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6B06102 INFORMATION SYSTEMS

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BAYREUTH, 5 JUNE 2025

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7M06102 INFORMATION SYSTEMS

- MASTER -

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8D06101 INFORMATION SYSTEMS

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8D06102 COMPUTER ENGINEERING

- PHD-

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8D06103 COMPUTER SCIENCE

- PHD -

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8D06105 SYSTEMS ENGINEERING

- PHD-

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6B05304 PHYSICS

- BACHELOR -

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7M01501 PHYSICS (PEDAGOGICAL)

- MASTER -

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7M05308 PHYSICS

- MASTER -

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BAYREUTH, 5 JUNE 2025

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6B06201 RADIOENGINEERING, ELECTRONICS AND TELECOMMUNICATION

- BACHELOR -

AT THE AL-FARABI KAZAKH NATIONAL UNIVERSITY

THE ACCREDITATION IS VALID UNTIL 30TH OF SEPTEMBER 2031.

BAYREUTH, 5 JUNE 2025

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7M06201 RADIOENGINEERING, ELECTRONICS AND TELECOMMUNICATION

- MASTER -

AT THE AL-FARABI KAZAKH NATIONAL UNIVERSITY

THE ACCREDITATION IS VALID UNTIL 30TH OF SEPTEMBER 2031.

BAYREUTH, 5 JUNE 2025

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8D06201 RADIOENGINEERING, ELECTRONICS AND TELECOMMUNICATION
- PHD -

AT THE AL-FARABI KAZAKH NATIONAL UNIVERSITY

THE ACCREDITATION IS VALID UNTIL 30TH OF SEPTEMBER 2031.

BAYREUTH, 5 JUNE 2025

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PROF. DR. ALOYS KRIEG
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AWARDS THE SEAL OF APPROVAL

FOR THE STUDY PROGRAMME

7M06101 COMPUTATIONAL LINGUISTICS

- MASTER -

AT THE AL-FARABI KAZAKH NATIONAL UNIVERSITY

THE ACCREDITATION IS VALID UNTIL 30TH OF SEPTEMBER 2031.

BAYREUTH, 5 JUNE 2025

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ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

6B06102 ИНФОРМАЦИОННЫЕ СИСТЕМЫ

- БАКАЛАВРИАТ -

КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

БАЙРОЙТ, 5 ИЮНЯ 2025

....
ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250144-0

ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
и ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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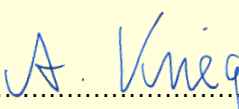ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

7M06102 Информационные системы

- Магистратура -

Казахский национальный университет имени Аль-Фараби

Аккредитация действительна до 30 Сентября 2031.

Байройт, 5 Июня 2025

Профессор, Др. Алоис Криг
Председатель Аккредитационной Комиссии

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ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

8D06101 Информационные системы

- Докторантура -

Казахский национальный университет имени аль-Фараби

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

Байройт, 5 Июня 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
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ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
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8D06102 Компьютерная инженерия

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АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

Байройт, 5 Июня 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

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И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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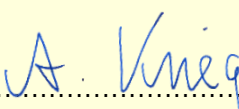ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

8D06103 КОМПЬЮТЕРНЫЕ НАУКИ

- ДОКТОРАНТУРА -

КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

БАЙРОЙТ, 5 ИЮНЯ 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
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ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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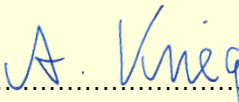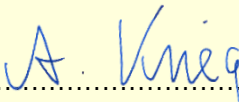ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

8D06105 Системная инженерия

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Казахский национальный университет имени Аль-Фараби

Аккредитация действительна до 30 Сентября 2031.

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КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2032.

БАЙРОЙТ, 5 ИЮНЯ 2025

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И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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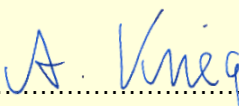ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА
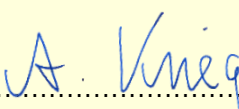

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7M01501 Физика (педагогическая)

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КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2032.

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ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250151-1

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И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2032.

