

Decision of the FIBAA Accreditation and Certification Committee



12th Meeting on November 29, 2023

PROGRAMME ACCREDITATION

Project Number:	22/128 Cluster 1
Higher Education Institution:	Narxoz University
Location:	Almaty, Kazakhstan
Study programmes:	<ol style="list-style-type: none">1. Statistics and Data Science (Bachelor of Science)2. Applied Mathematics in Digital Economics Science (Bachelor of Science)3. IT in Business (Bachelor of Business Administration in IT in Business)
Type of accreditation:	Initial accreditation

The FIBAA Accreditation and Certification Committee has taken the following decision:

According to § 7 (6) in conjunction with § 9 (1) of the FIBAA General Terms and Conditions within the framework of procedures for the award of the FIBAA Quality Seal for Programmes from January 1, 2021, the study programmes are accredited.

Period of Accreditation: November 29, 2023 until November 28, 2028.

The FIBAA Quality Seal is awarded.



Assessment Report

Higher Education Institution:

Narxoz University, Almaty, Kazakhstan

Programmes:

- 1 Statistics and Data Science
- 2 Applied Mathematics in Digital Economics
- 3 IT in Business

Degree awarded on completion:

- 1 Bachelor of Science
- 2 Bachelor of Science
- 3 Bachelor of Business Administration in IT in Business

General information about the study programmes

Brief description of the study programmes:

The Bachelor degree programme Statistics and Data Science (SDS), Applied Mathematics in Digital Economics (AMDE) and IT in Business have a projected study time of four years (eight semesters) and a workload of 240 ECTS credits.

Statistics and Data Science (SDS)

This programme has a strong statistics component and offers the opportunity to specialise in “Data Science” or “Business Statistics. The programme has been enriched with business intelligence and programming components. It is offered with a track in English, in parallel and addition to tracks in Kazakh and Russian. Graduates receive the degree Bachelor of Science in Statistics and Data Science.

Applied Mathematics in Digital Economics (AMDE)

Against the background that both the global Big Data analytics market and the Small Data analytics market are expanding at a rapid pace this relatively new programme aims to train students to become specialists in data analytics and applied mathematics. AMDE students can specialise in either “Applied Data Analysis” or “Risk Analysis & Modelling”. Additionally, the programme is offered with a track in English, in parallel and addition to tracks in Kazakh and Russian. Graduates receive the degree Bachelor of Science in Applied Mathematics in Digital Economics.

IT in Business

This programme is offered in English only. Students are required to use internationally recognised textbooks, case studies, and other didactical materials with strong international context in their studies. Graduates of the programme can be employed in the private and public sectors, international companies, state and Kazakhstani companies. Graduates achieve the degree Bachelor of Business Administration in IT in Business.

Type of study programmes:

Bachelor programmes

Projected study time and number of ECTS credits:

All programmes: 4 years and 240 ECTS credits

Mode of study:

All study programmes: full-time

Didactic approach:

All programmes: with compulsory attendance

Double:

No

Scope (planned number of parallel classes) and enrolment capacity:

Statistics and Data Science: 50 – 100 students

Applied Mathematics in Digital Economics: 50 - 100 students

IT in Business: 50 students

Programme cycle starts in:

Autumn semester

Initial start of the programmes:

Statistics and Data Science: September 2022

Applied Mathematics in Digital Economics: September 2022

IT in Business: September 2023

Type of accreditation:

Initial accreditation

Procedure

A contract for the initial accreditation of the Bachelor programmes: Statistics and Data Science (Bachelor of Science); Applied Mathematics in Digital Economics (Bachelor of Science); and IT in Business (Bachelor of Business Administration in IT in Business) was made between FIBAA and Narxoz University, Almaty, Kazakhstan on November 11, 2022. On April 12, 2023, the HEI submitted self-evaluation reports for each programme, which included detailed descriptions of the programmes and further documents in order to prove that the criteria for programme accreditation are met.

At the same time, FIBAA appointed a review panel¹. The HEI has agreed with the chosen experts. The panel consisted of:

Dr. rer.pol. Jörg Dubiel

Datacube GmbH, Karlsruhe, Germany

CEO of Datacube

(Data Science, Artificial Intelligence, Big Data, Data Mining)

Prof. Dr. Peter Heusch

University of Applied Sciences Stuttgart, Germany

Professor for Informatics

(Theoretical Informatics, IT in Business, Digitalisation)

Samat Kassabek PhD

Nazarbayev University, Astana, Kazakhstan

PhD in Mathematical and Computer Modelling Instructor

(Mathematics, Statistics and Data Science, Applied Mathematics)

Prof. Dr. Horst Peters

University of Applied Sciences Duesseldorf, Germany

Professor for Business Studies, especially Business Mathematics and Statistics

Julian Wiedermann

University of Freiburg, Germany

Student of Mathematics and Informatics (B.A.)

FIBAA project manager:

Dr. Birger Hendriks

The assessment is based on the self-evaluation reports, amended by further documents, as requested by the panel, and an on-site visit. The on-site visit took place on June 15 and 16, 2023 at

¹ The panel is presented in alphabetical order.

the HEI's premises in Almaty. At the end of the on-site visit, the panel has given brief feedback on its first impressions to representatives of the HEI.

The assessment report based on this was delivered to the HEI for comment on October 31, 2023. The statement on the report was submitted on November 8, 2023. It has been taken into account in the report at hand.

Summary

The Bachelor programmes Statistics and Data Science (Bachelor of Science), Applied Mathematics in Digital Economics (Bachelor of Science) and IT in Business (Bachelor of Business Administration in IT in Business) offered by Narxoz University, Kazakhstan, fulfil the FIBAA quality requirements for Bachelor programmes and can be accredited by the Foundation for International Business Administration Accreditation (FIBAA) for five years starting on November 29, 2023, and ending on November 28, 2028. The programmes are in accordance with the European Qualification Frameworks and the European Standards and Guidelines in their applicable version valid as of the time of the opening of the procedure, and in accordance with the Bologna Declaration.

As to all programmes, the quality requirements that have not been fulfilled

- Lecturing tutors (see chapter 3.3);
- Internationality of student body (see chapter 3.4)

are not asterisk criteria and therefore do not lead to a condition. The measures the HEI takes to solve the identified problems are to be considered during the re-accreditation.

The panel members identified the following area where the programmes Statistics and Data Science as well as Applied Mathematics in Digital Economics could be further developed:

- Offering a compact course in the sense of “Business Basics” and in this way further strengthening the training of complementary competencies and skills (see chapter 3.1).

As for the Statistics and Data Science programme only:

- Including more data science works with models of management cases (see chapter 3.1).

The measures that the HEI takes in order to implement the recommendations of the panel members must be taken into account during re-accreditation.

There are many criteria in which all programmes exceed the quality requirements:

- Positioning of the study programmes on the job market for graduates (Employability) (see chapter 1.3);
- Admission requirements (see chapter 2.1);
- Counselling for prospective students (see chapter 2.2);
- Equality of opportunity (see chapter 3.2);
- Guest lecturers (see chapter 3.3);
- Skills for employments (Employability) (see chapter 3.6);
- Internal cooperation (see chapter 4.1);
- Students support by faculty (see chapter 4.1);
- Programme Director (see chapter 4.2);
- Process organisation and administrative support for students and faculty (see chapter 4.2);
- Cooperation with business enterprises and other organisations (see chapter 4.3);
- Quantity, quality, media and IT equipment of teaching and group rooms (see chapter 4.4);
- Access to literature (see chapter 4.4);
- Career Counselling (see chapter 4.5);

- Alumni activities (see chapter 4.5);
- Programme description (see chapter 5.3).

For the **IT in Business** programme only:

- Objectives of the study programme (see chapter 1.1);
- Logic and conceptual coherence (see chapter 3.1);
- Integration of theory and practice (see chapter 3.1);
- Foreign language contents (see chapter 3.4).

For the overall assessment of the programmes, please refer to the quality profile at the end of this report.

Information

Information on the Institution

Narxoz University was established in 1963 as an independent institution on the Economics College of Kazakh National University (now Al-Farabi Kazakh National University). Its mission at that time was to educate highly qualified specialists to support the acceleration of structural reforms and economic growth. In its early years the University had three colleges: economic planning, accounting and finance. In 1964, the Programme for Postgraduate Studies was launched for scholars and academics and the Higher School of Economics was established for part-time studies.

The University has operated under various names which are chronologically:

- Alma-Ata Institute of National Economy (AINE)
- Kazakh State University of Economics
- Kazakh State Academy of Management (KSAM)
- Kazakh University of Economics
- New University of Economics

Nevertheless, it has always been known informally as “Narxoz” which is an abbreviation of the Russian words “Narodnoye Khozyaistvo” meaning ‘national economy’.

In 2016, the institution was officially renamed Narxoz University. In 2020 it became a Non-Profit Joint-Stock Company (NJSC). The sole shareholder is a Kazakh businessman. Students have to pay tuition fees. Any operational surplus is reinvested to support improvements in education and research quality. Narxoz’s task is to educate specialists in business, economics, digital technologies, law and social sciences. Since its creation in 1963 over 140,000 alumni have graduated from the University. In June 2022, the University moved into newly reconstructed facilities.

The University operates in particular based on the Laws on Education and Science. It is licensed by the government to provide educational services. Operations are also governed by related laws and regulations on labour issues, the standard rules for higher education and relevant parts of other legal documents issued by the Ministry of Science and Higher Education of the Republic of Kazakhstan (MSHE). Governance of the University is carried out in accordance with the organisational structure presented in the University Organigram²:

- At the top there is a Board of Directors with external personalities. The Charter of the University is the main governing document setting out legal and structural issues and responsibilities. Chairman of the Board of Directors participated in the panel discussion with the University management.
- The Management Board includes the President of Narxoz University (Chairman), the Provost, Director of Finance and Legal Affairs as well as the Directors of three Schools.
- The Academic Council has important academic functions for the whole University.

² See Annex 1

- An Advisory Committee with external managers of leading companies in Almaty gives advice to the University and acts as link to business and public administration.

For the education of students the University comprises Higher Schools that are subdivided into departments for the subjects and programmes:

- School of Economics and Management (SEM),
- School of Digital Technologies (SDT),
- School of Law and Public Policy,
- School of Arts and Social Sciences,
- Graduate School of Business.

The **Applied Mathematics in Digital Economics (AMDE)** and **Statistics and Data Science (SDS)** programmes are part of the School of Digital Technologies (SDT) which was one of the newly established divisions, with the mission to offer programmes in information technologies, information security, mathematics and statistics and to contribute to the development of digital skills for all Narxoz students as part of the “core” competencies instilled by the University as outlined in the strategy. Both programmes were redesigned and relaunched in 2022.

The **IT in Business (ITB)** programme was developed in 2022 and is part of the School of Economics and Management (further SEM) for business orientation, economic implications, management applications and industry partnerships.

Further programme development, statistical data

In 2022 Narxoz was granted institutional accreditation and accreditation of seven study programmes by FIBAA.

In January 2023, Narxoz adopted a new “Strategy 2030”. In this context the University’s actual vision is: The university will become an internationally accredited university that provides multidisciplinary and globally oriented education with strong ties to the industry for future real-life leaders.

Narxoz defined its mission as follows: The University aims to contribute to the development of society by training leaders who take on and solve complex integral tasks in real life.

Based on its vision and mission the University has set five strategic goals:

- **Talented Learners:** Developing talented students as future leaders in the real world, ensuring high-quality admission, quality of programmes and employment outcomes.
- **Faculty and Knowledge:** Improving the quality of the faculty by attracting international professors, Central Asian citizens who have received education abroad, as well as practitioners, and thereby improving the quality of education.
- **Real World Connection:** Collaboration and continuous communication with employers and partners to ensure the relevance of programmes, minor programmes, business involvement in education with further implementation of the contribution of business councils³ to the university's activities.
- **Digitalisation:** further developing digital literacy and embedding technology in teaching, research and business processes.
- **Campus development:** development of the ecosystem of the main campus with a digital environment for training and services, construction of two dormitories and reconstruction of the second campus.

³ <https://en.narxoz.kz/sem/business-council>

Study Programmes: Statistics and Data Science

		2022 Cohort	2021 Cohort	2020 Cohort
# Study Places offered by HEI		35	35	35
# Applicants	∑	32	32	8
	f	22	20	5
	m	10	12	3
Application rate		91%	91%	23%
# First-Year Students (<i>accepted applicants</i>)	∑	32	32	8
	f	22	20	5
	m	10	12	3
Rate of female students		69%	63%	63%
# Foreign Students	∑	0	0	0
	f	0	0	0
	m	0	0	0
Rate of foreign students		0	0	0
Percentage of occupied study places				
# Graduates	∑	n/a	n/a	n/a
	f			
	m			
Success rate (<i>students who finished their studies</i>)		n/a	n/a	n/a
Dropout rate (<i>students who dropped their studies</i>)		n/a	n/a	n/a
Average duration of study		n/a	n/a	n/a
Average grade of final degree		n/a	n/a	n/a

Study Programmes: Applied Mathematics in Digital Economics*

		2022 Cohort	2021 Cohort	2020 Cohort
# Study Places offered by HEI		80	60	40
# Applicants	∑	84	43	40
	f	56	29	27
	m	28	14	13
Application rate		105%	72%	100%
# First-Year Students (accepted applicants)	∑	78	34	40
	f	54	25	27
	m	24	9	13
Rate of female students		69%	74%	68%
# Foreign Students	∑	0	2	0
	f	0	1	0
	m	0	1	0
Rate of foreign students		0	6%	0
Percentage of occupied study places		98%	57%	100%
# Graduates	∑	n/a	n/a	n/a
	f	n/a	n/a	n/a
	m	n/a	n/a	n/a
Success rate (students who finished their studies)		n/a	n/a	n/a
Dropout rate (students who dropped their studies)		data not available	0%	23%
Average duration of study		n/a	n/a	n/a
Average grade of final degree		n/a	n/a	n/a

As the IT in Business programme has started in August 2023 with 15 first-year students, there is no statistics available yet.

Appraisal:

The SDS and AMDE study programmes have been relaunched in 2022 with modified contents whereas the IT in Business programme has started in 2023. Therefore, this situation does not allow to draw conclusions for the future development. However, in SDS and AMDE the numbers of applicants as well of fist-year students are increasing which mirrors their improving attractiveness. Also, the share of female students is clearly exceeding the one of male students.

Programme Description and Appraisal in Detail

1. Objectives

1.1 Objectives of the study programme (Asterisk Criterion)

As the Bachelor programmes Applied Mathematics in Digital Economics (AMDE) and Statistics and Data Science (SDS) belong to the School of Digital Technologies (SDT), they follow the common objectives set out by this School for mathematical and statistical programmes:

- Educate students to practice ethically-informed and evidence-based approaches to professional judgment and decision making in their field of study;
- Train competent specialists who perform professional functions by appropriately selecting and applying mathematical / statistical methods and theories, digital technologies, software and programming tools;
- Help students develop effective verbal and written communication skills and encourage them to engage in productive teamwork, take on leadership roles and influence the actions and behaviour of decision makers and stakeholders;
- Equip students with a comprehensive skillset of data science and mathematical modelling to enable them to carry out systematic analysis, forecast the outcomes of different scenarios and present conclusions to both specialist and non-specialist audiences;
- Stimulate self-directed and interdisciplinary learning to unlock students' individual potential as competent professionals and responsible members of the society.

Statistics and Data Science

As for the SDS programme, in addition to these common objectives, graduates shall be able upon successful completion of the programme to:

- Integrate modelling and computational skills into the development of complex data-driven problem solutions using mathematical tools;
- Design and generate correct statistical reporting for both the public and private sector;
- Apply modern computing technologies (machine learning, artificial intelligence, parallel and distributed computing, etc.) and algorithms to solve practical problems associated with large amounts of data;
- Design the process of collecting, storing, processing, and analysing data in order to aid data-driven decision making in relevant fields of socio-economic activity;
- Develop and implement systems / solutions for optimisation of business processes using appropriate IT tools, statistical methods and mathematical apparatus.

The SDS programme has its foundations in a 'Statistics' programme that has long supplied the market with specialists in quantitative analysis of socio-economic activity who apply the methods of collecting and processing of statistical information to the tasks of enterprise-based or population-wide forecasting and decision making. With accelerating proliferation of data generated within the socio-economic sphere in recent years, it became imperative to enrich this programme with data science, business intelligence and programming components.

Applied Mathematics in Digital Economics

In addition to the common objectives, upon successful completion of the programme the AMDE graduates will be able to:

- Model processes and systems in digital economics by appropriately selecting, combining, and applying relevant mathematical methods and digital technologies;
- Identify, formulate, and solve applied problems based on the analysis of relevant business context;
- Apply mathematical analysis, statistical and modelling methods to solve problems at the intersection of different intellectual domains;
- Find optimal solutions to problems in the corresponding field by adequately employing mathematical apparatus, statistical methods, operations research, and numerical analysis;
- Competently use computer technology, write code and devise algorithms to implement mathematical models of applied problems.

The programme focuses on educating applied mathematicians, who, being in possession of logical-mathematical thinking, computer coding skills and adhering to the culture of data-driven decision making, would be able to competently use mathematical modelling apparatus when designing and programming the solutions to the problems of organisations in the digital economics. The latest redesign of the programme aimed to further strengthen the programming and mathematical modelling sides of its curriculum and ensured that students start mastering the foundations of their professional skillset from the very beginning of their coursework.

IT in Business

The ITB programme is offered by the School of Economics and Management (SEM) and is oriented at the SEM Graduate Profile⁴. This means the graduates

1. Have business communication skills in three languages (Kazakh, English, Russian);
2. Are able to bear individual responsibility in the performance of tasks;
3. Have an independent point of view based on critical thinking;
4. Have the ability to work effectively in an intercultural environment;
5. Can independently make and evaluate management decisions based on analysis of the current state of the business environment and strategic planning;
6. In their relations with people and the environment, they adhere to moral, ethical and legal norms;
7. Based on these standards, they are able to critically assess the socio-cultural and economic-political processes taking place in the country and the world;
8. Adhere to professional ethics and moral principles in their work;
9. Are able to work effectively in a team as a leader or as a member of it;
10. Strive for development in personal and professional competencies.

The Learning Outcomes of the programme have been defined as follows: A graduate

1. Expresses professional ethical judgment by reviewing data evaluation methods, taking into account the principles of corporate social responsibility, research norms and academic integrity.

⁴ Graduate Profile of the School of Economics and management, Narxoz University

2. Uses information tools and cloud technologies, big data technologies, smart technologies, analytical tools and theories of systems and information in the field of business and management, performing professional functions for processing financial and management information
3. Provides information for decision-making based on data analysis, using argumentative oral, written, communication skills, and demonstrating the ability to work in a team.
4. Applies theoretical and analytical materials obtained through modern methods of data processing necessary for the implementation of professional functions in the areas of finance, management, marketing, future forecasting and data analytics.
5. Demonstrates academic writing and public speaking skills by presenting financial, management reports to internal and external users.
6. Determines the needs of the organisation in changes, because of uncertainty and crisis, and participates in the implementation of changes with the help of IT tools.
7. Participates in the construction of business processes, regulation and resolution of controversial situations of the organisation based on the analysis of economic, technological and social events in the country and the world.
8. Simulates computing processes, robotic systems and decision-making systems, analysing subject areas, choosing optimal means for implementing advanced IT technologies.
9. Takes part in ensuring information security and data protection, as well as maintaining IT infrastructure.
10. Thinks systematically, creating efficient algorithms and developing programme codes in modern programming languages.
11. Builds a financial model, focusing on the strategic goals of the organisation, planning and taking into account risks, providing information and IT support for financial management process.

The purpose of the BBA in IT in Business Bachelor programme is training of highly qualified specialists who will be able to effectively solve business problems by applying competencies in the field of finance, accounting and auditing and in general business administration using information technology, big data processing, mobile and web technologies. Graduates of the programme will be employed across the private and public sectors, international companies, state and Kazakhstani companies. According to the Academic Policy⁵, in the second and third years, having received basic knowledge and skills, students with the help of advisors, will have the opportunity to adjust their educational programme. The flexibility of the educational programme also allows students to widen their experience by taking Minors.

