of 12 full-time faculty members, as well as 9 part-time faculty members who are employees of BSU and 7 part-time faculty members working at other institutions.

A key strength of the "Mathematical Analysis" program is the direct integration of the department's research results into the content of the courses. In particular, research on fundamental integral operators in harmonic analysis and linear and nonlinear eigenvalue problems is incorporated into the educational process. This connection between education and science reinforces the fundamental nature of the training and maintains the program's high academic standards.

At BSU, motivation and incentive mechanisms based on individual performance are used to stimulate faculty activity. Throughout the year, staff members who demonstrate active scientific activity, achieve outstanding results, publish articles and other scientific works in authoritative and internationally recognized indexed journals, receive citations for their research, and make significant contributions to science and organizational work are recognized and rewarded.

In accordance with Resolution No. KQ-12 dated September 3, 2024, the faculty of the Department of Mathematical Analysis annually develops individual work plans and annual teaching loads based on established standards.

Annual plans include the distribution of the teaching load (courses, hours, student enrollment), while individual plans reflect the teaching, research, and methodological activities of the faculty members. Their implementation is systematically monitored by the department chair, and at the end of the year, faculty members submit reports that are discussed at department meetings and documented.

Faculty activities are planned and evaluated on a regular basis, including the development of performance metrics, which contributes to improving the quality of the educational process and advancing research and pedagogical work.

Over the past five years, faculty members have published 85 scientific articles, prepared 99 conference papers, and published 1 textbook and 1 monograph.

The department regularly organizes open classes, which are evaluated according to established criteria. During these sessions, key indicators include the quality of teaching, the use of interactive methods, student engagement, and the application of modern teaching technologies. The results of open classes are discussed at both the faculty and department levels, with identified strengths and weaknesses analyzed. Based on summarized feedback and recommendations, measures are taken to improve the quality of teaching.

Table 1 - Average monthly salary of research staff in 2021–2025 and its dynamics

Position	2021 (manats)	2022 (manats)	2023 (AZN)	2024 (AZN)	2025 (AZN)
Professor	1220	1420	1420	1660	1660
Associate Professor	1100	1280	1280	1496	1496
Senior Lecturer	860	1020	1020	1210	1210
Instructor	760	900	900	1066	1066

Over the past five years, the average monthly salary of faculty members in the field of "Mathematical Analysis" has shown a positive trend. This trend reflects increased government support for higher education and a gradual improvement in university compensation policies.

Best Practices

– Alignment of faculty members' research interests with the program profile;

- Integration of research findings into the content of master’s-level courses;
- A sufficient level of academic activity among the faculty.

Areas for improvement

- Encourage faculty participation in international internships and professional development programs;
- Expand academic mobility among faculty members.

Level of compliance with Standard 5: for the "Discrete Systems" program – full compliance; for the "Mathematical Analysis" program – full compliance.

Standard 6. Learning Resources and Student Support

Evidence and Analysis

Baku State University has a well-developed material, technical, informational, and educational infrastructure that supports the implementation of the “Discrete Systems” and “Mathematical Analysis” master’s programs. The availability of modern resources and an effective student support system contributes to ensuring the quality of the educational process.

For the “Discrete Systems” program, the resource base aligns with the applied nature of the training. The self-assessment highlights the availability of computer labs, specialized software, and training in MATLAB, Python, and R. This creates favorable conditions for solving problems in discrete programming, data analysis, and mathematical modeling.

For the "Mathematical Analysis" program, the self-assessment details the modern lecture halls of the Faculty of Mechanics and Mathematics, computer labs, the scientific library and reading room, the library’s electronic catalog, as well as the posting of lecture materials and syllabi on the SEMS platform. In addition, the Faculty of Mechanics and Mathematics employs five tutors who assist students with academic matters.

The university provides a comprehensive student support system, including academic guidance, access to educational resources, and opportunities to participate in research activities. The materials for the “Mathematical Analysis” program also highlight the role of the International Office, the Center for Research, Development, and Innovation, and the Cultural and Creative Center in supporting students’ academic and personal development.

The modern lecture halls and classrooms of the Faculty of Mechanics and Mathematics are equipped with state-of-the-art equipment, including high-quality projectors, computers, and interactive whiteboards, which facilitates the implementation of active teaching methods. This equipment enhances the effectiveness of the educational process, including distance learning via the Blackboard platform, and ensures high-quality presentation of educational materials. Computer labs available to students are equipped with modern

computers and software for practical classes in mathematical modeling and computational tasks. BSU systematically opens new labs and regularly updates existing equipment.

The university library, which has 11 reading rooms, is equipped with modern facilities and provides simultaneous access for all users. The BSU Scientific Library and the reading room of the Faculty of Mechanics and Mathematics, which form the core of the university's educational and research resources, are stocked with contemporary literature and periodicals that meet the requirements of the master's program in mathematical analysis. Additionally, access to the library's electronic catalogs is available at lib.bsu.edu.az. Furthermore, the university's SEMS platform hosts lecture notes and syllabi for each course, allowing students to access course materials and syllabi. Through these resources, students can obtain detailed information about course content, grading criteria, recommended reading, and other important details.