БАЙРОЙТ, 5 ИЮНЯ 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250152-1

ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

6B06201 РАДИОТЕХНИКА, ЭЛЕКТРОНИКА И ТЕЛЕКОММУНИКАЦИЯ

- БАКАЛАВРИАТ -

КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

БАЙРОЙТ, 5 ИЮНЯ 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250153-0

Зарегистрированное общество ACQUIN внесено в Европейский Регистр EQAR (апрель 2009 года) и
в Национальный реестр аккредитационных агентств Республики Казахстан (июнь 2012 года)

ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
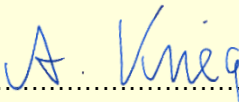И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

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ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

7М06201 Радиотехника, электроника и телекоммуникация

- Магистратура -

Казахский национальный университет имени аль-Фараби

Аккредитация действительна до 30 Сентября 2031.

Байройт, 5 Июня 2025

Профессор, Др. Алоис Криг
Председатель Аккредитационной Комиссии

N. 00100399-250154-0

*Зарегистрированное общество ACQUIN внесено в Европейский Регистр EQAR (апрель 2009 года) и
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ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
И ОБЕСПЕЧЕНИЯ КАЧЕСТВА

ACQUIN

ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

8D06201 РАДИОТЕХНИКА, ЭЛЕКТРОНИКА И ТЕЛЕКОММУНИКАЦИЯ

- ДОКТОРАНТУРА -

КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ АЛЬ-ФАРАБИ

АККРЕДИТАЦИЯ ДЕЙСТВИТЕЛЬНА ДО 30 СЕНТЯБРЯ 2031.

БАЙРОЙТ, 5 ИЮНЯ 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250155-0

*Зарегистрированное общество ACQUIN внесено в Европейский Регистр EQAR (апрель 2009 года) и
в Национальный реестр аккредитационных агентств Республики Казахстан (июнь 2012 года)*

ИНСТИТУТ АККРЕДИТАЦИИ, СЕРТИФИКАЦИИ
и ОБЕСПЕЧЕНИЯ КАЧЕСТВА
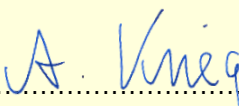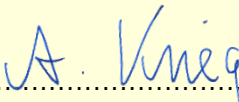
ACQUIN

ПРИСУЖДАЕТ СЕРТИФИКАТ КАЧЕСТВА

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Accreditation, Certification and Quality Assurance Institute

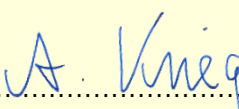**ACQUIN**

ПО ОБРАЗОВАТЕЛЬНОЙ ПРОГРАММЕ

7M06101 Вычислительная лингвистика

- Магистратура -

Казахский национальный университет имени Аль-Фараби

Аккредитация действительна до 30 Сентября 2031.

Байройт, 5 Июня 2025

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ПРОФЕССОР, ДР. АЛОИС КРИГ
ПРЕДСЕДАТЕЛЬ АККРЕДИТАЦИОННОЙ КОМИССИИ

N. 00100399-250156-1

Accreditation Report

Programme Accreditation at the

Al-Farabi Kazakh National University
Republic of Kazakhstan

6B06102 Information Systems (Bachelor), 7M06102 Information Systems (Master), 8D06101 Information Systems (PhD), 7M06101 Computational Linguistics (Master), 8D06102 Computer Engineering (PhD), 8D06103 Computer Science (PhD), 8D06105 Systems Engineering (PhD), 6B05304 Physics (Bachelor), 7M05308 Physics (Master), 7M01501 Physics (pedagogical) (Master), 6B06201 Radioengineering, Electronics and Telecommunication (Bachelor), 7M06201 Radioengineering, Electronics and Telecommunication (Master), 8D06201 Radioengineering, Electronics and Telecommunication (PhD)

I   Procedure

Date of contract: 09 October 2023

Date of the submission of self-assessment report: 01 November 2024

Date of site visit: 12 – 13 December 2024

Attendance by ACQUIN office: Svitlana Kondratova, Maria Zinsmeister

Accreditation decision: 05 June 2025

Peer review experts:

- **Prof. Vjačeslavs Bobrovs,** Director of the Institute of Photonics, Electronics and Telecommunications, Riga Technical University, Latvia

- **Assoc. Prof. Madina Ipalakova,** Head of Department of Computer Engineering**,** The International University of Information Technology, Almaty, Kazakhstan