According to Narxoz, all three study programmes are conducted based on the principles of:

- Programme flexibility;
- Interdisciplinarity and integration;
- Practice-orientation (involvement of practical lecturers into academic process);
- Student orientation (involvement of students in the development and assessment of the programme);
- Focus on developing knowledge and skills;
- Transparent programme management.

⁵ See Narxoz University Academic Policy

Objectives of the programmes at hand are based on the sixth level of the European Qualifications Framework (EQF) as well as on the first level of the EHEA QF⁶.

Appraisal:

The qualification objectives of the three programmes are explained and convincingly presented in relation to their respective target group, targeted professional field and societal context of the discipline. They embrace academic proficiency, comprehensive employability, as well as the development of the individual student’s personality.

The subject-specific and extra-curricular qualification objectives and skills to be acquired correspond with the aspired level at graduation. They take into account the requirements of the European Qualification Frameworks.

As for the **IT in Business programme**, the panel is convinced that Narxoz University systematically bases the qualification objectives on the specific requirements of the target group. They are documented in detail and are constantly reviewed for being adequate and up to date and are adapted accordingly.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.1*	Objectives of the study programme (Asterisk Criterion)		X (IT in Business)	X		

1.2 International orientation of the study programme design (Asterisk Criterion)

With international quality being one of Narxoz University’s priorities, the programmes at hand aim to increase their international orientation. Faculty participate in academic mobility programmes (e.g. Erasmus+), serve as visiting researchers in foreign universities (for details see Criterion 3.4.3). From 2023, the University has launched the “Teach for Narxoz” initiative that intends to draw faculty members with academic and professional qualifications also from abroad.

Moreover, Narxoz University’s Strategy envisions that teaching and learning in English should increase significantly by 2026.

Having admitted its first English-language IT cohort in 2021, from 2022 the SDT opened admission to English-medium cohorts in all of its programmes. From 2021 to 2022 the number of international students studying at the School increased from 16 to 26. The students at the School participate in international academic mobility programmes.

The 2022, curricular redesigns of both the SDS and AMDE programme aimed to harmonise the programme with relevant international curricular guidelines from the American Statistical

⁶ European Higher Education Area (EHEA) as well as to the European Qualifications Framework for Lifelong Learning (EQF).

Association⁷ respectively (for AMDE) with the guidelines of the Mathematical Association of America.

For the IT in Business programme, the SEM sees internationalisation as a strategic priority⁸. Its implementation is fulfilled through courses, that are referring to international developments such as “Informational-Communicational Technologies”. SEM takes the following steps on a regular basis to fit the internationalisation priority of the University:

- The academic programme has been created to match the School Graduate profile which is based on discussions with employers. The programme is designed to meet the needs of international employers and leading Kazakhstani companies.
- The faculty profile has been reviewed. Following this review, efforts have been made to attract staff with international qualifications.

One of the key aspects of the programme is its emphasis on developing students' language proficiency. The programme is being delivered in English. Students are required to use internationally recognised textbooks, case studies, and other didactical materials with strong international context in their studies.

Appraisal:

The panel welcomes that internationalisation is a strategic priority for the whole University. It acknowledges that the design of the three programmes appropriately takes into account the required international aspects, with respect, too, to its graduates' employability and that the Schools have started to internationalise faculty.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.2*	International orientation of the study programme design (Asterisk Criterion)			X		

1.3 Positioning of the study programmes

Positioning of the study programmes on the educational market

The programmes are facing partly different competitive situations in the relevant market of Almaty and nationwide.

SDS and AMDE

According to the data from the National Register of programmes, there are 44 universities in Kazakhstan that offer 122 undergraduate programmes studying Mathematics, Statistics and/or Data science. These programmes belong to six separate groups of programmes that can be categorised into four types according to the kind of professions: (1) schoolteachers, (2) business and economics

⁷ <https://www.amstat.org/education/undergraduate-educators#reports>

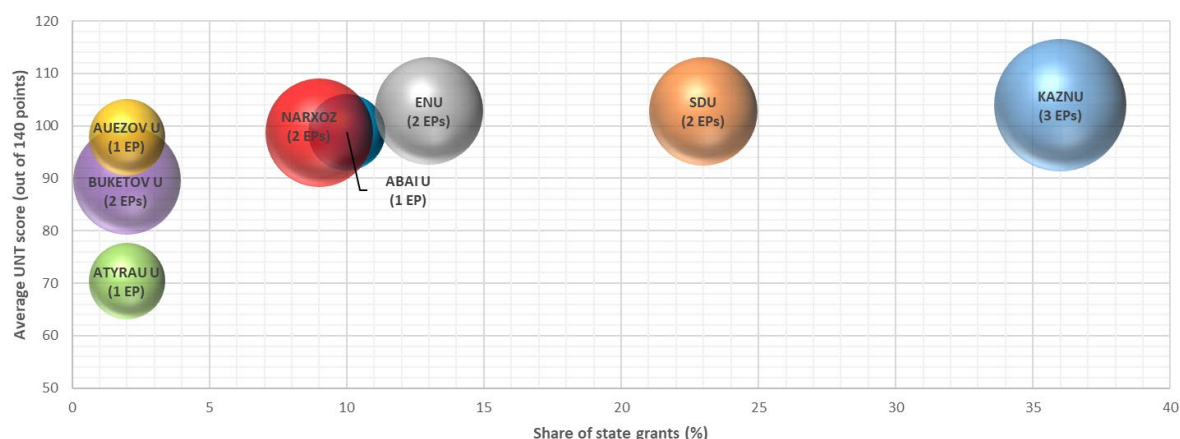
⁸ SEM Strategy, presented to the panel during the on-site visit.

specialists with data science competencies, (3) specialists in mathematics and statistics and (4) specialists in Information technologies.

Narxoz University’s SDS and AMDE programmes belong to the Group of Educational Programmes (GEP) B055. Programmes within this GEP tend to focus directly on the fundamental and/or applied aspects of Mathematics and Statistics. The applicants entering universities through this GEP must choose “Mathematics” and “Physics” as their two major subjects within the Unified National Testing (UNT)⁹ – the obligatory examination that all school leavers wishing to enter higher education need to sit.

There are four main competitors of Narxoz – Kazakh National University (KAZNU), Suleyman Demirel University (SDU), Eurasian National University (ENU), and Abai Kazakh National Pedagogical University (ABAI U). Narxoz University’s GEP B055 (Statistics and Data Science and Applied Mathematics in Digital Economics programmes) attract about 9 % of country-wide grant awardees with the average UNT score of 99 points out of 140, whereas KAZNU attracts 4 times as many grant awardees with the average UNT score of 104 points.

Universities offering programmes in GEP B055: relationship between share of state grant awardees attracted (%), their average UNT score, and the number of programmes offered by Universities within GEP B055



IT in Business

Narxoz University considers the launch of the new IT in Business programme a promising development, as it suggests that there is growing recognition of the importance of technology in the business world and complies with the fourth strategic goal of the University - digitalisation. However, the fact that only five universities – KIMEP, KBTU¹⁰, KAZGUU, De Montfort and Narxoz offer such a programme indicates that it may not yet be widely accessible across the country.

Market segment in IT in Business programmes

No	Market segment	Total cost of the Bachelor programmes	HEIs
1	High quality at a relatively high price	7,000 – 12,000 EUR	KIMEP, De Montfort University

⁹ See below chapter 2 (Admission)

¹⁰ Kazakh British Technical University in Almaty.

2	Good quality – affordable price	2,000 – 5,000 EUR	KBTU, KAZGUU, Narxoz
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The results of market research conducted by the programme management show that the programme belongs to the high quality-affordable tuition fee category.

To ensure that the programme will be successful and will meet the needs of students and employers, SEM considers several factors.

First, SEM ensures that the curriculum is well-designed and covers a range of topics that are relevant to the industry, such as programming, database management, and information security.

Second, SEM provides students with opportunities to gain practical experience through internships such as BeelineBootCamp, Narxoz Hackathon, Big Four (EY, KPMG, Deloitte and PWC, the leading accounting and audit companies), Open Days and capstone projects such as the course ‘IT project management in the programme’. This shall help students develop the skills and knowledge needed to succeed in the workforce.

Third, the programme management should keep up with the latest trends and technologies in information technology and business to ensure that their programme remains relevant and competitive. This involves partnering with industry experts – Prime Source, DAR, Beeline, ForteBank and Big Four companies.

As to the **positioning of the study programmes on the job market for graduates**, in Kazakhstan, as confirmed in a recent national report¹¹, the focus of national priorities on the digitalisation of economic sectors, effective public administration through digital transformation¹², as well as decision-making based on reliable data positively influence the growth of demand for specialists in IT, data analysis and applied mathematics. Along with that, the global big data analytics market is expanding at a high pace – it was valued at over \$240 billion in 2021 and is projected to grow to over \$650 billion by 2029¹³.

An overview of the Kazakhstani market of IT and data professions can be gleaned from the 2020, 2021 and 2022 series of studies¹⁴ conducted by Kolesa Group (one of the largest Kazakhstani companies in IT and analytics) to explore the variety and requirements of IT and data-related jobs. According to this research, the skillset most frequently expected of data professionals includes the knowledge of:

- programming languages (Python, PL/SQL, C++, Java, R)
- ML libraries (Sickit-learn, PyTorch, TensorFlow, SciPy, Keras, XGBoost, etc.)
- data storage systems (relational databases, Cloud services, Hadoop, NoSQL DB)
- mathematical and statistical tools (including Excel/Google sheets, R, MATLAB, etc.)

¹¹ “Labour Market of Kazakhstan: On the Way to Digital Reality” National Report published in 2022 by the Workforce Development Center under the Ministry of Labour and Social Protection - <https://iac.enbek.kz/ru/node/1457> (last access October 20, 2023).

¹²National project "Technological breakthrough via digitalization, science and innovation" - <https://adilet.zan.kz/rus/docs/P2100000727> (last access October 20,2023)

¹³ <https://www.statista.com/statistics/1336002/big-data-analytics-market-size> (last access October 20, 2023).

¹⁴ <https://zerttey.kolesa.group/> (last access October 20, 2023).

- BI instruments (Power BI, QlikView/QlikSense, Tableau, etc.)

Most of the competencies identified by the Kolesa Group studies are present in the curriculum of SDS and the AMDE programmes¹⁵. Therefore, Narxoz University is expecting these study programmes to be strongly oriented at the needs of the labour market and the graduates to be successful in achieving a job.

IT in Business

Overall programmes in the business sphere are one the most popular specialties as well as IT sphere. The hh.kz, job search service in Kazakhstan, compiled a rating of professions that were most in demand in Kazakhstan in 2022¹⁶. The top 5 are the following industries:

- Sales;
- Accounting and finance;
- Administrative staff;
- Transport, logistics;
- Information Technology.

According to the Workforce Development Centre's Labour Market in Kazakhstan Report, the demand for wage labour is divided into new demand and replacement demand. New demand represents the expected increase in the number of employees due to economic growth (expansion). In the baseline scenario, the new demand for employees during 2022–2030 is expected to be at the level of 924 thousand people. In the field of business services (information and communications, finance and insurance, real estate transactions, professional and scientific activities, administrative and support services), the demand for employees is estimated at 268 to 314 thousand people, or 15 % of total demand.

As mentioned above in chapter "Further Development of the Programmes", the strategic mission of Narxoz University is to contribute to the development of society through the training of leaders who take on and solve complex integral tasks in real life. According to the strategic vision, by 2030 Narxoz sees itself as an internationally accredited University that provides multidisciplinary and globally oriented education with strong ties to the industry for future real-life leaders.

The three programmes are designed to implement the mission and strategy of the University by creating conditions for continuous professional self-improvement, developing the social and personal competencies of specialists, expanding social mobility and competitiveness in the labour market, and are aimed at providing practice-oriented training of highly qualified specialists.

Appraisal:

The reasons given for the positioning in the educational market of these study programmes are plausible. The panel notes that Narxoz thoroughly examined the educational markets for the three programmes.

¹⁵ See also chapter 3.1 below.

¹⁶ <https://informburo.kz/novosti/top-10-samyx-vostrebovannyx-professii-2022-goda-nazvali-v-kazaxstane> (last access October 20, 2023).

The arguments in support of graduate employability on the basis of the stated qualification objectives are convincingly presented. The future fields of employment for graduates are plausibly set forth. The panel welcomes that Narxoz University has thoroughly analysed the job markets for graduates and has comprehensively incorporated the results in the three study programmes.

The study programmes are convincingly integrated into the HEI's overall strategic concept also taking into account Narxoz's strategic vision and mission. Their qualification goals are in line with the University's mission and strategic planning.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1.3	Positioning of the study programme					
1.3.1	Positioning of the study programme in the educational market			X		
1.3.2	Positioning of the study programme on the job market for graduates („Employability“)		X			
1.3.3	Positioning of the study programme within the HEI's overall strategic concept			X		

2. Admission

Narxoz admission regulations on rules of admission for “Bachelor’s Degrees” and for “postgraduate education” are based on the MSHE¹⁷ requirements as well as on the “Academic Policy”¹⁸.

In accordance with these regulations, to be admitted to the undergraduate programme candidates must take a UNT (Unified National Test). The test is administered and scored by the National Testing Centre (NTC) of the MSHE and published on their website to ensure transparency. After documents’ submission applicants have to register at the database of the NTC and at the scheduled time take online (written) examinations on the NTC platform in terms of the UNT. Performance on this test also serves as a competition for eligibility to receive a state educational grant. For students who wish to apply for the Alтын Belgy state scholarship, applicants need to submit their overall high school performance and UNT results. There are various scholarships available based on merit and need. These are listed on the University website¹⁹. The decision to grant scholarships is taken by the Financial Aid Commission. Financial support for applicants through state-funded grants is based on the results of a national Republican Competition Commission in accordance with UNT performance, choice of language of study and subject.

Candidates apply directly to the University Admission Office with supporting documents. A full listing of these documents is published on the University website²⁰.

Admission of international students is based on an interview or admission test conducted by the University Admissions Office. Foreign students who have graduated from educational institutions in Kazakhstan can be admitted to the University based on this interview or test. Foreign students who have graduated from educational institutions outside Kazakhstan can be admitted to the University also based on this interview or test but are subject to certification of qualifications prior to commencement of their studies.

Each newly enrolled student gets access to a personal corporate mailbox, as well as a personal account on the “banner student” platform. Banner is an integrated student information system which can include (among others): students accounts, advising, housing, disability services and more. To optimise the provision of information, all students can install the “Narxoz mobile” application with all available information in real time. Thus, the main updates, current news and mailings are made through emails to students’ corporate addresses, as well as push notifications in mobile applications, a “student handbook” guides newly arrived students to ease their adaptation at the University.

To enter the **SDS or the AMDE** programme, Kazakhstani applicants must choose the following composition of the UNT test (total 120 questions resulting in maximum of 140 points):

- Three compulsory subjects common for all groups of programmes – Mathematical literacy (15 questions), Reading literacy (15 questions), History of Kazakhstan (20 questions);
- Two major subjects specific for GEP B055 – Mathematics and Physics (in each, 25 questions with 1 correct answer option + 10 questions with ≤3 correct answer options).

¹⁷ Ministry of Science and Higher Education of the Republic of Kazakhstan.

¹⁸ As of August 27, 2022, see “Admission Policy of Narxoz University”, chapter 2, p. 6 ff.

¹⁹ <https://en.narxoz.kz/grants-and-discounts/> (last access October 20, 2023).

²⁰ <https://en.narxoz.kz/admission/> (last access October 20, 2023).

In order to attract more highly qualified applicants, in 2021 the Schools SDT and SEM adopted additional admission requirements²¹. Under these new rules, Bachelor programme applicants should meet the following requirements:

- Overall UNT Score > 70
- English level (B1 (CEFR) / IELTS >5.0)
- Mathematics UNT Score > 17 points.

Applicants must pass an English Placement Test (EPT). If an applicant has a IELTS score more than 5.0, then this requirement is waived. Applicants are exempt from the English placement test if they have a supporting document on English language proficiency. If applicants do not meet the required level of English, they can attend intensive classes in the Foundation programme. If applicants score 5 to 17 UNT points in Mathematics, they are determined to take the programmes' compulsory preparatory courses that are provided as part of the Mathematics Foundation programme. If students do not meet the exit requirements, admission is refused.

As to the counselling of applicants, Narxoz University's Recruitment and Admissions Department is the unit responsible for implementing the work with prospective students in online and offline formats. All appropriate information on admission rules and procedures is available and regularly updated at the university website. Narxoz provides counselling to prospective students both in-person as well as through a dedicated IT system. They can receive in-person counselling services from faculty and staff members at "Open House" events regarding admission procedure, programme information, scholarships and financial aid, exchange and academic mobility, and career opportunities. The status of a submitted application may be reviewed using the applicant portal.

Thus, key activities of the Department are career guidance and counselling; school visits; open days; exhibitions and fairs; summer admissions; virtual admissions; online counselling. The counselling service can be reached via the Call Centre, the website's online consultant or by direct email. The online application is available in three languages: Kazakh, Russian, and English.

As noted above, the main criteria for successful admission are now higher than before. According to the selection procedure of the Master programme, holders or those who are in the process of achieving international certification in CIM and others may apply for course waivers up to a maximum of 50% of the curriculum.

The requirement of professional experience is not relevant for the undergraduate programmes.

Considering the above admission criterion on English language proficiency, students must be ready to take courses in English. Narxoz University offers support for students to prepare for the English entry examination and improve their English skills throughout their studies by using course

²¹ Admission Rules in the Narxoz University of Applicants for Undergraduate Educational Programmes

textbooks in English. They are given the opportunity to determine their appropriate level via placement tests and to take English courses for additional payment.

Credit recognition and transfer terms of Narxoz University for foreign languages are as follows:

Certificate	Disciplines	Credit recognition conditions of Narxoz University
IELTS 5,0 - 6,5	Foreign language	Recognition of the result and transfer of 10 credits
IELTS 7,0 - 9,0	Foreign language	Recognition of the result and transfer of 20 credits
TOEFL iBT 89-109 CBT 227-269 PBT 567-636	Foreign language	Recognition of the result and transfer of 10 credits
TOEFL iBT 110-120 CBT 227-269 PBT 567-636	Foreign language	Recognition of the result and transfer of 20 credits

On top of that, there are several extracurricular opportunities for students learning English:

- Guest lectures within the Leadership Development Programme are delivered in English;
- Research Centres organise regular meetings with native English speakers.

Admission to the programme is based on the principles of openness and transparency²². The information on entry requirements can also be found on the University website. The SEM webpage²³ contains relevant information for applicants on the academic programmes, teaching staff, and the Catalogue with all policies and procedures explained. The admission decision is made by the University Admissions Committee, and communicated to applicants once the recommendations of the Committee are approved by the President of the University.

Appraisal:

The national requirements are presented and taken into account. The basic admission requirements are defined by law and conducted by the National Testing Centre for the Bachelor study programmes. Based on this, Narxoz's admission procedure takes into account the national requirements. These admission requirements are defined and comprehensible. The regulations also include the selection procedure which is – because of the described criteria - transparent and ensures that qualified students are admitted.

The panel welcomes that the admission requirements for the English language with higher scores than before are oriented towards the strategic goals of international orientation of the study programmes, even if the numbers of applicants may drop.

Applicants can directly turn to a student counselling service, or to whatever other helpdesk at the HEI, for clarification of specific questions, of personal aptitude, of career perspectives etc. Personal

²² See Narxoz Academic Policy chapter 2 p. 6.

²³ <https://en.narxoz.kz/sem/> (last access October 20, 2023).

dialogue between applicants and the HEI is provided by defined office hours, by telephone and via e-mail.

The admission requirements (required language proficiency level or required result in a concrete language test) or preparatory language courses ensure that students are able to successfully complete the study programme (courses, additional literature, utilisation of counselling services and extracurricular activities).

The admission procedure is described, documented, and accessible for interested parties. The admission decision is based on transparent criteria and is communicated in writing.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
2.1*	Admission requirements (Asterisk Criterion)		X			
2.2	Counselling for prospective students			X		
2.3*	Selection procedure (if relevant)			X		
2.4(*)	Professional experience (if relevant; Asterisk Criterion for master programmes that require professional experience)					X
2.5*	Ensuring foreign language proficiency (Asterisk Criterion)			X		
2.6*	Transparency and documentation of admission procedure and decision (Asterisk Criterion)			X		

3. Contents, structure and didactical concept of the programme

3.1 Contents

The first year of all three programmes includes courses required by MSHE, which are to some extent common to all majors. The curricula for the second, third, and fourth year are approved by the School Quality Assurance Council (QAC). The design of each programme follows the general learning outcomes that have been described in chapter 1.1. Moreover, it is based on the concretised specific intended learning outcomes (LO).