The university's International Relations Department expands students' opportunities to gain international experience through initiatives such as recruiting international students, expanding networks of international partnerships, organizing mobility programs such as Erasmus+, Mevlana, and Orhun, developing dual-degree programs, participating in international projects, and hosting international events.

The Center for Culture and Creativity organizes cultural and public events, competitions, and festivals; develops the creative potential of students and staff; ensures the productive use of free time; and promotes national and moral values.

To support the academic training of master's students, the Center of Excellence in Research, Development, and Innovation seeks to engage innovative researchers in scientific activities, strengthen the integration of education, research, and innovation, and prepare specialists who meet the demands of the labor market. The Center is open to researchers from both BSU and other higher education institutions. Its research areas include oil and gas, energy, mining, agriculture and food security, bioengineering, genomics, ecology, and digitalization, with a primary focus on developing innovative solutions to existing problems.

On the official website of Baku State University, annual financial reports are available in the "Department of Finance and Supply" section.

The Center collaborates with KOBIA to support the development of innovative entrepreneurship and, as part of this collaboration, serves as the host for the Incubation and Acceleration Center. Additionally, BUILD LLC, affiliated with BSU, provides infrastructure for startups, facilitating the commercialization of research outcomes and technology transfer.

Established in 2019, the Psychological Support Sector serves to ensure student well-being by providing services related to mental health care, cognitive-behavioral therapy, counseling on issues of depression, anxiety, post-traumatic stress disorder, and stress; support for sleep disorders and psychosomatic conditions; crisis prevention; and guidance in personal development. Students also have access to general medical services through Clinic No. 5, located on the university campus,

where specialized staff and modern equipment enable the provision of a wide range of clinical and diagnostic services.

The main building's cafeteria (19&19 Cafe) is equipped with tables and seating for 350 students at a time. The cafeteria can accommodate 140 staff members. Additionally, there are rooms designed for events with 25–35 participants.

The University Sports and Health Center provides students with ample opportunities for physical development and maintaining a healthy lifestyle. A modern soccer stadium, a 25-meter swimming complex, various gyms, and a sports club support physical training and the development of various sports disciplines. Students also achieve high results in inter-faculty competitions, national student games, and various sports tournaments.

To support students' academic activities, the Student Scientific Society organizes various academic events, seminars, and competitions, fostering the development of research skills and promoting collaboration with local and international organizations. The Student Youth Organization and the Student Union Committee ensure student representation in university governance, implement social, cultural, and development-oriented projects, and support student initiatives. The university provides lecture halls, multipurpose rooms, and open spaces, creating a favorable environment for organizing and holding student events.

The BSU Volunteer Organization has formed an active community of about 1,000 volunteers. Volunteers participate in social, humanitarian, cultural, educational, and environmental projects, thereby developing their leadership skills and sense of social responsibility.

Student clubs, including “Mathematics-Physics” and “BDU Talks,” operate in accordance with students' interests and contribute to the development of their academic knowledge, cultural awareness, and social skills.

The university has modern facilities of various sizes that meet contemporary standards for organizing educational and research activities. There are ample opportunities for hosting educational events, scientific seminars, conferences, and student activities.

The university has a large auditorium with a capacity of 549 seats. In addition, the circular hall in the third academic building, which seats about 300 people, is used for large-scale events in a lecture format.

The Heydar Aliyev Lecture Hall, designed for scientific and analytical discussions, lectures, and seminars, seats about 70 participants, while the “History of Victory” Lecture Hall has a capacity of 30 seats.

In addition, the “Student Space,” designed to promote students' social and cultural activities, can accommodate 30 people. The Student Development Center, where training sessions and professional development classes are held, accommodates about 70 people. In addition, the round hall of the Scientific Library is one of the venues designed for educational and scientific events, and accommodates up to 80 people.

Best Practices

- Well-developed infrastructure and modern computer labs;
- Access to library and electronic educational resources;
- A comprehensive system of academic support for students.

Level of compliance with Standard 6: for the "Discrete Systems" program – full compliance; for the "Mathematical Analysis" program – full compliance.

Standard 7. Public Information

Evidence and Analysis

Baku State University ensures openness, transparency, and accessibility of information about its activities for all stakeholders. The main source of information is the university's official website, which provides details on its structure, educational programs, faculty, research activities, and international cooperation. The legal address, email, official website, and status of the university are listed in the general information for both programs.

For both programs, information on educational activities, courses, syllabi, and resources is available to students through SEMS and other university digital support mechanisms. For the "Discrete Systems" program, the self-assessment report specifically emphasizes that all information regarding the program's content, competencies, and learning outcomes is presented in a clear and accessible format for students, employers, faculty, and other stakeholders.

Overall, the public information system meets modern requirements for transparency and accessibility of information.

Best Practices

- A well-developed information system via the official website and digital channels;
- Publication of information on program content, learning outcomes, and resources;
- Use of university digital platforms to support students.

Level of compliance with Standard 7: for the "Discrete Systems" program – full compliance; for the "Mathematical Analysis" program – full compliance.