- **Assemgul Kissabekova,** PhD Technical Physics, Vice Dean for Academic Affairs, Higher school of natural science, Margulan University, Pavlodar, Kazakhstan

- **Assoc. Prof. Assel Mukasheva,** Information Systems, Kazakh-British Technical University, Almaty, Kazakhstan

- **Assoc. Prof. Maciej Ogrodniczuk,** Head of the Department of Language Modelling, Institute of Computer Science, Polish Academy of Sciences, Warsaw, Poland

- **Prof. Sebastian Schroeter,** Professor of Systems and Software Engineering, Landshut University of Applied Sciences, Germany

- **Prof. Tilo Wettig,** High Energy Physics, University of Regensburg, Germany

- **Prof. Dr. Michael Schulz,** Managing Director of Bachmann Monitoring GmbH, Halle (Saale), Germany

- **Bexultan Yerzhanov,** Master student Informationsystems, L. N. Gumilev Eurasian National University (ENU), Astana, Kazakhstan

The **Assessment Report** of the peer-review experts is **based on** the self-assessment report of the Higher Education Institution (HEI) and extensive discussions with the HEI management, deans and/or heads of the departments, heads of study programme(s), lecturers, staff representatives, students, and alumni.

The basis of the **Assessment Criteria** is part 1 of the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG) in the current official version. For PhD study programmes the Salzburg Recommendations are considered additionally. At the same time the national context, particularly the national regulations regarding the establishment of study programmes, are taken into account.

Content

II   Introduction

The experts would like to thank the representatives of the HEI as well as students that they have taken part in the discussions and willingly shared information and their views during the site visit. The discussions are valuable not only for the assessment of the institution, but also for a better understanding of the legal and sociocultural context of the local higher education system.

Evaluation basis for the peer-review experts is the self-assessment report of the HEI as well as intensive discussions during the site visit with the HEI management, deans and/or heads of the departments, heads of the study programmes, study programmes coordinators, teachers, lecturers, administrative staff, students, and graduates.

Main objective of the accreditation procedure is to assess the quality of the study programmes and compliance with the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG). The ESG standards are applied as main assessment criteria in the international accreditation procedure. They are completed with criteria for structured doctoral programmes (Salzburg Recommenda-tions). In addition, the respective country-specific criteria and standards are taken into account.

A group of experts was set up, which ensured that all areas relevant to the accreditation procedure (e.g. legal, structural, social etc. aspects) as well as the ESG, the Salzburg Recommendations,and national criteria were considered. The peer-review experts include professors, representatives of the professional practice and the student representative. A certificate with the ACQUIN seal is awarded upon accreditation of the study programmes.

1   Short profile of HEI

Al-Farabi Kazakh National University, also known as KazNU, is a leading multidisciplinary university located in the Republic of Kazakhstan. Established in 1934, the university is set to celebrate its 90th anniversary in 2024.

KazNU offers 573 educational programs, including 149 bachelor's, 283 master's, and 141 doctoral programs, with more than 27,000 students enrolled. It is focused on integrating scientific activity and the educational process at all levels of higher and postgraduate education. The university has a strong emphasis on internationalization, with over 430 international agreements in place, facilitating mobility and joint programmes with partner universities.

KazNU is committed to transforming into a world-class research university and has a strong focus on scientific and innovative infrastructure. The university has seen significant growth in

its contingent of foreign students and has actively engaged foreign professors and scientists from various countries.

The university has 16 faculties and 71 departments, covering a wide range of academic disciplines and fields of study. It has a highly qualified teaching staff of 2,200 persons, including 11 Academicians of the National Academy of Sciences of the Republic of Kazakhstan, 3 Academicians of the International Academy of Higher Education of the Republic of Kazakhstan, 8 Academicians of the Academy of Sciences of Higher Education of the Republic of Kazakhstan, 7 Corresponding Members of the National Academy of Sciences of the Republic of Kazakhstan, 371 Doctors of Science, 825 Candidates of Science, and 472 PhDs, along with 313 administrative personnel.

The Faculty of Information Technology was opened in 2018. It consists of four departments: Information Systems, Computer Science, Artificial Intelligence and Big Data, Cybersecurity and Cryptology.