Statistics and Data Science (SDS) and Applied Mathematics in Digital Economics (AMDE)

The programme structure of both programmes starts building the foundations of mathematical and IT competencies. In both study programmes year one is identical and is devoted to the study of basic courses in mathematics (Core Mathematics Required) and information technology (Core Programming Required). From year two, students embark on studying Major courses with specialised tracks that are available to them as part of the elective component from the fourth semester. The specialised tracks are for

- SDS: “Data Science” and “Business Statistics”,
- AMDE: “Applied Data Analysis” and “Risk Analysis & Modelling”.

A student not restricted to one specialised track and subject to pre-requisites may choose any of the twelve courses of the Electives module. Moreover, the courses of any specialised track do not completely cover the entire volume of the Electives module – this is done to stimulate students to master diverse competencies by employing a ‘mix and match’ approach. To complete a specialised track the student must pass at least eight courses from the electives of the corresponding concentration.

After year three, students must complete an internship which aims at introducing them to the functions and tasks of their future profession and helping them develop professional competencies and learn how to identify problems in need of solution. Finally, in year four, students pass a final exam in one of the two formats: team-based preparation and defence of a thesis project or sitting two comprehensive examinations. The final exam in the examination and project formats allows the students to demonstrate in writing and orally their mastery of subject knowledge, professional competencies, ability to research and solve problems, critical thinking, and ability to communicate their ideas clearly and persuasively.

Curriculum Overview Bachelor of Statistics and Data Science, 8 Semesters

Modul No.	Title of Module / Course Unit	Credit Points per Semester								Workload		Method of Teaching lecture course, seminar, tutorial, laboratory work	Weight of exam related to final grade	
		1	2	3	4	5	6	7	8	Hours in Classes	Hours Self-Study			
1st Semester														
General Education Required		10												
LNG 1105	Foreign Language	5								45	90	T	40%	
GED 1106	History of Kazakhstan	5								45	90	L/S	40%	
Mathematics Core Required		12												
MATH 1202	Mathematical analysis I	6								60	102	L/P	40%	
MATH 1203	Linear Algebra and Analytical geometry	6								60	102	L/P	40%	
Programming Core Required		6												
IT 1204	Fundamentals of Programming	6								60	102	L/P	40%	
Obligatory non-academic module		0												
GED 1106	Physical training	0								N/A	N/A	N/A	N/A	
Total (Academic and non-academic)		28								270	486			
2nd Semester														
General Education Required			10											
LNG 1106	Foreign Language		5							45	90	T	40%	
GED 1105	Informational-communicational technologies		5							45	90	L/P	40%	
Mathematics Core Required			12											
MATH 1209	Mathematical analysis II		6							60	102	L/P	40%	
MATH 1210	Discrete Mathematics		6							60	102	L/P	40%	
Programming Core Required			6											
IT 1211	Programming technologies		6							60	102	L/P	40%	
Obligatory non-academic module			0											
GED 1112	Physical training		0							N/A	N/A	N/A	N/A	
Total (Academic and non-academic)			28							270	486			
3rd Semester														
General Education Required				5										
LNG 1101/	Kazakh (Russian) Language			5						45	90	T	40%	
School Required				5										
LNG 2213	Professionally-oriented Foreign Language			5						45	90	T	40%	
Mathematics Core Required				15										

STAT 2215	Theory of Probability and Mathematical Statistics			5				45	90	L/P	40%
MATH 2216	Mathematical analysis III			5				45	90	L/P	40%
MATH 2218	Differential equations			5				45	90	L/P	40%
Programming Core Required				5							
IT 2217	Algorithms and Data Structure			5				45	90	L/P	40%
Obligatory non-academic module				0							
GED 2119	Physical training			0				N/A	N/A	N/A	N/A
Total (Academic and non-academic)				30				270	540		
4th Semester											
General Education Required				5							
LNG 1102/LNG 1104	Kazakh (Russian) Language			5				45	90	T	40%
Mathematics Core Required				5							
MATH 2222	Mathematical analysis IV			5				45	90	L/P	40%
School Required				5							
LNG 2214	Professionally-oriented Foreign Language			5				45	90	T	40%
Major Required				11							
STAT 2221	Statistics			6				60	102	L/P	40%
MATH 2223	Numerical Methods			5				45	90	L/P	40%
Electives Module - 5 ECTS from the list below:				5				45	90		
DSAI 2224	Data Visualization			5				45	90	L/P	40%
STAT 2224	Professional Excel			5				45	90	L/P	40%
Obligatory non-academic module				0							
GED 2125	Physical training			0				N/A	N/A	N/A	N/A
Total (Academic and non-academic)				31				285	552		
5th Semester											
Major Required				15							
STAT 3226	Applied Statistics			5				45	90	L/P	40%
STAT 3227	Time series analysis and forecasting			5				45	90	L/P	40%
DSAI 3228	Big data analytics			5				45	90	L/P	40%
Electives Module - 15 ECTS from the list below:				15				135	270		
IT 3329	Database Management System			5				45	90	L/P	40%
STAT 3329	Business Statistics			5				45	90	L/P	40%
DSAI 3330	Machine Learning			5				45	90	L/P	40%
STAT 3330	System of National Accounts			5				45	90	L/P	40%
STAT 3231	Regression analysis			5				45	90	L/P	40%

ECN 1201	Introduction to Economics					5			45	90	L/S	40%
Total (Academic and non-academic)						30			270	540		
6th Semester												
General Education Required												
GED 2107	Philosophy					5			45	90	L/S	40%
School Required												
MNG42 05	Career Development					3			30	51	L/S	100%
Major Required												
STAT 3233	R ²⁴ basics					5			45	90	L/P	40%
Electives Module - 20 ECTS from the list below:												
						20			180	360		
DSAI 3334	Introduction to Deep Learning					5			45	90	L/P	40%
STAT 3334	Basics of demography and population statistics					5			45	90	L/P	40%
MATH 3335	Actuarial mathematics					5			45	90	L/P	40%
STAT 3335	Statistics of production and investment					5			45	90	L/P	40%
DSAI 3337	Data Management (Big Data)					5			45	90	L/P	40%
STAT 3336	Statistics in International Economics					5			45	90	L/P	40%
MATH 3336	Mathematical modelling					5			45	90	L/P	40%
STAT 3337	Market statistics for goods and services					5			45	90	L/P	40%
Total (Academic and non-academic)						33			300	591		
7th Semester												
Internship	(7 weeks during Summertime)					7						
INT 3238	Educational Internship					5				135	N/A	100%
INT 3339	Industry Internship					2				54	N/A	100%
General Education Required												
GED 1101- 1104	Socio-Political Knowledge (Sociology, Political Science, Psychology, Culturology,					8			75	141	L/S	40%
Electives Module - 20 ECTS from the list below:												
						20			180	360		
DSAI 4341	Data Lake and System Infrastructure					5			45	90	L/P	40%
STAT 4341	Multidimensional statistical methods					5			45	90	L/P	40%
MATH 4342	Introduction to Stochastic Processes					5			45	90	L/P	40%
STAT 4342	Statistical analysis of risks					5			45	90	L/P	40%
DSAI 4343	Artificial intelligence					5			45	90	L/P	40%

²⁴ R is a language and environment (software facilities) for statistical computing and graphics.

STAT 4343	Financial and Banking Statistics							5		45	90	L/P	40%
IT 4344	Distributed Systems							5		45	90	L/P	40%
MNG 4344	Technological Entrepreneurship							5		45	90	L/P	40%
Total (Academic and non-academic)								35		255	690		
8th Semester													
School Required										25			
MNG 4145	Leadership and innovation							5	45	90		L/S	40%
Internship										8			
INT 4346	Pre-diploma Internship							8		216		N/A	100%
Final Exam										12			
FA 4347	Writing and defence of diploma work (project), or preparing and passing a compre- hensive exam							12		324		N/A	100%
Total (Academic and non-academic)								25	45	630			
Total		28	28	30	31	30	33	35	25				
									Total ECTS	240	1965	4515	

L: Lectures
P: Practicals / Labs
S: Seminar
T: Tutorial

Curriculum Overview

Bachelor of Applied Mathematics in Digital Economics, 8 Semesters

Modul No.	Title of Module / Course Unit	Credit Points per Semester								Workload		Method of Teaching	Weight of exam related to final grade
		1	2	3	4	5	6	7	8	Hours in Class	Hours Self-Study		
1st Semester													
General Education Required		10											
LNG 1105	Foreign Language	5								45	90	T	40%
GED 1106	History of Kazakhstan	5								45	90	L/S	40%
Mathematics Core Required		12											
MATH 1202	Mathematical analysis I	6								60	102	L/P	40%
MATH 1203	Linear Algebra and Analytical geometry	6								60	102	L/P	40%
Programming Core Required		6											
IT 1204	Fundamentals of Programming	6								60	102	L/P	40%
Obligatory non-academic module		0											

GED 1106	Physical training	0							N/A	N/A	N/A	N/A
Total		28							270	486		
2nd Semester												
General Education Required			10									
LNG 1106	Foreign Language		5						45	90	T	40%
GED 1105	Informational-communication al technologies		5						45	90	L/P	40%
Mathematics Core Required			12									
MATH 1209	Mathematical analysis II		6						60	102	L/P	40%
MATH 1210	Discrete Mathematics		6						60	102	L/P	40%
Programming Core Required			6									
IT 1211	Programming technologies		6						60	102	L/P	40%
Obligatory non-academic module			0									
GED 1112	Physical training		0						N/A	N/A	N/A	N/A
Total			28						270	486		
3rd Semester												
General Education Required				5								
LNG 1101/LN G 1103	Kazakh (Russian) Language		5						45	90	T	40%
School Required			5									
LNG 2213	Professionally-oriented Foreign Language		5						45	90	T	40%
Mathematics Core Required			15									
STAT 2215	Theory of Probability and Mathematical Statistics		5						45	90	L/P	40%
MATH 2216	Mathematical analysis III		5						45	90	L/P	40%
MATH 2218	Differential equations		5						45	90	L/P	40%
Programming Core Required			5									
IT 2217	Algorithms and Data Structure		5						45	90	L/P	40%
Obligatory non-academic module			0									
GED 2119	Physical training		0						N/A	N/A	N/A	N/A
Total			30						270	540		
4th Semester												
General Education Required				5								
LNG 1102/LN G 1104	Kazakh (Russian) Language		5						45	90	T	40%
Mathematics Core Required			5									
MATH 2222	Mathematical analysis IV		5						45	90	L/P	40%
School Required			5									
LNG 2214	Professionally-oriented Foreign Language		5						45	90	T	40%
Major Required			11									
STAT 2221	Statistics		6						60	102	L/P	40%
MATH 2223	Numerical Methods		5						45	90	L/P	40%
Electives Module - 5 ECTS from the list below:			5						45	90		

DSAI 2224	Data Visualization				5				45	90	L/P	40%
IT 2224	Applied Information Theory				5				45	90	L/P	40%
Obligatory non-academic module					0							
GED 2125	Physical training				0				N/A	N/A	N/A	N/A
Total					31				285	552		
5th Semester												
Major Required					15							
ECN 1201	Introduction to Economics				5				45	90	L/S	40%
MATH 3227	Equations of mathematical physics				5				45	90	L/P	40%
MATH 3228	Introduction to Geometric Modeling				5				45	90	L/P	40%
Electives Module - 15 ECTS from the list below:					15				135	270		
IT 3329	Database Management System				5				45	90	L/P	40%
MATH 3329	Applied Graph Theory				5				45	90	L/P	40%
DSAI 3330	Machine Learning				5				45	90	L/P	40%
STAT 3330	Applied Statistics				5				45	90	L/P	40%
STAT 3231	Regression analysis				5				45	90	L/P	40%
MATH 3231	Financial Mathematics				5				45	90	L/P	40%
Total					30				270	540		
6th Semester												
General Education Required					5							
GED 2107	Philosophy				5				45	90	L/S	40%
School Required					3							
MNG4205	Career Development				3				30	51	L/S	100%
Major Required					5							
MATH 3233	Mathematical modeling				5				45	90	L/P	40%
Electives Module - 20 ECTS from the list below:					20				180	360		
DSAI 3334	Introduction to Deep Learning				5				45	90	L/P	40%
DM 3334	3D Modeling and Animation				5				45	90	L/P	40%
MATH 3335	Actuarial mathematics				5				45	90	L/P	40%
DM 3335	Geoinformation Modelling				5				45	90	L/P	40%
DSAI 3336	Data Analysis				5				45	90	L/P	40%
CS 3336	Introduction to Cryptography				5				45	90	L/P	40%
STAT 3337	R basics				5				45	90	L/P	40%
IT 3337	Introduction to Computer Vision				5				45	90	L/P	40%
Total					33				300	591		
7th Semester												
Internship	(7 weeks during Summertime)								7			
INT 3238	Educational Internship								5	135	N/A	100%
INT 3339	Industry Internship								2	54	N/A	100%
General Education Required					8							

GED 1101-1104	Module of Socio-Political Knowledge (Sociology, Political Science, Culturology, Psychology)							8		75	141	L/S	40%	
Electives Module - 20 ECTS from the list below:								20		180	360			
STAT 4341	Time series analysis and forecasting							5		45	90	L/P	40%	
MATH 4341	Game Theory and Operations Research							5		45	90	L/P	40%	
MATH 4342	Introduction to Stochastic Processes							5		45	90	L/P	40%	
MATH 4343	Simulation modeling							5		45	90	L/P	40%	
STAT 4342	Statistical analysis of risks							5		45	90	L/P	40%	
DSAI 4343	Artificial intelligence							5		45	90	L/P	40%	
STAT 4344	Multivariate statistical methods							5		45	90	L/P	40%	
MATH 4344	Optimization methods							5		45	90	L/P	40%	
MNG 4344	Technological Entrepreneurship							5		45	90	L/P	40%	
Total								35		255	690			
8th Semester														
School Required								25						
MNG 4145	Leadership and innovation							5	45	90		L/S	40%	
Internship								8						
INT 4346	Pre-diploma Internship							8		216		N/A	100%	
Final Attestation								12						
FA 4347	Writing and defence of diploma work (project) , or preparing and passing a comprehensive exam							12		324		N/A	100%	
Total								25	45	630				
Total		28	28	30	31	30	33	35	25					
		Total ECTS							240	1965	4515			

L: Lectures
P: Practicals/Labs
S: Seminar
T: Tutorial

Minors' available to the students of SDS and AMDE are 'Banking', 'Digital Marketing', 'International Tourism', 'Event Management', 'Human Resource Management'.

IT in Business

In the first year, the IT in Business programme that belongs to the SEM²⁵ is administered by the School of Arts and Social Sciences. It consists of courses required by MSHE, which are to some extent common to all majors. In the second, third, and fourth year, IT in Business majors are approved by the SEM Quality Assurance Committee (QAC). The programme and content of required courses are developed in accordance with University strategy and recommendations of the Advisory Board.

Curriculum Overview Bachelor of IT in Business, 8 Semesters

Modul No.	Title of Module / Course Unit	Credit Points per Semester							Workload	Method of Teaching
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²⁵ See above chapter "Information".

		1	2	3	4	5	6	7	8	Hours in Class	Hours Self-Study	i.e. lecture course, seminar
1st Semester												
	General Education Required	23								207	414	
LNG 1105	English	5								45	90	T
LNG 1101/LNG 1103	Kazakh (Russian) Language	5								45	90	T
GED 1101	Module of Social and Political Knowledge: Sociology	2								18	36	L/S
GED 1102	Module of Social and Political Knowledge: Political Science	2								18	36	L/S
GED 1103	Module of Social and Political Knowledge: Culturology	2								18	36	L/S
GED 1104	Module of Social and Political Knowledge: Psychology	2								18	36	L/S
GED 1105	Informational-Communicational Technologies	5								45	90	L/S
	School Required	5								45	90	
RSCH 1201	Academic Writing	5								45	90	L/S
	Total	28								252	504	
2nd Semester												
	General Education Required		15							135	270	
LNG 1106	English		5							45	90	T
LNG 1102/LNG 1104	Kazakh (Russian) Language		5							45	90	T
GEN 1106	History of Kazakhstan		5							45	90	L/S
	School Required		5							45	90	
MATH 1201	Mathematics in Business		5							45	90	L/S
	Business Core Required		10							90	180	
ECN 1201	Introduction to Economics		5							45	90	L/S
ACC 1201	Financial Accounting I		5							45	90	L/S
	Total		30							270	540	
3rd Semester												
	Business Core Required			20						180	360	
FIN 2201	Principles of Finance			5						45	90	L/S
MNG 2201	Principles of Management			5						45	90	L/S
ACC 2202	Management Accounting			5						45	90	L/S
ECN 2202	Macroeconomics			5						45	90	L/S
	School Required			5						45	90	
BUS 2201	Quantitative Methods 1			5						45	90	L/S
	Major Required			5						45	90	

ITB 2301	Fundamentals of programming in Python			5					45	90	L/P
Total				30					270	540	
4th Semester											
	General Education Required			5					45	90	
GED 2107	Philosophy			5					45	90	T
	School Required			5					45	90	
BUS 2202	Computer Applications in Business			5					45	90	L/S
	Business Core Required			15					135	270	
MNG 2202	Business Communications			5					45	90	L/S
MRKT 2201	Principles of Marketing			5					45	90	L/S
FIN 2202	Corporate Finance			5					45	90	L/S
	Major Required			5					45	90	
ITB 2302	Fundamentals of SQL			5					45	90	L/P
Total				30					270	540	
5th Semester											
	Business Core Required			5					45	90	
MNG 3203	Organisational Behavior			5					45	90	L/S
	Major Required			20					180	360	
ITB 3303	Fundamentals of WEB Technologies			5					45	90	L/P
ITB 3304	Python: Algorithms and Data Structure			5					45	90	L/P
ITB 3305	Fundamentals of Information Security			5					45	90	L/P
BUS 3303	Quantitative Methods 2			5					45	90	L/P
	Electives Module			5					45	90	
	Minor/Elective 1			5					45	90	L/S
	Internship Module			2					0	54	
INT 3201	Educational Internship			2						54	n/a
Total				32					270	594	
6th Semester											
	Major Required							25	225	450	
ITB 3306	IT Project Management						5		45	90	L/P
ITB 3307	Analysis and Data Visualization						5		45	90	L/P
ITB 3308	WEB design						5		45	90	L/P
FIN 3303	Financial Modelling						5		45	90	L/P
ITB 3309	Fundamentals of IT and ERP systems						5		45	90	L/P
	Electives Module						5		45	90	
	Minor/Elective 2						5		45	90	L/S
Total							30		270	540	
7th Semester											
	Business Core Required							10	90	180	

BUS 4204	Corporate Business Law							5		45	90	L/S
MNG 4204	Operations Management							5		45	90	L/S
	Major Required							10		90	180	
ITB 4310	Machine Learning							5		45	90	L/S
ITB 4311	Information Technology and Ethics							5		45	90	L/S
	Electives Module							10		90	180	
	Minor/Elective 3							5		45	90	L/S
	Minor/Elective 4							5		45	90	L/S
Total								30		270	540	

8th Semester													
	School Required									9	81	162	
RSH 4202	Academic Research									5	45	90	L/S
MNG 4205	Career Development									4	36	72	T
	Business Core Required									5	45	90	
MNG 4206	Strategic Management									5	45	90	L/S
	Internship Module									8		216	
INT 4302/4303	Internships									8		216	
	Final Exam									8		216	
RSCH 4303	Diploma project/case studies									8		216	
Total										30	126	684	

	Obligatory Non-Academic Module												
GED 1108	Physical Education (ECTS not counted towards degree)												
Total		28	30	30	30	32	30	30	30	1998	4482		

- L:** *Lecture*
- P:** *Practicals/ Labs*
- S:** *Seminar*
- T:** *Tutorial*

The SEM offers six minor courses: Assurance (Joint programme with EY), Certified Internal Auditor, Financial Data Analytics, Human Resource Management, Project Management and Digital Marketing. Students can choose four of them as elective courses.