CHAPTER 3

CONCLUSION

Comments and areas for improvement identified by the expert group following the audit:

Standard 1. Quality assurance policy in education and academic integrity – For the “Discrete Systems” program – full compliance; for the “Mathematical Analysis” program – full compliance.

Standard 2. Development, Approval of Educational Programs, and Information Management – For the “Discrete Systems” program – full compliance; For the “Mathematical Analysis” program – full compliance.

Areas for improvement:

- continue systematic documentation of interactions with employers;
- Expand the participation of external stakeholders in the procedures for updating educational programs.

Standard 3. Student-centered learning, teaching, and assessment – For the “Discrete Systems” program – full compliance; For the “Mathematical Analysis” program – full compliance.

Areas for improvement:

- continue developing a unified digital learning environment;
- Expand opportunities for international academic mobility among students;
- strengthen practice-oriented elements of learning in accordance with the program profile.

Standard 4. Student Admission, Academic Performance, Recognition, and Certification – For the “Discrete Systems” program – full compliance; For the “Mathematical Analysis” program – full compliance.

Areas for improvement:

- intensify career guidance efforts for the “Mathematical Analysis” program;
- Develop additional measures to increase the program’s appeal to prospective students and expand its external positioning.

Standard 5. Faculty - For the "Discrete Systems" program – full compliance; For the "Mathematical Analysis" program – full compliance.

Areas for improvement:



- Increase faculty participation in international internships and professional development programs;
- Expand the academic mobility of the faculty.

Standard 6. Learning Resources and Student Support – For the “Discrete Systems” program – full compliance; For the “Mathematical Analysis” program – full compliance.

Standard 7. Public Outreach – For the “Discrete Systems” program – full compliance; For the “Mathematical Analysis” program – full compliance.

PROGRAM
of the external audit by the IQAA expert group
at Baku State University for program accreditation
March 12-13, 2026

Time	Event	Participants	Location
<i>Day 1: March 12, 2026</i>			
8:45	Arrival at the university	L, EG, C	EG office
9:00-10:00	Briefing, discussion of organizational issues	L, EG, C	EG office Conference link
10:00-10:45	Interview with the University Rector	L, EG, C, Rector	Rector's Office Conference link
10:45-11:00	Exchange of views among members of the external expert group	L, EG, C	EG Office Conference link
11:00-11:45	Interview with the Vice-Rectors of the University	L, EG, C, Vice-Rectors	Rector's Office Link for the conference
11:45-12:00	Exchange of views among members of the external expert group	L, EG, C	EG office Conference link
12:00-12:45	Interviews with heads of structural divisions	L, EG, C, RSP	EG office Conference link
12:45-13:00	Exchange of views among members of the external expert group	L, EG, C	EG Office Conference link
13:00-14:00	Lunch	L, EG, C	
14:00-14:45	Interview with deans, department heads	L, EG, C, Dean of the faculty, Head of the department	EG office Link for the conference
14:45-15:00	Exchange of views among members of the external expert group	L, EG, C	EG Office Conference link
15:00-15:45	Interview with faculty members of the department on the accredited educational program	L, EG, C, teaching staff of the department	EG office Link for the conference
15:45-16:00	Exchange of views among members of the external expert group	L, EG, C	EG office Link for the conference
16:00-16:45	Interview with employers	L, EG, C, Employers	EG Office Conference link
16:45-17:00	Exchange of views among members of the external expert group	L, EG, C	EG Office Conference link
17:00-18:30	Visual inspection of material, technical, and educational laboratory facilities	L, EG, Heads departments	Academic building Conference link



IQAA External Audit Report

18:30-18:45	Exchange of views among members of the external expert group	L, EG, C	EG office Conference link
<i>Day 2: March 13, 2026</i>			
8:45	Arrival at the University	L, EG, C	Academic Building
9:00-11:00	Academic and scientific support for master's students. Selective attendance at academic exams and practical training bases	L, EG	Academic building Practical training bases
11:00-11:45	Interviews with students	L, EG, C, Students	EG office Conference link
11:45-12:00	Exchange of views among members of the external expert group	L, EG, C	EG Office Conference link
12:00-13:00	Invitation to department heads at the request of experts.	L, EG, C, department heads	EG Office
13:00-14:00	Lunch	L, EG, C	
14:00-16:00	Preparation of external audit reports. Review of documentation on the accredited educational program. Invitation of individual representatives of the department and structural units at the request of experts.	L, EG, Head of Department, HSU	EG office Link for the conference
16:00-17:00	Exchange of views among members of the external expert group. Preliminary results of the external audit	L, EG, C	EG office Link for the conference
17:00-17:30	Meeting with management to present preliminary results of the external audit	L, EG, C	Rector's Office Conference link

Note: L – Leader of EG, EG – Expert Group, C – Group Coordinator, HSU – Heads of Structural Units

**LIST OF DOCUMENTS
ADDITIONALLY REVIEWED BY THE UNIVERSITY**

1. Educational Program
2. Working curriculum of the educational program
3. Course syllabi
4. Policy and system for internal quality assurance in education
5. Materials from collegial bodies governing the educational program
6. Materials on the system for monitoring student progress
7. Student Theses