The Faculty of Physics has existed since 1934, initially as a department of the Faculty of Physics and Mathematics. In 1959, the Physics Department of the Faculty of Physics and Mathematics was transformed into an independent faculty. It consists of 5 departments: Theoretical and nuclear physics; Thermophysics and technical physics; Plasma physics, nanotechnology and computer physics; Solid state physics and technologies of new materials; Electronics and astrophysics.

2 General information on the study programmes

Higher education Institute (HEI)	NJSC «Al-Farabi Kazakh National University»
Faculty	- Faculty of Information technologies - Faculty of Physics and technology
Location	Republic of Kazakhstan, 050040, Almaty, al-Farabi Ave., 71

Study programme		6B06102 Information Systems (Bachelor)		6B05304 Physics (Bachelor)		6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)	
Faculty		Faculty of Information Technologies		Faculty of Physics and Technology			
Date of introduction		2019					
Subject field (multiple classifications possible)		6B061 Information and Communication Technologies		6B053 Physical and Chemical Sciences		6B062 Telecommunications	
Regular study duration		8		8		8	
Number of ECTS		240		240		240	
Capacity per year		150		1300		600	
Number of students currently enrolled	1st	351	89	240	77	256	83
	2nd		88		98		133
	3rd		113		29		14
	4th		61		36		26
Average number of graduates per year	2020	76		44		124	
	2021	184		74		140	
	2022	240		78		194	
	2023	207		93		111	
	2024	39		15		33	
Tuition fees		1,100,000 KZT		1,100,000 KZT		1,100,000 KZT	
Type of studies		Full-time					

Study Programme		7M06102 Information Systems (Master)		7M06101 Computational Linguistics (Master)		7M01501 Physics (pedagogical Master)		7M05308 Physics (Master)		7M06201 Radioengineering, Electronics and Telecommunication (Master)	
Faculty		Faculty of Information Technologies				Faculty of Physics and Technology					
Date of introduction		2019									
Regular study duration		4		4		4		4		4	
Number of ECTS		120		120		120		120		120	
Capacity per year		40		40		50		50		40	
Number of students currently enrolled	1st	15	5	2	-	46	18	12	8	1	8
	2nd		10		2		28		4	1	3
	3rd										
	4th				-						
Average number of graduates per year	2020	39		-		9		24		-	
	2021	47		2		7		32		32	
	2022	8		7		3		22		20	
	2023	6		5		17		13		5	
	2024	5		4		26		6		5	
Tuition fees		1,400,000 KZT		1,400,000 KZT		1,400,000 KZT		1,400,000 KZT		1,400,000 KZT	
Type of studies		Full-time									

Study programme		8D06101 Information Systems (PhD)		8D06102 Computer Engineering (PhD)		8D06103 Computer Science (PhD)		8D06105 Systems Engineering (PhD)		8D06201 Radio-Engineering, - Electronics and Telecommunication (PhD)	
Faculty		Faculty of Information Technologies								Faculty of Physics and Technology	
Date of introduction		2019									
Regular study duration		6		6		6		6		6	
Number of ECTS		180		180		180		180		180	
Capacity per year		1-4		1-4		1-4		1-4		5-6	
Number of students currently enrolled	1st	2024	4	4	1	5	4		1		3
	2nd	2023	3		2		0		0		1
	3rd	2022	1		1		1	2	1	8	4
	4th	2021	1						0		
Average number of graduates per year	2020	4		0		4		0		0	
	2021	3		0		0		0		0	
	2022	-		1		1		3		11	
	2023	1		1		1		1		3	
	2024	1		1		2		0		2	
Tuition fees		2,500,000 KZT		2,500,000 KZT		2,500,000 KZT		2,500,000 KZT		2,300,000 KZT	
Type of studies		Full-time									

III   Implementation and assessment of the criteria

1   ESG Standard 1.1: Policy for quality assurance

> **Institutions should have a policy for quality assurance that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes, while involving external stakeholders.**

1.1   Implementation

The Quality Assurance Policy defines the basic concepts, approaches, tasks, procedures and criteria for ensuring the quality of teaching and learning at KazNU. It is carried out according to the following guidelines at the university: the Academic Policy, the Regulations on the procedure for the development and approval of educational programmes, the Academic Integrity Policy, the Policy for assessing learning outcomes and other documents, and the Development programme of the NJSC "al-Farabi Kazakh National University" for 2022-2026.