The following table lists the courses and intended learning outcomes that are expected to be achieved upon successful completion of the course.

IT in Business Learning Outcomes Matrix

Learning Outcomes Matrix											
Course Name	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9	LO 10	LO 11
<i>General Education</i>											
English					*						
Kazakh/Russian language					*						
Module of Social and Political Knowledge	*				*						
Informational-communicational technologies		*			*						
The History of Kazakhstan	*				*						
Philosophy	*				*						
<i>School Required</i>											
Academic writing			*		*						
Mathematics in Business							*			*	
Quantitative Methods 1		*		*							
Computer Application in Business							*			*	
Career Development			*		*						
Academic Research	*			*							
<i>Business Core Required</i>											
Introduction to Economics		*		*	*						
Macroeconomics			*		*						
Principles of Management	*		*	*	*						
Principles of Marketing	*		*		*						
Financial Accounting 1	*		*								
Management Accounting	*		*		*						
Principles of Finance	*		*		*				*		
Corporate Finance	*		*		*		*				
Business Communications	*				*						
Organizational Behaviour	*		*		*	*	*				
Corporate business law	*		*					*			

Operations Management	*		*		*	*	*				
Strategic Management	*		*		*	*	*				*
<i>Major Required</i>											
Fundamentals of programming in Python		*				*					
Fundamentals of SQL		*				*					
Fundamentals of WEB Technologies		*		*					*		
Python: Algorithms and Data Structure		*				*					
Fundamentals of Information Security									*		
Quantitative Methods 2		*		*			*				
IT Project Management	*		*		*	*					
Analysis and Data Visualization		*		*							
WEB design		*		*							
Financial Modelling						*		*			*
Fundamentals of IT and ERP systems								*	*		*
Machine Learning		*							*		*
Information Technology and Ethics	*				*				*		

According to the programme exit requirements, students complete a diploma project²⁶ in groups as part of the final state exam²⁷. The topics of diploma projects are developed by the programme management and approved by the Quality Assurance Committee of the SEM.

Rationale for degree and programme name

As to the rationale for degree and programme name, Narxoz offers the Bachelor degrees according to the Law of the Republic of Kazakhstan “On Education”²⁸. The names of the programmes and the respective degrees comply with the legal requirements.

As to the **Statistics and Data Science** programme, it has grown from the ‘Statistics’ programme that delivered specialists able to apply statistical methods to the tasks of enterprise-based or

²⁶ Narxoz Bachelor Thesis Diploma Project Assessment Guide

²⁷ Regulations on preparation and performance of thesis projects

²⁸ See also the State Programme for the Development of Education and Science of the Republic of Kazakhstan “High Quality Education: Educated Nation” for 2021-2025 (approved by the Decree of the Government #726 on 12 October 2021); Resolution of the Government of the Republic of Kazakhstan #28916 dated 27 July 2022 “State Mandatory Standards for Higher and Postgraduate Education”; and other MSHE regulatory legal acts.

population-wide forecasting and decision making. The era of data proliferation necessitated redevelopment of the programme curriculum with data science, business intelligence and programming components. This enrichment carried out within the latest programme redesign justifies the programme's current title – Statistics and Data Science. Likewise, the title of the degree awarded to the graduates of this programme is Bachelor of Science.

The **Applied Mathematics in Digital Economics** programme opened in 2020 with the aim of training specialists able to apply the mathematical modelling apparatus to designing and programming the solutions to the problems of organisations in the newly developing digital segments of the national economy as well as those existing segments that are undergoing a digital transformation. Hence the title of the programme - Applied Mathematics in Digital Economics. Corresponding to this, the title of the degree awarded to the graduates of this programme is Bachelor of Science.

A graduate of the **IT in Business** programme is awarded an academic degree of Bachelor of Business Administration in IT in Business, which is confirmed by a diploma and diploma supplement of own design issued by Narxoz University.

Integration of theory and practice

The integration of theory and practice in the implementation of the **Statistics and Data Science** as well as of the **Applied Mathematics in Digital Economics** programmes is achieved through several means:

- Most lessons are held in computer laboratories ensuring hands-on study of software tools and computational methods. The lessons of core and major courses are typically conducted in a combined “lecture + practical or lab” format, i.e. no specific sessions are set aside as strictly theoretical ‘large-hall’ lectures, rather every class is a combination of theory and practice.
- In the “Mathematical Analysis 1” and “Mathematical Analysis 2” courses, the weekly four contact hours are usually scheduled as two 100-minute lessons on two different days. In each lesson approximately one third of a lesson is devoted to interactive explanation of new topic, new material; the second third of the lesson – to working jointly with the students on solving three to four problems on the new topic; and the rest of the lesson – to guiding students through their independent work of solving three to five problems of different levels of difficulty.
- The School invites students to get exposure to practical competencies through guest lectures by prominent representatives of the business community. Some of the guest lectures are for example on: “Automation in oil and gas industry” by KMG Automation; “Blockchain, DeFi, Bitcoin, Ethereum and NFT – new reality of economic and social relationships” by Paxaro.com; “Machine learning applications” by a Machine Learning Engineer from Meta Ads Ranking, and “Leadership lifehacks” by the CEO of Beeline Kazakhstan.
- The students of both programmes must undergo three internships. The recommended period for passing these is in the summer between years three and four (Educational and Industrial internships), and in the spring semester of year four (Pre-diploma internship). An Educational internship (5 ECTS credits) intends for the student to acquire primary

professional competencies, consolidating and deepening theoretical knowledge gained in the learning process. An Industrial internship (2 ECTS credits) is to confirm the achieved learning outcomes and acquired competencies during professional activities directly at enterprises or organisations. The pre-diploma internship (8 ECTS credits) is generally aimed to aid the preparation of the thesis project through students' in-depth study of the activities of an enterprise / institution, collecting relevant information and practical material, as well as trying out the applied solutions to the problem under study in their thesis project.

To ensure the integration of theory and practice, the **IT in Business programme** includes several activities:

- attracting professionally qualified teaching staff (PQ);
- using case studies;
- developing courses covering key topics of various internationally recognised professional certification programmes (ACCA, CIMA, CIA, CMA, Microsoft, CompTIA, CISA, CISM, PMP and CDP);
- organising the Business Orientation Week and the Internship (Big Four companies (PwC, EY, Deloitte, KPMG) days in Narxoz University, Beeline BootCamp, Narxoz Hackathon);
- inviting guest lecturers within the Narxoz Leadership Development Programme.

Case-studies are widely integrated in teaching practice in the programme. These include international integrative cases from sources such as CIMA, NACRA, Harvard Business Review, CIA, Journal of Cases on Information Technology, and mini case studies based in the Kazakhstan business environment.

The practice-oriented nature of the programme will be ensured through the involvement of leading partners-employers, who participate in the learning process, conduct master classes, guest lectures and organise internships. Integration with business is also expected through a project workshop, where partners present specific projects or "live cases" of their companies (a group consulting project).

Also IT in Business includes internships that are implemented on the basis of developed methodological guidelines. The SEM cooperates in particular with the following industry partners: Big Four companies, Beeline, ForteBank, Prime Source, Halyk Bank, Freedom Finance, DAR.

In this context, **for all study programmes** the Department for Career Development and Alumni Relations (CDAR) offers internship opportunities with more than 50 organisations/institutions, including national, private and public companies of Kazakhstan.

Interdisciplinary Thinking

The General Education as part of the Bachelor programmes, usually taking place in the first two years, aims to encourage the development of interdisciplinary thinking and skills of inquiry outside of their major fields. Students can attend courses such as on history, philosophy, sociology, political science, psychology and informational-communicational technologies.

Ethical aspects

As for all study programmes, ethics is an integral part of the curricula, which is intended to provide a moral foundation for graduates' future careers. The Code of Conduct of Narxoz University establishes the standards of conduct necessary for the life and work of the University in all areas of its activities. It applies to all members of the community, and they must act responsibly and ethically in accordance with the principles of integrity, objectivity, accountability, openness, honesty and leadership and consideration for others. Ethical behaviour means behaving consistently in accordance with values and honestly, transparently and encouraging others to do the same. The commitment to inculcate these shared values in the community are fundamental to successful delivery of the University Strategy.

Academic integrity issues such as honesty, plagiarism²⁹, and examination rules are embedded in the Narxoz Academic Integrity Policy, Regulations on Conducting Intermediate Examination³⁰ and Regulations on Conducting the Final Examination³¹. Additionally, courses like Organisational Behaviours, Introduction to Economics, Leadership and Innovation, Career Development, Information Technology and Ethics (in IT in Business) integrate ethical thinking into decision-making frameworks.

Methods of scientific practice

The curricula of both the **Statistics and Data Science programme** and the **Applied Mathematics in Digital Economics** programmes introduce students to fundamental research techniques and approaches by instilling in them a culture of general proof methods (via Mathematics Core courses), acquainting them with quantitative research methods (Statistics, Applied Statistics) and ensuring their systematic use in group research projects, which feature as the key examination format in a number of major courses.

Awareness of the basic methods of qualitative research is imparted via socio-political courses of the General Education module (Political Science, Sociology, Psychology). In addition, the role of research as a force driving innovations is one of the themes discussed throughout the Leadership and Innovation course. In year four, students consolidate the various research instruments and methods and apply them to their graduation project or to the tasks on comprehensive examinations.

In the **IT in Business** programme, the curriculum includes courses which develop methodological competences and research skills, including ICT, Academic Research, Quantitative Methods 1, Financial Modelling. Elective Topics offered within the programme also build these skill sets. These courses equip students with the knowledge and skills necessary to carry out research, such as research methodology practice, quantitative analysis skills and modelling using specialised software (such as MS Excel, Bloomberg (BMC), Power BI). In the Academic Writing course, the Bachelor students also achieve scientific research skills.

At the beginning of the eighth semester of study, the programme manager will organise a Research Orientation Week for all students to introduce them to their academic supervisors, present the

²⁹ See Narxoz Anti-Plagiarism Policy.

³⁰ Narxoz University Examination Regulations (Intermediate Examination)

³¹ Narxoz University Examination Regulations (Final Examination)

Diploma Project, and provide initial advice on data collection. The Bachelor Diploma Project requires the use of research and analytical skills and evaluates students' ability to employ these skills. Students meet regularly with their academic supervisors to discuss issues related to their thesis project. Students study how to use and collect data from EBSCO, WoS, Scopus, Emerald, JSTOR and other databases and how to write a literature review. The Diploma Project Guidance³² presents directions on how to develop research and write the thesis.

Examination and final thesis

Assessments within the **SDS and AMDE programmes** consist of two mid-term and one end-term assessments. Grading of the first mid-term 'Exam 1' which covers the first part of the semester is due during one week at the middle of semester (usually, week 8 out of 15); and the grading of the second mid-term 'Exam 2' that covers the second part of the semester is due during the last week of semester. In each Exam 1 and 2 a student may earn up to 100 points. The number, types and point-value of tasks that comprise these 100 points is determined by faculty members teaching the course; the usual task types include written work, computer-based practical task, completion and defence of a project, or mixed assignment (written or practical task with subsequent defence). Student participation in the end-term 'Examination' is subject to the condition that the arithmetic mean of their Exam 1 and 2 grades overcomes a 50-points threshold (out of 100). Course Examinations are typically 2 hours long and are scheduled within a 2-3-week-long end-of-semester session. The grading of a course examination is due within 48 hours after completion. The format of a course examination is determined by faculty members teaching the course. Course syllabi and course pages in the University LMS inform students about the deadlines and point-weight of mid-term assessments, as well as about the format and evaluation criteria of the end-term examination.

In the **IT in Business programme** Mid-term assessment of students is carried out in the form of exams, defense of term papers (projects) and reports on professional practice with mandatory assessment and is defined as an examination session.

A final examination is a required part of each course taught at SEM and comprises 40 % of the course assessment. The examination period usually starts after the 15th week of study and is organised in accordance with Regulations on Conducting Intermediate Examination of Bachelor and Master Students³³ and Regulations on Conducting Final Examination of Students.³⁴ The examination schedule is prepared two weeks before the beginning of the examination period. One month before examinations the SEM QAC reviews examination instruments. All examinations are invigilated by independent proctors³⁵ who are assigned from other schools. According to Narxoz University³⁶, about 10 % of the students are normally failing. During the examination period under the SEM QAC an appeal committee works, which consists of at least three faculty members in the relevant courses.

³² Bachelor Thesis Diploma Project Assessment Guide

³³ Regulations on Conducting Intermediate Examination of Bachelor and Master students

³⁴ Regulation on Conducting Final Examination of Students

³⁵ Regulations for Offline Exams with Proctoring

³⁶ The information was given during the on-site visit.

The syllabi of the courses reflect the criteria for assessing the knowledge of students, including information on the interim and final exams³⁷.

The final exam of the graduating classes of SDS and AMDE programmes is conducted at the end of year four. The final exam is organised in either of the two formats:

- defence of group-based thesis project or
- passing of two comprehensive examinations.

Only the students who have successfully completed all other components of their programme (i.e. received all grades and resolved all retakes or academic differences) are allowed to take part in the final exam. The formats of final exams are determined in September of year four. The default option is the passing of two comprehensive examinations. Students with stronger academic performance may opt for a team-based Thesis project. “A Thesis project is a student’s graduation work, which is an independent solution of applied problems corresponding to the profile of the educational programme, carried out using project approaches and (or) in the form of preparing business projects, models, as well as projects of a creative nature and other projects”³⁸.

The two comprehensive examinations are scheduled with one week in between. Each comprehensive examination consists of questions from core and major courses³⁹ approved annually by the decision of the School QAC. To reflect the programme content one of the comprehensive examinations draws on student’s command of theory and its applications (paper-based examination), while the other is on student’s command of analytical and computation instruments and their use (computer-based examination). In both examinations, the students apply their knowledge and skills to problems and defend their solutions in front of the examination board.

Those opting for the group-based thesis project work as a team with the support of faculty supervisor. They choose project topic and defend a proposal within the Autumn semester. Between then and April they distribute responsibilities and work both individually and collectively on various parts of the project and of the thesis text. This teamwork is carried out under the guidance of the supervisor – students regularly meet and report on their progress, taking time to reflect on each other’s input within the project and receive feedback from teammates and supervisor. At the end of the spring semester, the teams undergo two pre-defence sessions, where they present their work to a faculty committee and gain external perspective on what and how to improve. They have about one month between the pre-defence and the actual defence of the project. During this period, the team finetunes their project and prepares the thesis for plagiarism check with the use of Turnitin service plugged into the University LMS⁴⁰. Once this is completed and the team has submitted all required documents, the defence procedure is carried out as per the schedule approved by the University. The examination board considers the team presentation and assesses it according to criteria set in the Bachelor Thesis/Diploma Project Assessment Guide.

³⁷ See Narxoz University Regulations on Conducting Intermediate Examinations of Bachelor and Master students, as of August 2022.

³⁸ See Narxoz University Regulations on Conducting the Final Examination of Students, as of August 2022.

³⁹ See „Academic Policy” as of August 2022.

⁴⁰ Learning management System.

The two-option format of final attestation was first introduced and implemented by the School of Digital Technologies in academic year 2022-2023, following the changes to state regulations, which earlier required all graduating students to prepare and defend a diploma work/project and now allow the universities themselves to decide upon the formats of final examinations. During the on-site visit the panel of experts expressed their view that students of SDS and AMDE should be obliged to write a scientific paper which ensures their ability to do scientific work, during their studies or as part of the final examination. The two formats of final examinations would not measure up to this standard.

When commenting on the draft of this report, SDT informed the panel that after the on-site visit the School decided to identify preparation and defense of diploma work/project as the compulsory format of the final attestation for all students at the School's Bachelor programmes. The corresponding decision of the responsible School Quality Assurance Committee (QAC) is applicable for all graduating students starting from academic year 2023-2024. This change as well as the introduction of new courses such as "Research Methods" and "Ethical principles and writing in academic and professional practice" was reflected in the curricula of all Bachelor programmes for the intake of 2023, including the SDS and AMDE programmes. The decision of School QAC on introducing the updated curricula for the intake of 2023 was attached.

Moreover, SDT informed the panel that these students will be introduced to the basics of academic writing in year 1 (through "Ethical principles and writing in academic and professional practice" course). In year 3 students will cover a comprehensive course on scientific research methods (through "Research methods" course) resulting in a written examination that requires them to prepare a scientific paper. And throughout year 4 students will select the topic for the group research project together with their scientific supervisor, study scholarly literature, draw up and defend a proposal that specifies the scientific and technological grounds of the project, implement the project, and then write a full-fledged diploma work to further undergo a plagiarism check (through Turnitin). After the written diploma papers are ready, they are reviewed by an internal scientific supervisor and external reviewer, whose conclusions are taken into account during a public viva where the students defend their project in front of the School Commission.

In the IT in Business programme the Diploma / Thesis Project Guidance⁴¹ is developed following University rules and procedures. The final exam can consist of a research or industrial profile project. The SEM QAC adopted additional Diploma Project evaluation criteria⁴², which are presented to students during the Research Orientation Week.

Any form of examination is conducted on the Canvas platform⁴³. The results are recorded by the instructor and after 48 hours are automatically transferred to the examination sheet in Banner⁴⁴ system. The form of the examination is determined by the faculty, but preference is given to written examinations.

⁴¹ Regulations on preparation and performance of thesis projects

⁴² Bachelor Thesis Diploma Project Assessment Guide

⁴³ Narxoz University uses Canvas as a web-based Learning Management System (LMS) which supports all educational activities and provides access to all classroom materials for students and teachers.

⁴⁴ See above chapter 2.

Appraisal:

In the view of the panel members, the curriculum adequately reflects the qualification objectives of each of the three study programmes. The contents of the courses are well-balanced, logically connected and oriented towards the intended learning outcomes. The areas of specialisation (compulsory electives) or optional electives enable students to acquire additional competences and skills.

The panel notes that the programme **IT in Business** applies theoretical and analytical materials obtained through modern methods of data processing necessary for the implementation of professional functions in the areas of finance, management, marketing, future forecasting and data analytics.⁴⁵ Training students in the applications of IT in combination with relevant functions of business the courses consistently reflect the strategic orientation of this study programme. This also clearly meets the requirements of the job market. Additional electives enhance the graduates' employability.

Similarly, the programmes **Statistics and Data Science** as well as **Applied Mathematics in Digital Economics** are not only oriented at technically applying statistics and mathematics but are also aiming at training students to “develop and implement systems / solutions for optimisation of business processes using appropriate IT tools, statistical methods and mathematical apparatus”⁴⁶. This means that in their professional activities students will have to know about the basics of business. The panel takes the view that this field should be intensified in both programmes. It therefore recommends offering a compact course in the sense of “Business Basics” and in this way further strengthening the training of complementary competencies and skills. As for the **Statistics and Data Science**, the panel recommends including more data science works with models of management cases.

The panel takes the view that in each programme based on the legal regulations of the Republic of Kazakhstan the degree and programme names correspond to the contents of the curriculum and the programme objectives. As students graduating from one of the two programmes **SDS and AMDE** achieve a “Bachelor of Science” degree the panel rates this as an adequate degree with scientific requirements. On the other hand, students graduating from **IT in Business** achieve a Bachelor of Business Administration degree which means that the programme is more focused on practical approaches and seems to be adequate.

The integration of theory and practice of teaching is ensured. Theoretical questions are, where possible, explained by means of practical examples. Also, the obligatory internships help students gain practical experience and to apply the theoretical knowledge.

There is evidence that the programmes qualify for interdisciplinary thinking, also by means of the General Education courses. However, with reference to the recommendation in chapter 3.1.1, the panel takes the view that in the programmes **Statistics and Data Science** as well as **Applied Mathematics in Digital Economics** the training of Business Basics should be further intensified. This will at the same time strengthen the interdisciplinarity for these programmes.

⁴⁵ See above chapter 1.1.

⁴⁶ See above chapter 1.1

Ethical implications (for example those of economical or juridical ways of thinking and acting) are appropriately communicated.

All exams, as they are defined for the courses, are suited in format and content to ascertain the intended learning outcomes. The requirements are in accordance with the desired qualification level. The course exams are characterised by a wide variety of test formats. The final examinations are evaluated based on previously published and coherently applied criteria, rules, and procedures. The students prove, especially in their final exam, the achievement of the study programme's qualification objectives.