According to the university, for the effective management, a quality management system (QMS) is operating, which was developed on the basis of international standards ISO 9001. It has a certificate of compliance with the requirements of ISO 9001:2015, which was recertified in 2021 by the certification association Russian Register. Within the framework of the QMS, the processes of educational, research, innovation, social, educational activities are regulated by documented procedures, which include the Quality Assurance Policy. To achieve the goals and vision of the university, the policy and documented procedures have an official status and are posted on the portal of the university.

The university has a published quality assurance policy reflecting the institutional vision and strategy that is part of its strategic management made available on the official website. It corresponds to the main goals and objectives of the university, includes a commitment to meet requirements and continually improve quality performance and it creates the basis for setting and analysing quality goals. The university reports that it is communicated to internal and external stakeholders as well as systematically analysed and improved.

The implementation of the policy in the field of quality assurance of the university is aimed at ensuring the high qualification of graduates and their competitiveness, as well as improving the quality of education and research activities and meeting the students' requirements. The implementation is ensured by the following components: planning activities for the provision of educational services; monitoring of scientific research; internal evaluation of the effectiveness of the Educational Programme (EP) and scientific research, external evaluation of the effectiveness of the EP and scientific research.

The main provisions of the Policy are detailed in the Academic Policy of the University, the Rules of academic integrity, the Internal quality assurance standards, the Indicative plans of faculties and departments, and other regulating documents. The internal quality assurance policy of the university focuses on the two dimensions quality of the educational process and quality of teaching.

The university policy in the field of quality assurance complies with international approaches and is based on the 'Standards and Guidelines for Quality Assurance in the European Higher Education Area' (ESG). The university emphasizes the involvement of the administrative and teaching staff and learners to a successful quality culture.

All stakeholders are informed about the results of the implementation of the quality assurance policy. There is access to the University Development Strategy, Quality Assurance Policy, Academic Policy, which are posted on the websites of the university, faculty and department and it is available to all university members.

Information resources for external and internal stakeholders include the newspaper "Kazakh University", which allows to familiarize stakeholders and the general public with scientific and cultural achievements. Feedback from stakeholders is carried out through the rector's blog and constant monitoring of the educational environment. Students are informed through the association of student organizations. The Committee of Youth Organizations is part of the structural unit of the university and works with youth organizations.

1.2 Assessment

The formal policy for quality assurance of KazNU is well designed and publicly available. The university is committed to maintaining exceptional educational standards. The Al-Farabi KazNU's Quality Management System and its processes, developed on the basis of international standards, forms the core of the internal quality assurance system. This includes resource and process management, which are continuously observed, analysed, and improved according to the needs by review boards on all relevant levels. The defined processes are well-suited to ensure a high quality at all levels. The quality assurance policy has been developed through a collaborative effort involving all relevant internal stakeholders (administrative staff, faculty members and students, students, and university leadership). In addition, external stakeholders are engaged through various tools of the university, which promotes a collaborative approach to quality management and ensures a transparent pursuit of excellence.

According to the report, the university's quality management strategy is based on systematic monitoring, starting with the definition and achievement of objectives. Al-Farabi University regularly updates its strategic objectives to reflect changes in the external environment and new

public policy priorities. These actions enable the University to respond to the needs of its stakeholders and to continue to provide high quality education and related services.

A good indicator of the effectiveness of KazNU's quality assurance processes is its high position in national and international rankings.

The university's management strategy aims to ensure total excellence in all its directions, emphasising continuous monitoring, scientific innovation and regular improvement, where the University strives to provide an exceptional educational experience for its students and create a favourable learning environment for its faculty members and staff. The university management ensures the availability of resources necessary for solving tasks and achieving university goals. These resources include those required for the operation and improvement of the management system and meeting the needs of educational service consumers. KazNU's programmes are effectively evaluated both internally and externally. The internal quality assurance system is formalised and documented. The activities of the university are transparent and accessible to the public. The Academic Integrity Policy ensures the promotion of equal opportunities.

Quality assurance for doctoral programmes is similarly structured and embedded in the different levels of decision-making and programme development. A key component is student surveys, both on the curriculum of the structured programmes and on the teaching staff.