The panel notes that by now in all three programmes students finalise their studies with a project or (for SDS and AMDE) alternatively with two comprehensive examinations, which means without a scientific paper. However, the panel has the view that proving scientific qualifications in the two Bachelor of Science programmes requires to write a scientific paper, in particular but not necessarily as part of the final examination. Therefore, the panel welcomes that the QAC of SDT has changed the format of final examinations. Starting in the academic year 2023-2024, students at this School will be required to write a scientific paper as a Diploma work.

In this context the panel of experts also welcomes that the curricula of SDS and AMDE will include courses on academic writing and research methods which further supports students to do scientific work on the required level.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.1	Contents					
3.1.1*	Logic and conceptual coherence (Asterisk Criterion)		X (IT in Business)	X ⁴⁷		
3.1.2*	Rationale for degree and programme name (Asterisk Criterion)			X		
3.1.3*	Integration of theory and practice (Asterisk Criterion)		X (IT in Business)	X ⁴⁸		
3.1.4	Interdisciplinary thinking			X		
3.1.5	Ethical aspects			X		
3.1.6*	Methods and scientific practice (Asterisk Criterion)			X		
3.1.7*	Examination and final thesis (Asterisk Criterion)			X		

⁴⁷ "Statistics and Data Science" and "Applied Mathematics in Digital Economics".

⁴⁸ "Statistics and Data Science" and "Applied Mathematics in Digital Economics".

3.2 Structure

Projected study time	Bachelor programmes: 4 years
Number of ECTS credits	Bachelor programmes: 240 ECTS credits
Workload per ECTS credit	27 hours
Number of courses	45 courses (because of elective courses the numbers of each programme can be different)
Time required for processing the final project and awarded credits	324 hours; 12 ECTS credits
Number of contact hours	Statistics and Data Science: 1,965 hours, Applied Mathematics in Digital Economics: 1,965 hours, IT in Business: 1,998 hours

Narxoz uses the ECTS credit system which includes contact hours as well as the self-study time per course. As the Republic of Kazakhstan is a member of the European Bologna Process the universities are required to calculate the study load in ECTS credits.

The programmes are divided into seven categories of courses: General Education (mandatory at state level), School Required, Business Core (forming core business competences), Major (develops professional competences) and Minor (forming additional competences for both professional and personal development of a student), Internship, final examination.

For the entire period of study equal to eight semesters, students must collect not less than 240 ECTS credits. The student, in determining the individual trajectory of study within the University component and (or) the component of choice, selects courses of the basic programme (Major) and (or) the additional programme (Minor).

The programme contains 240 ECTS credits and includes compulsory general education, school required, and business core required courses, as well as elective courses and majors. General Education courses are compulsory according to the requirements for all first-year students studying.

“Statistics and Data Science” and “Applied Mathematics in Digital Economics” programmes

Category of courses	ECTS credits
General Education Foundation	43
School Required	18
Mathematics Core Required	44
Programming Core Required	17
Major Required	31
Electives/Minor	60
Internship	15
Final Exam	12
TOTAL	240

IT in Business programme

Category of courses	ECTS credits
General Education	43
School Required	29
Business Core Required	65
Major Required	65
Electives/Minor	20
Internship	10
Diploma project/case studies	8
TOTAL	240

A vital element of the programme content is the opportunity for the student to build a flexible individual learning plan, which allows them to change the order of studied courses (subject to pre-requisites and availability) and to choose electives, forming specialised concentrations (tracks) and/or obtaining additional competencies through the choice of Minor courses.

Narxoz has a syllabus for every course which serves as information for students and for faculty. It provides all necessary information and detailed descriptions such as the course title, credit hours, course content, information about the instructor, assessment description including methods of assessments, semester schedule/plan, the prerequisites for the course (if applicable), intended learning outcomes, teaching and learning methods. Syllabi are approved by the SEM QAC one month before the beginning of each semester.

For all programmes, the University issues a Diploma Supplement according to EHEA standards and in English.

The process of conducting midterm and final assessments of courses as well as final examinations of the programme in terms of procedure and criteria is regulated by the relevant rules in the Narxoz "Academic Policy"⁴⁹. The form and procedure of the course examinations are determined by the syllabus of the discipline.

The assessment of students' achievement of the course learning outcomes (knowledge, abilities, skills and competencies) is carried out in accordance with the University grading system which is required by the MSHE.

Narxoz University Grading System

Letter grading system	Numeric equivalent	Points (%- percentage)	Traditional grading system
A	4,0	95-100	Excellent
A-	3,67	90-94	

⁴⁹ See there, chapter 9, p. 30 ff.; see also: Narxoz University Regulations on Conducting Intermediate Examinations of Bachelor and Master students, as of August 2022; Regulations on Conducting the Final Examination of Students, as of August 2022.

B+	3,33	85-89	Good
B	3,0	80-84	
B-	2,67	75-79	
C+	2,33	70-74	
C	2,0	65-69	Satisfactory
C-	1,67	60-64	
D+	1,33	55-59	
D-	1,0	50-54	
FX	0,5	25-49	Unsatisfactory
F	0	0-24	

Academic achievements are measured on a 100-point scale corresponding to the internationally accepted letter system with a numeric equivalent (positive marks, in descending order, from “A” to “D”, and “unsatisfactory” – “FX”, “F”,).

The schedule of classes and examinations can be viewed in the Canvas LMS and the Narxoz Mobile application. The programmes are structured in such a way that allows students to study at another university for a certain period⁵⁰. The Narxoz regulation of recognition⁵¹ includes the respective procedure analogous to the Lisbon Recognition Convention. The regulation also includes the recognition of courses such as those offered by ACCA and CIMA or by Coursera (up to 12 ECTS credits) and of informal education.

The academic year consists of academic semesters, the period of interim certification, internships and vacations. In the final year, the academic year includes a period of final exam. The student workload is assessed based on MSHE requirements. ECTS credits are allocated for diploma projects⁵² and internships. The total length of the academic year must be at least 36 weeks (Academic Calendar). Examinations are assigned at the end of each semester. For learning support during the semester, the Canvas LMS is used, which allows for online assessment of students' knowledge.

The University has two mechanisms to assess the appropriateness of students' workload: the Faculty Teaching Evaluation Survey⁵³ (FTES) and Course Management Form.

The FTES of students is conducted electronically twice a year by the Accreditation Department of the University in English, Kazakh and Russian languages. It aims to get a student perspective on the quality of educational services, identify the degree of student satisfaction with the quality of courses (quality of teaching lectures, seminars and laboratory classes, the quality of tasks and time for their implementation) and get students' suggestions in this area.

The Course management form is completed by each instructor at the end of each semester. To understand appropriateness of study workload the form contains two questions:

- To which percentage the instructor was able to cover the intended content?

⁵⁰ Regulation on the procedure for recognition of learning outcomes of formal and non-formal education

⁵¹ “Regulation on the procedure for recognition of learning outcomes of formal and non-formal education”, as of August 2022,

⁵² Based on the Regulations on preparation and performance of thesis projects

⁵³ There is a Questionnaire Faculty Teaching Evaluation Survey

- Do you think that ECTS credits were distributed effectively in terms of achieving learning outcomes?

The results of FTES and Course Management Form are discussed at School level, analysed by the Programme Manager and actions taken when appropriate. Narxoz University presented a Report on the FTES (Fall 2022-2023) to the panel.

To demonstrate to students that their feedback is valuable, the School Quality Assurance Committees provide a so-called "Progress report" which outlines actions to implement their recommendations to really improve their learning experience. These reports are then submitted to the Student Senate for discussion with the student community.

Based on the Narxoz Regulations for Monitoring the Quality of Teaching a Monitoring Working Group on Teaching and Instruction attends other faculty members' classes according to an approved schedule and fills out a Lesson Assessment Form based on the results of the visit (on paper and in the Google Forms sheet) and participates in the moderation of educational, methodological and assessment materials under the guidance of School Directors and EP Heads. The EP Head informs the faculty about the monitoring results.

Narxoz University and the School do not discriminate among students regardless of their nationality, religion, gender, disability. Statistical data on the composition of students is collected and analysed by the Office of the Registrar. The principle of gender equality applies to students. Equal access to educational and research activities is provided. In all four study programmes on average female students are in the majority.

Based on the "Policy of Equal Access to Education for Students with Special Needs"⁵⁴ the University adheres to the principle of equal access for students, including students with special needs, to educational services and infrastructure. The University is committed to ensuring that the needs of students with special needs are met for access to buildings and campus, access to information and educational resources, while maintaining online accessibility to off-campus resources. An applicant with special needs can be advised also remotely through the virtual admission office by following the link on the university website. The University has a special advisor for students with disabilities, to assist students to plan their studies. In addition, the University employs a full-time psychologist.

Appraisal:

All three programmes consist of courses that are categorised in groups. ECTS credits are assigned per course on the basis of the necessary student workload. The programme structure supports a smooth implementation of the curriculum and helps students to reach the defined learning outcomes. Practical components, in particular internships are designed and integrated in such a way that credits can be acquired. The syllabi provide detailed descriptions of intended learning outcomes and the information defined in the ECTS Users' Guide such as the Diploma Supplement.

⁵⁴ As of May 2022.

There are legally binding study and exam regulations which contain all necessary rules and procedures and take into account, where applicable, national requirements. The study programmes are designed so that students can study for a certain time at other HEIs or do internships without any extension of their overall study time. The recognition of degrees and periods of study at other HEIs is regulated analogous to the Lisbon Recognition Convention; the recognition of periods of practical work – insofar intended – is also clearly defined. The final grade is supplied with an ECTS grading table.

The feasibility of the study programme’s workload is ensured by a suitable curriculum design, by a plausible calculation of workload, by an adequate number and frequency of examinations, by appropriate support services as well as academic and general student counselling.

When reviewing the workload, the HEI also takes into account evaluation findings, including student feedback and the programme’s success rate.

Narxoz University ensures gender equality and non-discrimination. Students with disabilities are provided with affirmative actions concerning time and formal standards/requirements throughout the programme and examinations. Students in special circumstances, such as single parents, foreign students, students with a migration background and/or from so-called non-academic backgrounds, are particularly assisted. The measures taken are periodically reviewed and adapted in accordance with the obtained results.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.2	Structure					
3.2.1*	Modular structure of the study programme (Asterisk Criterion)			X		
3.2.2*	Study and exam regulations (Asterisk Criterion)			X		
3.2.3*	Feasibility of study workload (Asterisk Criterion)			X		
3.2.4	Equality of opportunity		X			

3.3 Didactical concept

The didactic concepts of the programmes are shaped by a commitment to academic freedom and faculty management. The faculty's choice of appropriate teaching and learning methodology is outlined in the syllabus. Various teaching methods are employed, such as: problem-solving, presentations, discussions, case-study, group work, business and role-playing games, projects, critical thinking and brainstorming. The use of such methods aims at stimulating students' motivation to find and process information independently, as well as develop presentations skills. Materials for each course are uploaded to the Canvas LMS by the faculty members. Students have full access. It is the faculty members’ responsibility to ensure consistency of materials with the programme objectives and learning outcomes that are presented in the syllabus. This is systematically monitored by the departments and the School QAC.

Narxoz University follows a student-centred learning concept that also implies students' collaboration, virtual simulation games as well as interactive lecture-dialogue. Also, considering the practice-oriented nature of the SDS and AMDE programmes most classes are held in a combined "lecture + practical or lab" format using real work problems that allows students to immediately test out in practice the material learnt at the lesson.

Study materials are kept up to date. One month before the beginning of each semester, the School QAC reviews and approves all course syllabi⁵⁵. Examination materials are approved one month before the exam. According to University Academic Policy, instructors are required to upload all course materials (syllabus, lectures' presentations/notes, textbook or book (link to the library access), case-studies, assignments, tests etc.) to the Canvas LMS. The literature must include materials published in the last five years. The programme manager has 'read only' access to Canvas to assure the relevance of materials. The School QAC monitors compliance with programme requirements.

Faculty members are encouraged to integrate guest speakers into the teaching process. Guest speakers represent the local or international business community and, according to the students' feedback: The SEM invites Guest Lecturers⁵⁶ within the framework of Leadership Development Programme (LDP) launched in 2022-2023. The list of guest lecturers that has been presented to the panel includes company representatives, public authorities, and international professors from areas related to the students' fields of study.

Guest Lecturers' Position	Company
Chairman of the Board of Directors	ForteBank
Head of Assurance for Central Asia and Caucasus	EY
Evaluation partner	Bakertilly Kazakhstan
Senior Director Europe Operations	Institute of Management Accountants
Director of the HR Department	Home Credit Bank
Chairman of the Management Board	Home Credit Bank
Founder and Director	Thousand IT company
Manager of the Consulting Department	EY
Director of the Operations (Cluster Ukraine and CIS)	Takeda Pharmaceutical Company
Audit Services Partner	EY
Head of MarCom	Beeline Kazakhstan
Head of the Media Department inside MarCom	Beeline Kazakhstan
Buying director	Beeline Kazakhstan
CEO	Admixer Central Asia
Head the HR Commission	Central Asian Advertising Association
Head of the Compliance Service	Samruk-Energo
CEO	Beeline Kazakhstan

⁵⁵ See above chapter 3.2.

⁵⁶ <https://www.instagram.com/narxoz.sem/?hl=ru> (last access October 20, 2023).

CEO	InDrive
General Director	Russell Bedford A+ Partners
Chief Compliance Officer	Jusan Bank
Owner	BAROE Marketing
Head of EMEA Operations	CX Pilots
Professor	Michigan State University
Academic Director for the Master of Science in Finance	Nazarbayev University
Professor	Mykolas Romeris University
Professor	Poznan University of Economics

The role of extra-curricular activities aims to expand the students' understanding of their subject area, of the specialised tracks that they may prefer, of the cognate fields where they may wish to apply the methods and tools they learn, as well as future career opportunities.

The following list shows some of the guest lectures of relevance to the SDS and AMDE programmes that the School of Digital Technology held since the lifting of the Covid-19 restrictions in October 2021.

Guest lectures, position and topics

- Co-founder Hybrain Academy – Artificial intelligence and ChatGPT for education business development
- CEO Beeline Kazakhstan – Leadership lifehacks
- Machine Learning Engineer from Meta Ads Ranking – Machine Learning Applications
- CEO of InDrive company – From Yakutsk to the Silicon Valley
- Open House Day of the Almaty City Department of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan with
 - Head of the Department - Opening address
 - Head of the Department of Industrial and Environmental Statistics – Main avenues in the work of statistical bodies, how statistical data are formed
 - Head of the Department of Trade Statistics – Methodology of indicator formation for the statistics of domestic and foreign trade
 - Head of the Department of Labor and Standard of Living Statistics – Key indicators on labour statistics and standard of living
 - Head of the Department of Work with Users of Statistical Information and Respondents – On increasing the popular use of the website of statistical bodies (stat.gov.kz)
- Founder of the chain of women's shoes Josiny in Kazakhstan
- Founder of Checkmat Kazakhstan – sports school of jiu jitsu and grappling for children and adults
- Founder of business community “Syndicate”
- Representative from Huawei Kazakhstan – guest lecture about the annual ICT Competition
- Chief IT Security Specialist of Air Astana – Fundamentals of Cybersecurity
- Representative from Paxaro.com index investment product - Blockchain, DeFi, Bitcoin, Ethereum and NFT – new reality of economic and social relations

- Chairman of the Management Board of KMG Automation – Automation of the oil and gas industry

In addition to these, the other Schools and units of the University regularly organise various guest lectures open to all students of Narxoz and covering a wide range of topics of interest to future specialists.

The introduction of the lecturer-tutor position is planned and discussed at the university level.

Appraisal:

The didactical concept of the study programmes is described, plausible, and oriented towards the programme objectives. It allows for the application of different teaching and learning methods, such as, for instance, case studies or practical projects. Narxoz University follows the concept of student-centered learning. Thus, students are encouraged to take an active role in creating the learning process.

The accompanying course materials are oriented towards the intended learning outcomes and correspond to the required qualification level. They are up to date and digitally accessible for the students. They are user-friendly and encourage students to engage in further independent studies.

Invited guest lecturers with their special experience either from professional practice or scientific work, but also, for example, from culture and politics contribute to the students' qualification process.

Lecturing tutors can support the students in the learning process and help them develop competences and skills. Therefore, the panel supports Narxoz's idea to introduce lecturing tutors.

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.3 Didactical concept					
3.3.1* Logic and plausibility of the didactical concept (Asterisk Criterion)			X		
3.3.2* Course materials (Asterisk Criterion)			X		
3.3.3 Guest lecturers			X		
3.3.4 Lecturing tutors				X	

3.4 International outlook

Based on its new strategy and on its main principles in academic activities⁵⁷, Narxoz University aims to expand partnership relations with universities in other countries, providing students and teachers in particular with the opportunity to study and do internships abroad, and to integrate

⁵⁷ See Narxoz "Academic Policy", p. 5.

foreign experience into the educational process of the university. Narxoz strives to develop internal and external academic mobility and the processes of internationalisation of education.

That is why all programmes of the School, including the **SDS and AMDE programme**, have undergone a redesign, streamlining their curricula with authoritative international curricular guides. As such, the study plans of Statistics and Data Science as well as of Applied Mathematics in Digital Economics programmes have been harmonised with the recommendations of the American Statistical Association. In support of this the School of Digital Technology has been encouraging faculty members to identify up-to-date relevant literature in English that covers necessary fields and has been negotiating the purchase of faculty-requested materials with the Library.

The redesigned curricula contain core required courses that introduce students to the globally uniform language of mathematics and equally international Python programming language. The curricula also contain the SCES⁵⁸-required general education component that is designed to heighten student preparedness to operate in an intercultural environment by exposing them to different ways of thinking and cultural studies. Along with this, the use of the English language in the programmes adds to the international competencies of the future graduates and their employability in general.

Together with the IDCP department⁵⁹, the School encourages faculty members and students to take advantage of the many international partnerships of the University and partake in various academic mobility programmes.

As for the **IT in Business programme**, with the aim to deliver globally oriented education, the SEM developed its Internationalisation Roadmap⁶⁰ that emphasises the following:

- Doing international accreditations,
- Aligning programme content with international knowledge,
- Diversification of faculty and student body.

Also, the content of this programme is designed in accordance with internationally recognised curricula and professional standards (ACCA, CIMA, CMA, Microsoft, CompTIA, CISA, CISM, PMP and CDP). The faculty of the programme is expected to play a full role in academic mobility and other internationalisation efforts as part of the University development strategy.

The Bloomberg Business Market Concepts (BMC) certificate course also contributes to the curriculum.

As to the internationality of the students' body, the numbers of foreign students are still zero (IT in Business has just started, the SDS and AMDE programmes started in September 2022).

To promote the internationalisation of the student body, the programmes are increasing the number and quality of the courses offered in English. To fulfill the University's strategic objectives, the

⁵⁸ State Compulsory Educational Standards of the Republic of Kazakhstan

⁵⁹ Department of International Development, Career and Partnerships of Narxoz University.

⁶⁰ The Roadmap was presented to the panel during the on-site visit.

programmes aim to substantially increase the number of international students by 2030 (at University level up to 600 students).

The relatively new School of Digital Technologies which is responsible for the SDS programme and the AMDE programme has not yet attracted international faculty. The School is working on increasing the international orientation of the current teaching staff by encouraging academic mobility. Faculty members took part and will take part in the Erasmus+ academic mobility programme and visited University of West Attica (Greece) and Amsterdam University of Applied Sciences (Netherlands). Another faculty member won a Bolashak scholarship⁶¹ for a scientific internship at Columbia University (USA).

Parallel with this, in 2023, the University has launched a “Teach for Narxoz” initiative that allows the School to search and attract international candidates for teaching positions in the SDS programme.

In contrast to this, in the SEM there are several faculty members with degrees from internationally recognised universities:

1	MA, The University of Ibadan, Nigeria
2	MA, Bowling Green State University, PhD in Finance, The University of Bonn
3	MA in Communications, Western Illinois University, USA BA in Journalism, University of Montana, USA
4	MSc Economics, University of Warwick, UK
5	MSc, CIMA, CIMA Associate Member, ICAI Institute of Cost Accountants of India
6	MSc in Program and Project Management, University of Warwick, UK
7	MA, Aston Business School, Birmingham, UK
8	LLM degree in International Business Law, University of Montreal, Canada
9	MSc Supply Chain and Logistics Management, WMG, University of Warwick, UK
10	MBA KIMEP University, M.Phil Maastricht School of Management, Netherlands
11	MBA in Finance, The Wharton School, USA PhD in Finance, University Of Illinois At Urbana-Champaign, USA
12	PhD candidate in Finance, Loughborough University, UK (graduating in summer 2023)
13	MSc in Computer Science, Queen Mary University of London, UK PhD Candidate in computer system and software, Suleyman Demirel University, Turkey

As far as the foreign language contents of the programmes are concerned, the **SDS and AMDE programmes** have so far been offered in Kazakh and Russian. Narxoz University plans to open an English language cohort from 2023 for each of them. The programme curricula list 20 ECTS credits as courses devoted to the development of the English language skills of the students – 10 ECTS

⁶¹ “Bolashaq” International Scholarship, established by the President of the Republic of Kazakhstan, is one of the most important strategic projects, initiated at the dawn of the independence of Kazakhstan, when leaders of a new format were needed, who would build up high-quality relations and communications with the international community (<https://bolashak.gov.kz/en/o-stipendii> (last access October 20, 2023)).

credits of English language (as mandated by the SCES) and 10 ECTS credits additionally as professionally-oriented English language. The study of English is organised according to a level-based approach. Taking a 5 ECTS credits course each semester, within a year students are expected to make a step upgrade of their level of English (for example, from A2 to B1).

As to the **IT in Business programme**, all courses are offered in English. Following MSHE requirements, Narxoz University allocates 10 ECTS credits to English language courses. Support resources to develop enhanced language skills, such as the Linguistics Centre and the University library are available for students. The programme has English speaking faculty capacity available. At the panel's request, during the on-site visit Narxoz presented a list showing the SEM faculty members' proficiency in English per study programmes. It made clear that SEM faculty teaching at **Bachelor programmes** have achieved different proficiency levels of English: 35 have an advanced level, three reached B2 and 1 has B1; 31 faculty members are currently studying English. Narxoz expects that in two years' time almost all faculty members will be able to teach in English.

Apart from the language, the faculty members are required to base all courses on internationally recognised textbooks and other materials.

Appraisal:

International contents are an integral part of the curricula. Students are thus prepared for the challenges in an international working environment. Through student mobility, practical examples, and General Education courses students are enabled to act in an intercultural environment.

The international composition of the faculty (teachers from different countries, teachers with international academic and professional experience) promotes the acquisition of international competences and skills. The measures taken are goal-oriented.

The panel welcomes that lectures and course materials in foreign languages predominate. Teaching in English language and international textbooks and material are clearly a key element of the study programme's profile. The panel underlines the importance to support faculty members in studying English as far as this is necessary.

As to the **IT in Business programme**, lectures and course materials in foreign languages predominate. Internationality is clearly a key element of the study programme's profile.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.4	Internationality					
3.4.1*	International contents and intercultural aspects (Asterisk Criterion)			X		
3.4.2	Internationality of the student body				X	
3.4.3	Internationality of faculty			X		
3.4.4	Foreign language contents		X (IT in Business)	X ⁶²		

3.5 Multidisciplinary competences and skills (Asterisk Criterion)

In the undergraduate programmes students are required to take courses such as sociology, political science, and culturology as part of general education to broaden their understanding of life, society and the world beyond the limits of business education and generally during the first two years of their studies. They are also asked to take programme foundation courses from other business disciplines such as information systems. Attending courses from different disciplinary background is aimed at improving students' competencies to deal with the complex business decisions.

Moreover, courses in the different programmes such as foreign languages, Sociology, Political Science, English (Professional), History of Kazakhstan, Cultural Studies, Leadership and Innovation, and Technical Entrepreneurship are aimed at acquiring skills and confidence to deal with a range of challenging and unexpected communication situations, focusing on a range of proven tools and techniques, how to remain calm under pressure, overcome common obstacles, and present effectively. Individual and group assignments, discussions and case-studies develop students to be effective communicators, especially when asked to respond in the moment in a clear, concise, and ethical manner.

There are several student organisations at Narxoz University that aim to develop multidisciplinary competencies and skills of students and to improve students as individuals and professionals in management life activities, such as: Debate club 'Dispute Narxoz,' Financial Club, Adrenaline, Medialab, Narxoz Pride and others.

Appraisal:

The students acquire communication and public-speaking skills as well as cooperation and conflict handling skills in accordance with the module/course descriptions. This is supported by means of suitable didactical and methodological measures.

The acquisition of further multidisciplinary competences, such as leadership skills and broad contextual knowledge, is ensured.

⁶²⁶² Study programmes "Statistics and Data Science" and Applied Mathematics in Digital Economics".

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.5*	Multidisciplinary competences and skills (Asterisk Criterion)			X		

3.6 Skills for employment / Employability (Asterisk Criterion)

Employability is central to the Narxoz University Strategy. To support this, the University has taken the following steps:

- The study programmes are designed to enable students acquire skills in demand by the future labour market.
- They are reviewed by external stakeholders and take into account their recommendations.
- University faculty hiring strategy allows for involving industry practitioners in teaching. This helps maintain the theory-practice relationship and thereby increases employability. The Narxoz Leadership Development Programme⁶³ can further contribute to this goal.
- Internships help students explore career options prior to graduation and develop communication, interpersonal and other critical skills in the job interview process.

The preparation of study programmes, the adjustment of the content of lectures, and practical material and assignments must be updated and improved continuously. This work is carried out with the direct participation of employers and stakeholders.

In addition to the individual programme itself being designed to enhance employability, the Career Development and Alumni Relations team (CDAR) work on internship provision through liaison with employers to create internship agreements for students in leading companies. According to Narxoz⁶⁴, given the crucial role of practical experience in enhancing employability the CDAR cooperates with more than 180 companies and organisations for this purpose. Before students begin their internship, training is provided to prepare them to maximise the benefit of the experience.

During the onsite visit the panel noted that Narxoz has included several practitioners into the faculty as adjunct professors. This enables the University to create a strong link between University and business which will be an advantage for students and graduates.

Appraisal:

The promotion of employability – for instance through the integration of theory and practice and through the promotion of multidisciplinary competences and skills – runs as a common thread of

⁶³ This Programme aims to achieve that business graduates should possess leadership skills, including the ability to inspire, motivate, and influence others. They should also be able to manage conflict and build consensus.

⁶⁴ See SER for Statistics and Data Science, p. 44.

the study programmes through all their courses. The panel welcomes that in addition the programmes enable the students to actively apply the acquired skills in new areas of work and to develop them further. The programmes are systematically oriented towards meeting anticipated requirements of the dynamic job market and make use of the results of graduate evaluations.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.6*	Skills for employment / Employability (Asterisk Criterion)		X			

4. Academic environment and framework conditions

4.1 Faculty

Narxoz University has elaborated the following overviews of the academic staff members working for the three study programmes at hand:

Faculty staff composition of the SDS programme, by teaching positions and grades⁶⁵

Teaching position	Grade 1	Grade 2	Grade 3	Total
Professor	-	1	1	2
Associate Professor	1	1	2	4
Assistant Professor	-	4	5	9
Senior Lecturer	4	7	3	14
Total				29

Faculty staff composition of the AMDE programme, by teaching positions and grades

Teaching position	Grade 1	Grade 2	Grade 3	Total
Professor	-	1	-	1
Associate Professor	1	1	2	4
Assistant Professor	-	4	4	8
Senior Lecturer	6	7	3	16
Total				29

The average length of the teaching experience of the involved teachers is 14 years for SDS and 13 years for AMDE. Most of these faculty members (above 72 %) are able to conduct classes in English. It should be noted that around one third of the above faculty members have relevant practical experience in the industry with an average of approximately 2.5 years.

As for the **IT in Business programme**, the table below summarises the structure of the faculty who will be available to teach in the IT in Business Programme as part of their workload:

Teaching position	Number of Faculty	% of Total
Professor	2	7%
Associate Professor	7	24%
Assistant Professor	1	3%
Adjunct Assistant Professor	2	7%
Senior Lecturer	17	59%
Total	29	100%

The IT in Business programme was approved in summer 2022 and is planned to start in September 2023. The programme will employ 16 full time, 13 part time faculty, eleven of them being academically qualified and with part-timers who have degrees from internationally recognised

⁶⁵ For Grading Policy of Narxoz University see below.

universities and/or are professionally qualified. 55 % of the total are full-time faculty and the remainder part-time.

The distribution of functional responsibilities of the faculty is determined by the internal regulatory documents of the Accreditation Department, University plans, orders of the President, job descriptions and regulations on structural units. Based on the standard qualification characteristics, the functional responsibilities of the faculty depend on their positions held. The faculty of all programmes must ensure the achievement of the intended learning outcomes and full compliance with academic standards.

The faculty recruitment process follows the requirements of Government regulations⁶⁶. The hiring process is carried out by a competition with qualification requirements. All candidates applying to fill any teaching staff positions in Narxoz must meet the qualification requirements for the positions of employees of higher educational institutions. The academic qualifications of the teachers selected to deliver classes are aligned with the academic requirements set by University and Schools and follow the programme objectives. For teaching at the undergraduate level, faculty members must have at least a Master's degree. A doctorate degree is required for teaching any graduate programme.

Moreover, Narxoz has created a basis for "Grading of Faculty Positions"⁶⁷. This regulation describes the prerequisites and procedures for achieving the assigned grade of the faculty as Professor, Associate Professor, Assistant Professor and Senior Lecturer. Each of these positions have three grades: 3, 2, 1.

SEM as well as SDT welcome internationally certified faculty with at least three years of industry experience to teach on a part time basis.

Narxoz University has installed a 'Teach for Narxoz' programme, which aims to hire faculty with practical business experience as Adjunct professors. In all programmes at hand, adjunct professors with such practical professional experience who at the same time work in their profession /business are involved in teaching. Programme Management and teaching staff carry out ongoing work to attract leading experts in the respective programme fields, for lectures, seminars, and the review of study programmes. This also includes specialists with experience in relevant professional areas who have worked in companies such as Prime Source (as Data Scientist), Beeline Kazakhstan (as Big Data Analyst), Innoforce Solutions (as Systems Analyst).

To improve the qualifications of faculty, the University employs various methods such as foreign internships and internships within Kazakhstan, and internal courses related to enhancing professionalism in the field of information and computer technology and improving the pedagogical skills of teachers, for example case writing workshops held as part of the Winter School at the University. This also includes the testing and examination methods.

Faculty collaboration is not limited to teaching activities. They also create teams to collectively develop, explore and put together research proposals and publications. Some faculty members team up to work with students who participate in various competitions. Another activity where

⁶⁶ Order No. 635 of the Ministry of Education and Science of RK dated Dec. 14, 2007, on "Regulations of Competitive Hiring and Selection of Faculty and Researchers in the Institutions of Higher Education", Order No 391 dated June 17, 2015, and Order No 339 dated July 14, 2021.

⁶⁷ Regulation on Grading of Faculty Positions, as of February 24, 2023.

faculty cooperate to further enhance the programme is peer lessons observations organised each semester by the School QAC, through which they get a chance to collectively discuss teaching approaches, cohesion of course content and any potential gaps between pre- and post-requisites.

In the ongoing development of the study programmes faculty members cooperate closely with employers and with each other, which aims at keeping the content of the respective programme relevant and coherently structured, focused on practice-oriented subjects and with minimal duplication. Faculty also cooperate on research projects leading to co-authored publications.

Additionally, the programmes work closely with other units on quality assurance coordination, minor provision, scheduling and examination scheduling and has effective relationships with other support services such as the Library and Registrar to ensure programme delivery.

Faculty of both Schools provide academic support to students both in classroom and outside of it. Each faculty member devotes two office hours per week to meet and consult students on topics of student interest. The schedule of office hours is published in University LMS pages and sent to students via corporate e-mail. Apart from this faculty are always available for communication via corporate e-mail. Students can write to their faculty or show up in the student meeting area of the faculty open space to meet and talk with their teachers.

Every student has an advisor who is a faculty member. Advisors help students choose their subject and minors as well as develop an individual study plan including the choice of elective disciplines during the established terms of study and help for internships. They advise students in special needs and help them with the registration for courses online or offline. They also help students choose the language of instruction if needed. Students can always come for getting advice. Also, there is a full-time professional psychologist whom they can ask for advice.

School faculty members support students also in their desire to explore new areas and conduct research on the topics of their choice. Some faculty support student teams, who are preparing projects for various competitions, others lead student clubs, or supervise students preparing written work for publication.

During the on-site visit the students commended this support by faculty and the administration of the University.

Appraisal:

The panel is convinced that the structure and number of the faculty correspond to the programme requirements and ensure that the students reach the intended qualification objectives. The faculty's composition, consisting of full-time lecturers and part-time adjunct professors, guarantees that both the academic standards and the requirements of professional practice are fully satisfied. This also applies to the teaching capacity needed for the language tracks of the three programmes.

The academic qualification of the faculty corresponds to the requirements and objectives of the study programme. The HEI verifies the qualifications of the faculty members by means of an established procedure. Specific measures for the further qualification of the faculty members are implemented.

The pedagogical and didactical qualification of the faculty correspond to the requirements and objectives of the study programme. Narxoz verifies the qualifications of the faculty members by means of an established procedure. The University ensures that assessors are familiar with existing testing and examination methods and receive support in developing their own skills in this field. Specific measures for the further qualification of the faculty members are implemented.

The practical business experience of the faculty corresponds to the requirement of the programme to integrate theory and practice.

The faculty members cooperate with each other for the purpose of tuning the courses towards the overall qualification objectives as well as with other units. Meetings of all those teaching in the programme take place regularly. In addition, projects such as research and scientific publications are conducted cooperatively.

Student support is an integral part of the services provided by the faculty. It is offered on a regular basis and serves to help students study successfully. The panel appreciates that every student is assigned to an academic advisor who will help him or her in all matters of the study.

Thus, the faculty members are available for the students outside the specified office hours as well. The students are “fully content” with the support they receive. Moreover, the panel was impressed by the faculty members’ strong commitment to the students interests.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.1	Faculty					
4.1.1*	Structure and quantity of faculty in relation to curricular requirements (Asterisk Criterion)			X		
4.1.2*	Academic qualification of faculty (Asterisk Criterion)			X		
4.1.3*	Pedagogical / didactical qualification of faculty (Asterisk Criterion)			X		
4.1.4	Practical business experience of faculty			X		
4.1.5*	Internal cooperation (Asterisk Criterion)		X			
4.1.6*	Student support by the faculty (Asterisk Criterion)	X				
4.1.7(*)	Student support in distance learning (only relevant and an Asterisk Criterion for blended learning/distance learning programmes)					X

4.2 Programme management

The responsible persons for the programme management and development are the Programme Managers. They coordinate the activities of everyone involved in the programme and must ensure that the programme runs smoothly. On the academic side, they do this in cooperation with the Head of the School. In organisational terms the role of the Programme Managers is decidedly different from a traditional purely administrative role of a Department Chair. Head of programme is an add-

on duty of a teaching faculty member, who volunteers to coordinate the work of the faculty team with regard to ensuring:

- the quality of delivery of programme courses and the quality of teaching materials;
- the continuous improvement of programme content and related research activities;
- the efforts to consolidate, upgrade and promote the team of programme teaching staff.

The Programme Managers also interact with students, faculty, employers and the expert community to further develop and update the respective study programme.

In the process of organising the educational process and as part of the implementation of the programme faculty and students are supported by the administration and structural units of the University:

- An orientation week is held annually for first-year Master students. Narxoz has installed a Students Guidebook This is aimed at familiarising students with the organisation of the educational process at the University and its structural units, which have a direct involvement in ensuring accessibility, transparency, and openness of educational services.
- The Narxoz Catalogue provides information about the University and its academic policy and describes the curriculum.
- In addition to the function if the advisers the Office of Advisors provides the following services for students:
 - Academic advising of students in Bachelor's and Master's programmes.
 - Recognition of results in certificates (IELTS, TOEFL and others) and their transfer.
 - Transfer of credits when transferring from another university and restoring students.
 - Consideration of applications for students in academic matters.
 - An automated Student Help Desk has been created to provide students with an official communication channel with the university and school level administration⁶⁸.

Students and faculty get administrative support by the administration and structural units of the University.

- The University is working to support teaching staff and employees to study and take scientific internships on the programme Bolashak⁶⁹ in foreign organisations engaged in education and research activities that are in the list of top 300 universities in the world.
- The programme management works closely together with the Registrar's Office to provide necessary support related to registration, course scheduling, classroom assignment, and on-time grade submission. Faculty members and students are informed about the programme, schedule, course requirements and expectations, and other necessary details. The students evaluate the performance of the instructors near the end of every course. Administrative support teams assess the student course evaluation results regularly and develop future improvement plans accordingly.
- Narxoz University has departments for International Development and Partnership, Admission, Distance Learning, Research work, Procurement, Finance and other matters.

⁶⁸ <https://narxoz.edu.kz/online-services> (last access October 20, 2023).

⁶⁹ Bolashak is an international scholarship programme which was established by the President of the Republic of Kazakhstan in 1993. It offers scholarships to study a Master programme or a PhD as well as internships for engineering, medical and teaching staff at foreign universities.

Moreover, Narxoz has student self-governing bodies that have a say in committees of higher education institutions and the Academic Council. A Memorandum between Narxoz University and the Alliance of Students of Kazakhstan has been concluded, which commits to purposeful joint work to promote the principles of higher education, students' freedom of choice of disciplines, teachers and class ties.

Appraisal:

The Programme Manager coordinates the activities of everyone involved in the programme and ensures that the programme runs smoothly. Also, the Programme Manager successfully takes initiatives to promote the systematic development of the study programme in a manner which includes all relevant groups.

Faculty members and students are supported by the administration in the organisation of the study programme. Sufficient administrative staff is available. Decision-making processes, authority, and responsibilities are clearly defined. Teachers and students are included in the decision-making processes where their areas of work are involved.

The opportunities of electronic service-support are used and supplement personal one-to-one counselling. The HEI offers the administrative staff opportunities for continuous professional development. The administrative staff acts as a service provider for students and faculty. During the on-site visit the panel members were impressed by the extremely knowledgeable and highly committed administrative staff members of the different departments.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.2	Programme management					
4.2.1*	Programme Director (Asterisk Criterion)		X			
4.2.2	Process organisation and administrative support for students and faculty	X				

4.3 Cooperation and partnerships

Partnership with academic institutions has become a high-profile issue engaging an increasing number of students and staff. Narxoz University has signed several partnership agreements with HEI abroad. Some of them aim at developing dual degrees, others support academic mobility of faculty and students. The main partners for academic mobility are:

- For the two **programme SDS and AMDE:**
 - Ala-Too International University, Kyrgyzstan
 - American University of Central Asia, Kyrgyzstan
 - Coventry University, UK
 - Granada University, Spain
 - Hankuk University of Foreign Studies, South Korea
 - Kangnam University, South Korea

- Osh State University, Kyrgyzstan
 - Schmalkalden University of Applied Sciences, Germany
 - University of Lodz, Poland
- for the **IT in Business programme:**
 - University of Lodz, (Poland)
 - University of Tsukuba, (Japan)
 - IESEG School of Management, (France)
 - National Louis University (Poland)
 - Shoreline Community College (USA)
 - University of Ferrara (Italy)
 - FH Joanneum University of Applied Sciences, (Austria)
 - Solbridge International Business School (South Korea)

Also, there are universities in Kazakhstan that is Narxoz cooperating with for student mobility, such as Esil University in Astana. Academic mobility is one-way outbound mobility so far, but the increasing number of courses offered in English are likely to encourage its future development in both directions.

One of the Narxoz University goals according to its Strategy is improving Employer/University cooperation. Following this goal, Narxoz strengthens cooperation with companies which are the key employers and business partners. Memoranda of Understanding (MoUs) for developing long-term mutually beneficial partnership, future implementation of joint programmes and projects in the field of education and research, as well as specific short-term agreements for designing students' internship were signed. The list is provided below:

List of Business Partners of SDS and AMDE programmes:

Partner name	Current length of partnership
Bereke Bank JSC	1st year
Business Consulting&Education LLP	>3 years
CAIFC Investment Group JSC	>9 years
EAT (Eurasia Transit) LLP	>4 years
Ernst & Young Kazakhstan LLP	>3 years
Eurasian Bank JSC	>8 years
ForteLeasing JSC	1st year
GlobalTransLogistics LLP	>7 years
Karachaganak Petroleum Operating B.V.	>3 years
Kaspi Bank JSC	>4 years
Kazakhstan Stock Exchange JSC	>5 years
Almaty City Department of Statistics	>2 years
TRANSLINE Kazakhstan LLP	>7 years
KaR-Tel JSC (Beeline TM)	>3 years

List of Business Partners for the IT in Business programme:

Partner name	Current length of partnership
LLP METRO Cash&Carry	>5 years

LLP KTA (Kazakhstan Association of Hotels and Restarants)	>5 years
LLP HR-Practice Kazakhstan	>4 years
LLP Central Asian Advertising Association	>2 years
LLP RG Brands Kazakhstan	>3 years
LLP KAZ «Minerals Management»	>5 years
LLP Qoldau Entrepreneurship Centre	>2 years
LLP JTI	>5 years
LLP Green Agro Trade	>5 years
JSC Halyk Bank of Kazakhstan	>5 years
JSC KEGOC	>5 years
JSC Kaspi Bank	>5 years
JSC Forte Bank	>5 years
JSC Forte Leasing	>5 years
JSC Bank Home Credit	>5 years
JSC Kazpost	>5 years
JSC Eurasian Financial Company	>5 years
JSC Bank CenterCredit	>5 years
JSC Danone Berkut	>5 years
JSC Rakhat	>10 years

The Schools take into consideration feedback from employers, business partners and other stakeholders in curricula. The aforementioned agreements have been presented to the panel.

Appraisal:

The scope and nature of cooperation with HEI, other academic institutions and networks relevant for the programme are plausibly presented. The agreements forming the basis of the cooperation are documented. The cooperation is actively pursued and has a clear impact on the conception and implementation of the study programme. All such activities contribute to the development of the students' qualification and skills.

Cooperation with business enterprises and other organisations is actively promoted, in particular by means of regular Memoranda of Understanding for developing long-term mutually beneficial partnerships. Such cooperation has a formative impact on the contents of the programme and on the profile of the graduates. By means of specific measures (e.g. cooperation in projects, provision of traineeships, appointment of professionals in teaching), they significantly contribute to the development of qualifications and skills and to the quality of the final examinations.

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.3 Cooperation and partnerships					
4.3.1(*) Cooperation with HEIs and other academic institutions or networks (Asterisk Criterion for cooperation programmes)			X		
4.3.2(*) Cooperation with business enterprises and other organisations (Asterisk Criterion for educational and vocational programmes, franchise programmes)		X			

4.4 Facilities and equipment

Narxoz main campus has been totally reconstructed. This was done in a sustainable, functional and aesthetic way with environmentally friendly technologies, materials and equipment. The University's academic buildings offer a total area of 28,260 square metres includes 112 classrooms and 115 open space work areas. Moreover, the new campus has more than 26 IT labs three specialised laboratories. In the 2022/2023 academic year, the University's computer bank consists of 871 personal computers (especially PCs and notebooks), of which 563 (64.6%) are used in the educational process.⁷⁰

The University has the following classroom fund (shown in dynamics for 4 academic years):

Indicators / academic years	2019-2020	2020-2021	2021-2022	2022-2023
Classrooms, number / seats	175/ 8541	100/ 4033	100/ 4033	116/ 2880
Computer classrooms: number/seats	58 / 516	26 / 410	26 / 410	26 / 563
Reading rooms / seats	2/ 120	1/ 120	1/ 120	1/ 174

This development shows that the quantity of rooms and seats has been reduced in favor of increasing quality.

In addition to the academic buildings, there are three student dormitories with a total area of 18,820 sq.m. with 733 places for nonresident students. The distribution of places in dormitories is within the competence of the Student Council and the Dean's Office for Students.

The infrastructure also includes office equipment, projection equipment, network and telecommunication equipment, including multifunction printers (MFPs), copiers, printers, scanners, projectors, server network and telecommunication equipment. Teachers and graduates have access to all computers that are not used in classrooms. All classrooms are equipped with multi-media facilities, Liquid Crystal Display/Interactive panels, webcams, LCD projectors, computers, appropriate furniture.

⁷⁰ See also the description of Narxoz infrastructure on the University website: : <https://en.narxoz.kz/infrastructure> (last seen September 18, 2023).

There are computer and multimedia classes. Multimedia facilities are part of the linguistic center. To perform laboratory work on specialized courses, Narxoz offers a 1C Laboratory, an E-Learning Laboratory and Bloomberg for students studying business and social sciences. Data Science Laboratory, Newton Laboratory, Cybersecurity Laboratory, Graphics and Multimedia Laboratory and Cloud Computing Laboratory are in the School of Digital Technologies.

Narxoz University has a database on electronic media of all educational and methodical complexes, textbooks, as well as multimedia and computer equipment as its disposal. Information management is provided with the following information systems:

- Official website of the University: <https://narxoz.edu.kz>,
- Automated information system of educational process management: 'Banner Faculty'
- Student's Banner
- Banner Research
- Electronic document Narxoz
- Educational platform of the University

The Banner Research information system has been developed and implemented at the University, which meets its needs and allows obtaining the necessary systematised data.

The creation of a single corporate email account led to the introduction of mass mailings and provided all students and teachers with corporate individual email addresses.

The University has approved a Policy to ensure equal access to education for students with disabilities. The entrance to the university building is equipped with ramps and call buttons for students with disabilities and provides them with barrier-free access. The building is equipped with free wireless Internet access, which provides free Internet access from laptops via a wireless LAN.

For the high-quality implementation of programmes, an Information Technology Department was created, which provides the University with high-quality information technology services and products: software and hardware support for databases and knowledge; creation and support of educational telecommunication network servers and PBX; technical support for web conferences and much more.

To access databases inside the University, external access was provided via secure SSL-VPN links using the built-in FortiGate functionality. Since 2021, the Canvas LMS system supports all educational activities and provides access to all classroom materials for students and teachers.

The Academic Library contributes to meeting the needs of both educational and research activities of master students in the programme. The library offers literature in three languages: Kazakh, Russian and English. The reference library is focussed on Kazakh and Russian books and journals. The English literature (books and journals) is available mostly digitally. Today the fund of the Academic Library contains 817 567 units of publications in Kazakh, Russian and foreign languages, including educational and methodical literature. Faculty and students have access to International scientific databases, such as:

- EBSCO “E-book business collection” www.search.ebscohost.com offers over 21,000 book titles for students and academics doing research in a variety of business areas. The collection includes books from Oxford University Press, Business Expert Press, University of Chicago Press, Entrepreneur Press and American Management Association, as well as summaries of all the most recent Harvard Business Review, books, bestsellers, and press reviews available in the eBook Business Collection.
- The JSTOR collections are composed of reputable international periodicals. The JSTOR ESSENTIAL collection covers 694 titles in 45 disciplines, including economics, business, finance, political science, law, education and other social disciplines (according to the profile of the university). JSTOR's archival collections contain over 2,400 scientific journals in 60 disciplines. JSTOR works with 1200 publishers from over 57 countries.

The Library organises practical trainings and webinars for students and faculty by representatives of Clarivate Analytics, Springer, Elsevier and others, places articles of the University journal Central Asian Economic Review and articles and works of University researchers in the information-analytical system Science Index (RSCI). Together with the Department of Research and Development, it monitors the publication activity of the University faculty.

The Library is also equipped with the necessary telecommunication equipment, has free access to the Internet, and full Wi-Fi. 46 computers are available for use by students in the reading rooms of the library. All computers are connected into a local area network. As a platform for providing a single point of access to electronic information resources, a web page of Scientific Library on the University website was developed, providing access to the electronic library, electronic catalog, remote access resources, the organisation of the virtual help desk, news feed and other services.

Users can order the required literature from the electronic catalogue. The Scientific Library has put into operation the MegaPro automated information and library system (AIBS) designed to automate the main library processes. AIBS MegaPRO allows ‘one stop’ access to the information resources of the library, significantly improving ease of use and access.

AIBS MegaPro of the Scientific Library enabled the staff to transition, in the conditions of distance learning of students, to the remote mode of work. During the pandemic isolation mode, the library staff provided operational access to electronic resources 24/7 via the Internet, consulting, and electronic document delivery.

During the academic year, the staff of the library conducts webinars about the information resources of the library for students and teachers at the university, including students with disabilities.

Appraisal:

The panel had the opportunity to visit the totally reconstructed campus of Narxoz University. It has been built based on a concept of sustainable architecture. The quantity, quality, media and IT facilities of the teaching rooms are well equipped and meet the standards required for the programmes, even taking into account the resource needs of other study programmes. The rooms

are properly equipped also for disabled students and give them barrier-free access. There are chairs for the students in teaching rooms that have been specifically developed and designed for longer sitting positions and sessions.

Access to the internet via wireless LAN is provided free of charge on the whole campus. A sufficient number of group rooms is available.

Moreover, the teaching rooms and labs are equipped with state-of-the-art technology. For special contents of the curriculum (e.g. business games, role-playing game, virtual elements, special business training), Narxoz University has appropriate rooms with specific technical components needed.

The opening hours of the library take students' needs sufficiently into account. Access to the literature and journals as well as to digital media (e.g. electronic media, databases) is ensured 24/7. The literature expressly required for the study programmes is up to a certain amount available in the library and also kept up to date. But the main part of literature and journals is accessible in a digital way. Access to relevant digital media is also available from the students' home. Qualified library staff can advise the students.

	Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.4 Facilities and equipment					
4.4.1* Quantity, quality, media and IT equipment of teaching and group rooms (Asterisk Criterion)	X				
4.4.2* Access to literature (Asterisk Criterion)		X			

4.5 Additional services

Narxoz established the Career Development Center and Alumni Relations (CDAR) unit in 2005 with the purpose of building strong cooperation between the business community, alumni, and students of Narxoz. Moreover, CDAR is responsible for organising and conducting internships and for facilitating and monitoring the employment of graduates. The Department also coordinates the work of the Narxoz University Advisory Committee⁷¹. The organisation and conduct of internships are based on the approved Regulations on Academic Policy⁷² and take place according to the Academic calendar.

The principal areas of activity of CDAR are:

- assisting students and graduates of the University in employment and career development;
- assistance in the organisation of educational, industrial, pre-diploma and research internships of students;

⁷¹ <https://en.narxoz.kz/advisory-committee>

⁷² Regulation on the Academic Council

- establishing partnerships between students and the business community of Kazakhstan through round tables with employers, and promotion of entrepreneurship among graduates of Narxoz University;
- organising master classes, guest lectures, online webinars for students.

Further, the CDAR organises annual job fairs and maintains close connections with leading companies to have full information about job vacancies. On the University website in section "Career and Employment" students can get advice on employment, internships and professional practice. Also, CDAR provides advice to students and graduates on career and employment by conducting master classes and training with large and international recruiters; posting information about vacancies and events on employment, and internships on social networks processing vacancies; creating a database of graduates; compiling job databases and monitoring placement of graduates; monitoring career expectations of graduates and monitoring employment dynamics.

The Narxoz Alumni Club is being formed. CDAR conducts a satisfaction survey among graduates. Moreover, graduate representatives are members of the Business Council and alumni are invited to various University events (conferences, round tables, advanced training courses, as members of the jury of olympiads and competitions, alumni meetings), as well as to guest lectures. Also, last year University launched a free professional development programme 'Narxoz BootCamp'⁷³ for Alumni, where graduates of all years and majors can participate and upgrade their professional skills.

Appraisal:

With its Career Development Center and Alumni Relations (CDAR), Narxoz has established career counselling and placement services that are offered to the students and graduates to promote their employability, also on an individual and long-term basis. They are performed regularly and are actively marketed. Students have access to the HEI-wide corporate network. The University brings its graduates in contact with representatives from business enterprises at regular events.

An alumni organisation has been set up with the aim of developing an alumni network. Alumni activities are planned on a long-term basis, performed regularly and actively used for assessing and evolving the programme.

For all of these services Narxoz University provides sufficient resources.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.5	Additional services					
4.5.1	Career counselling and placement service		X			
4.5.2	Alumni Activities		X			

⁷³ <https://en.narxoz.kz/upgrade2022> (last access October 20, 2023).

4.6 Financing of the study programme (Asterisk Criterion)

The programmes are financially viable. The contribution margin of Bachelor programmes is higher than the margin of Master programmes. Academic programme revenues come from tuition fees, also via state grants which cover tuition costs and direct payment by students. Taking into account the fact that 77% of students pay for their own education and only 23% on grants, the programmes are not grant dependent.

The programmes receive support for materials, equipment and other costs through the university budgeting and spending allocation process. Payroll is the largest direct cost. All financial operations are managed through the central administration in consultation with the relevant units. The purchase of equipment and devices, educational stands and training materials is carried out in accordance with a public procurement plan, which is approved annually by a specially created commission. Every year the University allocates funds for the renewal, expansion of material, scientific and educational laboratory base, the purchase of computers, software and equipment for classrooms. Financial resources are allocated according to the plan of re-equipment and introduction of new learning technologies.

Appraisal:

The panel was given an overview of the budget development in the periods between 2018 and 2023. Based on this, it is convinced that the income related to the four programmes ensures that each cohort of students starting within the accreditation period can complete the respective study programme.

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.6*	Financing of the study programme (Asterisk Criterion)			X		

5. Quality assurance and documentation

The quality management strategy of Narxoz University has been set up with the aim of supporting the overall strategy and the University's profile through enhancing the quality of teaching and research. It also aims at improving key stakeholders' satisfaction (students, academic staff, researchers, non-academic staff, prospective employers, other organisations and institutions connected to higher education) as well as the operational effectiveness. The quality management strategy of the University is based upon the following:

- The European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG 2015),
- Policies and regulations of the Ministry of Science and Higher Education of RK,
- Narxoz University Strategy and Quality Assurance Policy⁷⁴, and
- Quality Assurance Handbook⁷⁵ which describes the procedures of quality assessments.

The Quality Assurance (QA) system involves both academic and non-academic areas of University functions. The process of quality assurance in each major component consists of four stages:

- Developing regulatory background and plan,
- Collecting quality data,
- Analysing the findings,
- Making revisions or changes as a result of data analysis.

The framework for effective quality assurance is compatible with the mechanisms for both institutional, departmental, and programme quality assurance. It is embedded in each School and all University Departments and utilises both quantitative and qualitative data. The results of this continuous QA process are communicated via the Academic Quality Committees and the Academic Council and aims to benefit all internal and external stakeholders in their decision-making.

Various committees at University level and at School levels are involved:

- University Academic Council (Committees),
- School Councils,
- University Quality Assurance Committee⁷⁶, which operates based on the Academic Council of the University,
- Schools Quality Assurance Committees.

These bodies perform the functions of monitoring the process of ensuring academic quality at Narxoz University.

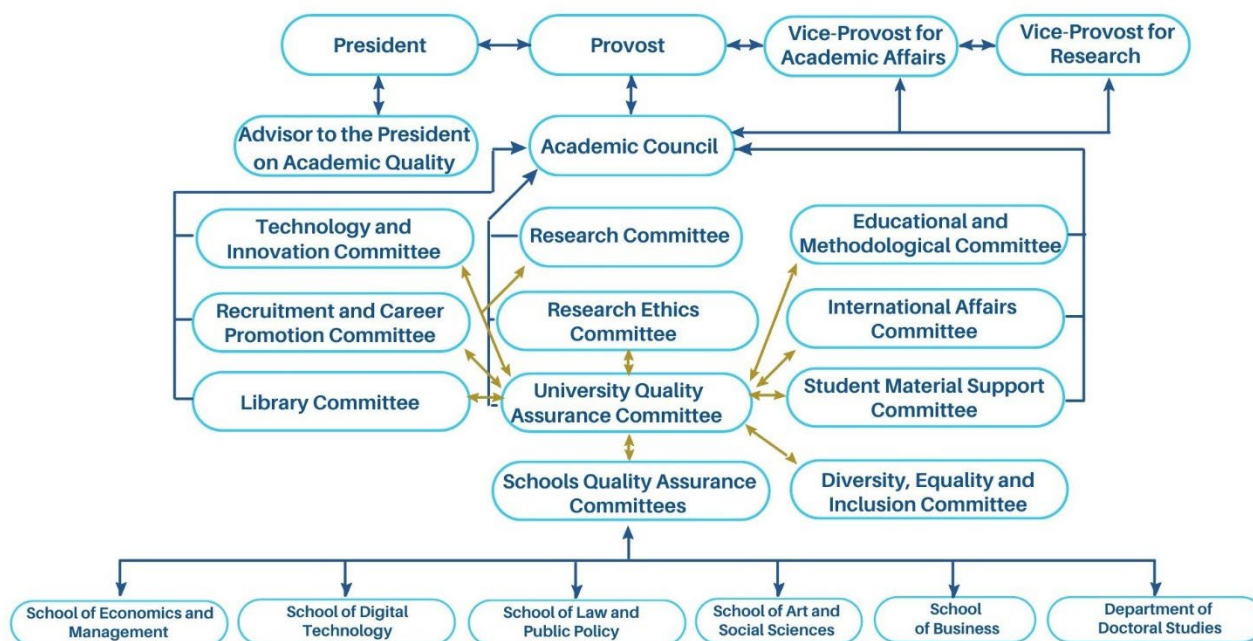
Quality Assurance System

The system is summarized in the following graphic and described further below.

⁷⁴ Quality Assurance Policy, as of November 2021.

⁷⁵ Quality Assurance Handbook, as of December 2022.

⁷⁶ Annex 32. Regulation on University Quality Assurance Committee Under Academic Council



The **Academic Council** is responsible for:

- making decisions on all fundamental issues of the organisation of educational and research activities of the University;
- making decisions in the organisation of monitoring of the academic process and implementation of research projects and academic programmes;
- review of annual reports of structural divisions of the University;
- making proposals for opening new directions (profiles, programmes) of training.

The main activity of the **University Quality Assurance Committee** is the management of the internal quality assurance system. The Committee is responsible for:

- formulating and periodically reviewing the University Quality Assurance Policy and the internal quality assurance processes of educational services
- developing and introducing new elements and methods of the internal QA system;
- coordinating the work of the Schools' QA Committees

Decisions of the Committee on matters within its competence may have the force of decisions of the Academic Council.

Each School and academic division is responsible for creating its own continuous quality improvement process, including an annual and cyclical analysis of programmes and plans. Each school has a **School Council and a Quality Assurance Committee**. They report to the University Quality Assurance Committee.

The functions of the Schools QA Committees⁷⁷ are regulated as follows:

- Develop the quality control strategy of the School/Department/Centre;
- Elaborate a methodology for monitoring;
- Review how quality principles are being applied and quality policy objectives are achieved.

The scope of work of the Committees includes

⁷⁷ See Regulation on Schools Quality Assurance Committees of the Narxoz University, as of November 2022.

- Review of syllabi and discussion of teaching and research methods;
- Providing feedback to departments on assessment materials;
- Curricula and EPs⁷⁸ learning outcomes review and update;
- Development of policies in the field of quality assurance of education for the Schools;
- Discussion of the Plan for the development of EPs;
- Discussion of self-assessment reports within the framework of participation in national and international accreditation of the University/programmes;
- Consideration of the results of participation in national and international ratings;
- Involvement of representatives of the industry and the corporate sector;
- Discussing appeal cases and other student requests;
- Evaluation of programmes' academic performance through review of Course Management Forms.

The **Department of Accreditation** plays a critical supporting role in the above process. The four aspects of the role of the Accreditation Department are:

- to provide data support for external quality monitoring systems (ratings and accreditations);
- to support the development of an internal quality management system in cooperation with the University QA Committee and Schools QA Committees;
- to conduct the regular Faculty Teaching Evaluation Survey (FTES), the Faculty Satisfaction Survey (FSS) and on-request surveys;
- to provide data for analyses and improvement of quality of teaching.

University community members such as students, teaching and administrative staff are part of collegial committees on School and University level. Their participation in all areas of Narxoz discussions and decision-making processes takes place regularly and systematically. Corporate partners and external stakeholders are also involved in different committees and play an active role within the quality management system.

The University informs the public about the decisions made in the management and quality assurance system, as well as the competences and responsibilities in learning and teaching, research and services by publishing articles, management interviews in social media, on the website and social media. The faculty and staff of the University are informed about quality management measures and the results obtained at the meetings of the Academic Council, the QAC of Schools, regular meetings, and faculty general assemblies with the President and Provost of the University.

Narxoz University has developed a Regulation on Monitoring the Quality of Teaching⁷⁹. The University uses a variety of tools to assess the quality of teaching:

At the end of the academic year, the faculty submit a completed Course Management form. The assessment covers key aspects of teaching such as

- General description of the course in the syllabus;

⁷⁸ EP means „Educational Programme“.

⁷⁹ Approved by Academic Council on September 3, 2019 and updated in 2021.

- Objectives of the course;
- Course learning outcomes;
- The relationship between course objectives and learning outcomes of the EP;
- Course teaching materials;
- The teacher's opinion on the degree of provision of the course with the necessary educational literature;
- The grading system that was used;
- Distribution of grades;
- Learning outcomes and how to measure them;
- Problems encountered during the course.

This form also allows conclusions on the student workload⁸⁰ and must be accompanied by the final exam sample and submitted to the Programme Director at the end of the semester.

Each semester faculty attend classes of colleagues and complete assessment forms. Assessment covers key aspects of teaching:

- Compliance of the topic and content of the training lesson with the syllabus;
- Relevance of educational material, relation with practice (use of results of research, projects, case-studies from the practice of firms, companies, banks, etc.);
- Correspondence of the content of the material to the level of preparedness of students;
- Multidisciplinary links;
- The ability of the teacher to maintain the interest and attention of students and the level of active participation in the discussion of issues;
- The use of interactive methods and their correlation with learning objectives.

Various University units are involved in conducting surveys for students, graduates and employers. The assessments are based on:

- monitoring the quality of teaching (The Schools Quality Assurance Committees);
- surveying the students, graduates and employers on various aspects of university life.

Schools QA Committees analyse results of the surveys and develop recommendations accordingly.

Evaluation by students is carried out through several regular and on-request institutional research activities. Key instrument is the Faculty Teaching Evaluation Survey (FTES).

This survey is conducted primarily to provide a measure of assurance of the teaching quality at University level. The FTES collects the opinion of Bachelor and Master students on their perceptions of instructional effectiveness, quality of teaching and their learning experience for each subject in which they are enrolled.

The questionnaire consists of 18 multiple choice and open-ended questions and looks broadly at the quality of teaching in three important fields: 1) Faculty, 2) Class Sessions and 3) Course. The first section consists of questions about instructional delivery and professional attitude towards students while the second part covers questions about management of class sessions and the learning environment. The third part incorporates questions about student understanding of the course requirements, syllabus and availability of course materials. Summary questions 19 and 20 identify the overall level of satisfaction with the course and teaching quality. Two open-ended

⁸⁰ See also above chapter 3.2.3 “Feasibility of the study workload”.

questions soliciting general comments and remarks about instructors are also included in the questionnaire.

Access to individual assessment results is available to faculty in the Faculty Banner system when they log in to their personal account. Department Chairs and Directors of Schools also have access to the evaluations of their faculty. Access to all surveys reports is available to the President, Provost and Vice Presidents on the Narxoz Portal website. The results of the teaching evaluation survey are used in the Faculty Grading System as part of the assessment of the performance of a faculty member.

After the Accreditation Department submits the reports on the survey, the Schools Quality Assurance Committees provide a progress report and feedback to the recommendations of survey participants. Students are informed via the Student Senate.

The QA Committee of the School of Economics and Management (SEM), in response to the recommendation of the report on the student survey 'ensure the availability of books on professional certifications,' decided to discuss the matter with the Library.

The Department of Development and Coordination of International Programmes of Narxoz University conducts a survey on satisfaction of external outgoing academic mobility participants of Narxoz University. The purpose of this survey is to analyse the satisfaction level with the quality of services provided by the Department in terms of the organising external outgoing academic mobility among students and to receive recommendations for improving the activities and quality of Department services.

Faculty members are involved in assessment processes through regular and on-request activities. **The Faculty Satisfaction Survey** is a mechanism for faculty feedback.

The Faculty Satisfaction Survey measures the level of satisfaction with:

- working conditions,
- professional development,
- quality of management at Narxoz University.

The questionnaire is slightly revised annually to reflect the administrative changes which took place over the last academic year (for instance, new appointments in central administration).

The questionnaire is carried out online and includes 30 questions covering especially the following areas:

- Involvement in Academic Processes,
- Workload of faculty,
- Teaching and Learning,
- Research,
- Facilities.

The report on survey results is presented to top management via the Narxoz Portal website.

The FTES and FSS surveys are conducted by the Accreditation Department of Narxoz University.

The University employs the following forms of **external assessment** as part of its systematic institutional research activities – feedback from key stakeholders (alumni and employers), rankings and accreditation.

The Narxoz Alumni Survey aims to assure the quality of professional preparation of graduates by collecting their feedback about work experience, job performance and level of satisfaction with the quality of Narxoz University's education, which would allow identifying areas for improvement.

The survey is conducted each summer among the Narxoz Alumni (one year after graduation) via e-mails, phone interviews and online questionnaires. The Alumni answer questions including 5-point scale, multiple choice and open-ended questions that touch upon details of their current employment (company, salary, position, etc.) and/or further studies, contribution of Narxoz programme into their career, satisfaction with/suggestion for Narxoz services, ways of involvement with the University before and after graduation.

The survey results are reported to the top management and shared with Narxoz University employees and alumni. To facilitate programme assessment efforts data are broken down by the programmes.

The key messages are taken as the basis for the further enhancement of the University's programmes, services and environment in the following ways:

- provides suggestions for changes in programme curriculum, teaching practices and educational approaches;
- allows development of sustainable strategies for long-term Alumni-University collaboration;
- provides an understanding of how alumni could make contributions and if they are planning to donate to the University;
- offers ideas for student recruitment and career services to be delivered to students and alumni.

The **Alumni Employers' Satisfaction Survey** seeks the opinion of employers on levels of Narxoz graduates' professional preparedness in terms of knowledge, skills and attitudes. The survey is conducted through different channels: electronic mail, fax, post, social networks (Instagram, Facebook, Telegram, WhatsApp, YouTube); phone calls and visits.

The survey results⁸¹ are placed on the website. The results illustrate employers' perception of Narxoz graduates' professional quality and help to determine ways of further improvement of academic programmes. Feedback from employers provides a perspective on educational quality and could facilitate initiatives in:

- building and managing collaboration between the University, industry and professional bodies;
- planning of actions for improving the employability of recent graduates;
- adjusting current study programmes and developing other offerings matching the needs of employers.

Surveys of graduates and employers are conducted by the Career Development and Alumni Relations.

Programme documentation

Narxoz University has an internal document audit system that includes a review of the QA documents. The reasons for the audit could be related to changes in MSHE regulations, University Strategy and the organisational structure. All official internal documents have a "Passport" that includes the title of the document, brief description, status, date of approval, date of audit, and date of approval by the Academic Council. The primary document regulating academic processes is

⁸¹ Report on the Results of Graduates Survey

the Academic Policy of Narxoz University. Internal QA documents are publicly available on the University's website⁸².

Programme description

While strictly following national and international requirements, the content and development plans of each programme have their own identity. Transparency of the programme management system is ensured by such conditions as:

- accessibility of information on all areas of activity to stakeholders;
- placement of information on study programmes on the website of the University in the section "Study at Narxoz University" on the platform of Digital University (<https://narxoz.edu.kz/admission>).
- functioning of collegial decision-making bodies - Academic Council of the University, University Teaching Council, Research Council of the University, Ethics Committee, School Councils, School Commissions for Quality Assurance, School of Economics and Management Committee for performance evaluation and staff development, Student Councils of Schools, University Student Senate, Academic Student Communities of Schools;
- involvement of employers, students and teaching staff in the development and management of programme;
- functioning of multichannel feedback system (<https://narxoz.edu.kz/zadat-vopros/>);
- formation of a complete database of normative documentation and its availability to the teaching staff and students on the University website;
- implementation of information systems supporting all OPs (Banner, Moodle).

Information on activities during the academic year

The University carries out active work to inform the public and work with key stakeholders - applicants, their parents, teachers, students, partners, employers, government agencies. Activities include:

- Strengthening social media presence;
- expanding the functionality of the site;
- the use of messengers and CRM systems;
- implementation of a mobile application;
- Introduction of first-class enrolment management software;
- Strengthening of the PR service.

The official website of the University contains information on its license of the University, on University ratings, professional institutional and programme accreditations to inform the public.

The University website also contains the following information:

- the strategy and objectives of the University;⁸³
- the organisational structure of the University;⁸⁴

⁸² QA documents on the University's website <https://en.narxoz.kz/quality-assurance> (last access October 20, 2023).

⁸³ <https://en.narxoz.kz/development-strategy> (last access October 20, 2023).

⁸⁴ <https://en.narxoz.kz/structure> (last access October 20, 2023).

- the infrastructure of the University;⁸⁵
- key regulations and policies.⁸⁶

Internal regulatory documents of the University are regularly published, updated and stored on the corporate portal. Information for University staff is provided through corporate email as well as social networks as appropriate.

Appraisal:

A quality assurance and development procedure, which systematically and continuously monitors and develops the quality of the programme with respect to its contents, processes, and outcomes, has been set up. It takes into account the evaluation results and the analysis on student workload, success rate, and graduate employment as well as the profile of the student population. Faculty members and students participate in the respective committees to plan and assess the quality assurance and development procedures. Responsibilities are clearly defined.

Evaluation by the students as well as quality control by faculty are carried out on a regular basis and in accordance with a prescribed procedure; the outcomes are communicated to the students and provide input for the quality development process.

Also, an external evaluation is carried out on a regular basis and in accordance with a prescribed procedure; the outcomes are communicated and provide input for the quality development process.

The study programmes' contents, curricula and examination schemes have been suitably documented, described in detail and published (programme descriptions and exam regulations). This documentation is constantly updated and easily accessible for interested parties both in print and in digital form, which ensures a high level of transparency.

The University regularly publishes current news and information – both quantitative and qualitative – about the study programme.

⁸⁵ <https://en.narxoz.kz/infrastructure> (last access October 20, 2023).

⁸⁶ <https://en.narxoz.kz/quality-assurance> (last access October 20, 2023).

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
5.1*	Quality assurance and quality development with respect to contents, processes and outcomes (Asterisk Criterion)			X		
5.2	Instruments of quality assurance					
5.2.1	Evaluation by students			X		
5.2.2	Evaluation by faculty			X		
5.2.3	External evaluation by alumni, employers and third parties			X		
5.3	Programme documentation					
5.3.1*	Programme description (Asterisk Criterion)		X			
5.3.2	Information on activities during the academic year			X		

Quality profile

HEI: Narxoz University, Almaty, Kazakhstan
 School of Digital Technologies,
 School of Economics and Management

Bachelor programmes:

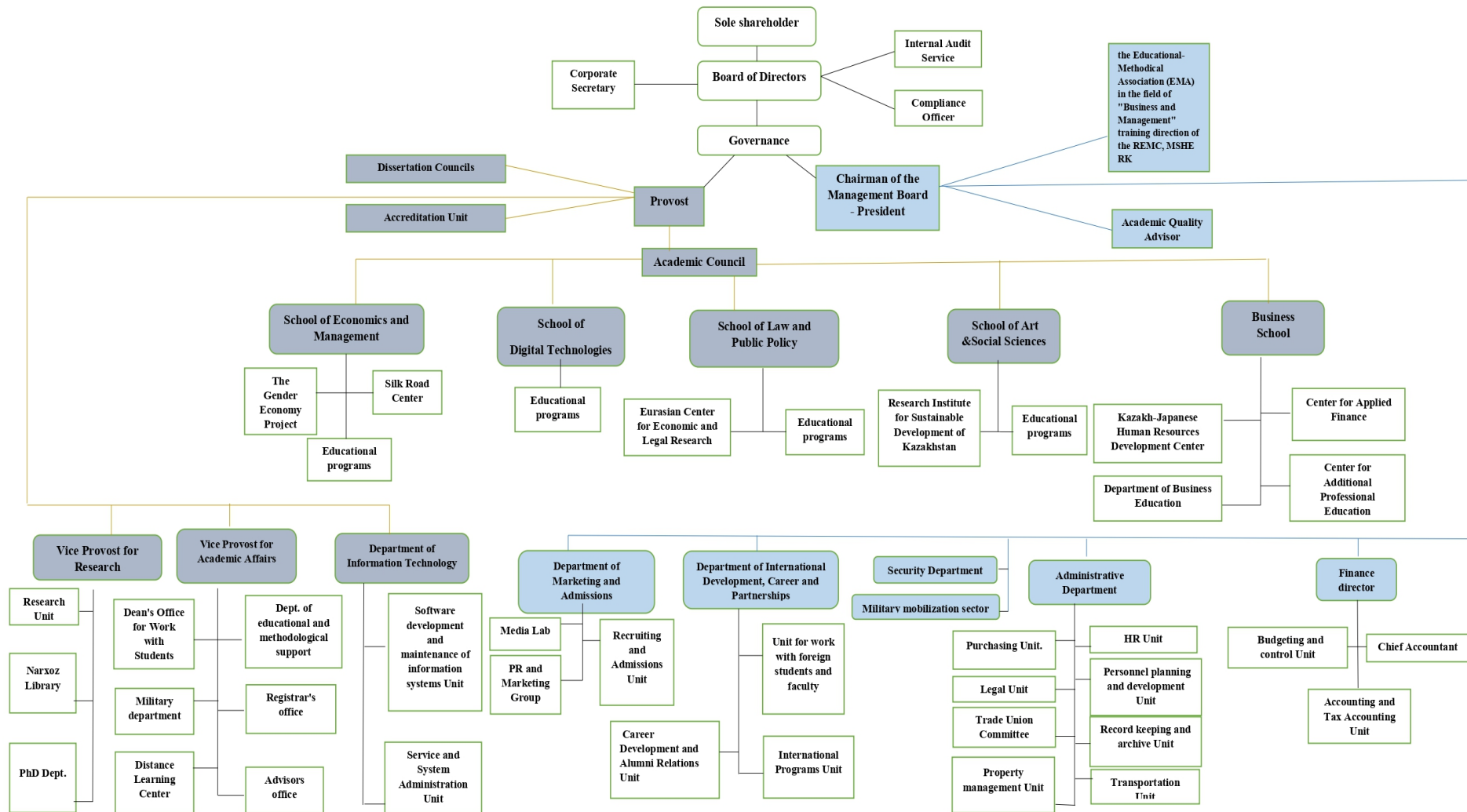
- Statistics and Data Science (SDS)
- Applied Mathematics in Digital Economics (AMDE)
- IT in Business

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
1	Objectives					
1.1*	Objectives of the study programme (Asterisk Criterion)		X (IT in Business)	X(SDS, AMDE)		
1.2*	International orientation of the study programme design (Asterisk Criterion)			X		
1.3	Positioning of the study programme					
1.3.1	Positioning of the study programme in the educational market			X		
1.3.2	Positioning of the study programme on the job market for graduates („Employability“)		X			
1.3.3	Positioning of the study programme within the HEI's overall strategic concept			X		
2	Admission					
2.1*	Admission requirements (Asterisk Criterion)		X			
2.2	Counselling for prospective students			X		
2.3*	Selection procedure (if relevant)			X		
2.4(*)	Professional experience (if relevant; Asterisk Criterion for master programmes that require professional experience)					X
2.5*	Ensuring foreign language proficiency (Asterisk Criterion)			X		
2.6*	Transparency and documentation of admission procedure and decision (Asterisk Criterion)			X		
3	Contents, structure and didactical concept					
3.1	Contents					
3.1.1*	Logic and conceptual coherence (Asterisk Criterion)		X(IT in Business)	X(SDS, AMDE)		
3.1.2*	Rationale for degree and programme name (Asterisk Criterion)			X		
3.1.3*	Integration of theory and practice (Asterisk Criterion)		X(IT in Business)	X(SDS, AMDE)		
3.1.4	Interdisciplinary thinking			X		
3.1.5	Ethical aspects			X		
3.1.6*	Methods and scientific practice (Asterisk Criterion)			X		

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
3.1.7*	Examination and final thesis (Asterisk Criterion)			X		
3.2	Structure					
3.2.1*	Modular structure of the study programme (Asterisk Criterion)			X		
3.2.2*	Study and exam regulations (Asterisk Criterion)			X		
3.2.3*	Feasibility of study workload (Asterisk Criterion)			X		
3.2.4	Equality of opportunity		X			
3.3	Didactical concept					
3.3.1*	Logic and plausibility of the didactical concept (Asterisk Criterion)			X		
3.3.2*	Course materials (Asterisk Criterion)			X		
3.3.3	Guest lecturers			X		
3.3.4	Lecturing tutors				X	
3.4	Internationality					
3.4.1*	International contents and intercultural aspects (Asterisk Criterion)			X		
3.4.2	Internationality of the student body				X	
3.4.3	Internationality of faculty			X		
3.4.4	Foreign language contents		X(IT in Business)	X(SDS, AMDE)		
3.5*	Multidisciplinary competences and skills (Asterisk Criterion)			X		
3.6*	Skills for employment / Employability (Asterisk Criterion)		X			
4.	Academic environment and framework conditions					
4.1	Faculty					
4.1.1*	Structure and quantity of faculty in relation to curricular requirements (Asterisk Criterion)			X		
4.1.2*	Academic qualification of faculty (Asterisk Criterion)			X		
4.1.3*	Pedagogical / didactical qualification of faculty (Asterisk Criterion)			X		
4.1.4	Practical business experience of faculty			X		
4.1.5*	Internal cooperation (Asterisk Criterion)		X			
4.1.6*	Student support by the faculty (Asterisk Criterion)	X				
4.1.7(*)	Student support in distance learning (only relevant and an Asterisk Criterion for blended-learning/distance learning programmes)					X
4.2	Programme management					
4.2.1*	Programme Director (Asterisk Criterion)		X			

		Exceptional	Exceeds quality requirements	Meets quality requirements	Does not meet quality requirements	n.r.
4.2.2	Process organisation and administrative support for students and faculty	X				
4.3	Cooperation and partnerships					
4.3.1(*)	Cooperation with HEIs and other academic institutions or networks (Asterisk Criterion for cooperation programmes)			X		
4.3.2(*)	Cooperation with business enterprises and other organisations (Asterisk Criterion for educational and vocational programmes, franchise programmes)		X			
4.4	Facilities and equipment					
4.4.1*	Quantity, quality, media and IT equipment of teaching and group rooms (Asterisk Criterion)	X				
4.4.2*	Access to literature (Asterisk Criterion)		X			
4.5	Additional services					
4.5.1	Career counselling and placement service		X			
4.5.2	Alumni Activities		X			
4.6*	Financing of the study programme (Asterisk Criterion)			X		
5	Quality assurance and documentation					
5.1*	Quality assurance and quality development with respect to contents, processes and outcomes (Asterisk Criterion)			X		
5.2	Instruments of quality assurance					
5.2.1	Evaluation by students			X		
5.2.2	Evaluation by faculty			X		
5.2.3	External evaluation by alumni, employers and third parties			X		
5.3	Programme documentation					
5.3.1*	Programme description (Asterisk Criterion)		X			
5.3.2	Information on activities during the academic year			X		

Organizational chart of the "Narxoz University" JSC



Diagrammes:

Content	Page
Universities offering programmes in GEP B055	19
Quality Assurance System	75
Organisational chart	85

Tables:

Content	Page
Statistical Data of SDS programme	11
Statistical Data of AMDE programme	12
Market segments of IT in Business programmes	1
Credit recognition and transfer terms for foreign languages	25
SDS programme: Curriculum overview	27
AMDE programme: Curriculum overview	31
IT in Business programme: Curriculum overview	34
IT in Business programme: Intended LO	37
Structure of Bachelor programmes	47
Course groups of SDS and AMDE	47
Course groups of IT in Business programme	47
Narxoz University grading system	48
Guest lecturers (SEM)	52
List of SEM faculty members with international background	56
Faculty staff compositions for all three programmes	60
List of Business Partners of SDS and AMDE programmes	66
List of Business Partners of IT in Business programme	66
List of University class-room capacity	67
Faculty structure	68