1.3 Conclusion

The criterion is **fulfilled.**

2 ESG Standard 1.2: Design and approval of programmes

> **Institutions should have processes for the design and approval of their programmes. The programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes. The qualification resulting from a programme should be clearly specified and communicated, and refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.**

2.1 Implementation

Educational programmes at the University are developed and updated in accordance with the order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022, No. 2 "On the Approval of State Compulsory Standards for Higher and Postgraduate Education".

The stages of developing higher and postgraduate educational programmes (bachelor's, master's, and PhD) include planning, designing, developing structural elements, and evaluation.

The EP is developed by the Academic Committee. The development of higher and postgraduate educational programs involves developers and coordinators from the teaching staff of the departments/faculties, the Office for Educational Program Design under the Department of Academic Affairs, Academic Committees for training directions, as well as the main consumers of educational services—employers and students.

One of the principles of developing educational programs at the University is the modular structure. The curriculum of the University's educational programmes is developed within the framework of a competency-based model of specialist training and includes general mandatory modules, mandatory modules in the specialty and elective modules for a specific specialization.

Work programmes are mandatorily developed for all courses, while internship and research programmes are created for practical training and scientific research, respectively. These programmes define the content, sequence, forms, and methods for mastering academic disciplines, internships, and scientific research, as well as specify the set of competencies to be acquired. The curriculum for each level of study includes mandatory subjects and elective courses, as well as the distribution of study time between lectures, practical classes and independent work. The educational programme includes possibilities for academic mobility.

The regular study period of the bachelor's degree programme is 4 years and comprises of 240 ECTS-points. The curriculum includes the following components: (1) Cycle of general education disciplines (56 ECTS): Obligatory component (51 ECTS) and Elective component (5 ECTS); (2) Cycle of core disciplines (112 ECTS): University component (87 ECTS), Elective component (25 ECTS); (3) Cycle of major disciplines (64 ECTS): University component (44 ECTS), Elective component (20 ECTS); (4) Final attestation (8 ECTS). For bachelor's students, educational (2 ECTS), industrial (16 ECTS), and pre-graduation (8 ECTS) internships are organized.

The general education disciplines are identical for all bachelor programmes and include following compulsory subjects: History of Kazakhstan, Philosophy, Module of Socio-political Knowledge, Foreign Language, Kazakh (Russian) Language, Information and Communication Technologies, and Physical Training. In addition to the compulsory general education disciplines, students of the educational programme Information Systems (Bachelor) may choose one elective from the following catalogue: al-Farabi and Modernity, Abai 's Teaching, Legal Bases of Corruption Control, Ecology and Human Life Safety, Entrepreneurship, Scientific Research Methods, Basic of Financial Literacy.

The regular study period of the master's degree in a full-time studies is 2 years. A master's student must complete 120 ECTS, and the curriculum includes the following components: (1) Cycle of core disciplines (35 ECTS): University component (20 ECTS), Elective component

(15 ECTS); (2) Cycle of major disciplines (53 ECTS): University component (30 ECTS), Elective component (15 ECTS); (3) Research work of the master student's (24 ECTS); (4) Final attestation (8 ECTS). Master's students participate in pedagogical practice (4 ECTS) and research practice (8 ECTS).

The doctoral programme is designed for 3 years full-time. A doctoral student must complete 180 ECTS, and the curriculum includes the following components: (1) Cycle of core disciplines (20 ECTS): University component (15 ECTS), Elective component (5 ECTS); (2) Cycle of major disciplines (25 ECTS): University component (20 ECTS), Elective component (5 ECTS), (3) Research work of the master student's (123 ECTS); (4) Final attestation (12 ECTS).

The internship in the PhD programmes is divided into three stages: Pedagogical Practice (10 ECTS), Research Practice (10 ECTS) and Scientific Internship (10 ECTS). At the end of the practice, master`s students present a report detailing the outcomes of their completed work.

The University fosters a dynamic research environment, where doctoral students are full-fledged participants in scientific projects and contribute to the development of priority scientific areas in Kazakhstan. KazNU actively supports the academic mobility of doctoral students by providing access to modern laboratories and international research databases. In the 2023 academic year, 25% of doctoral students completed internships abroad, including at leading universities in Europe and Asia.

Doctoral students at KazNU are trained to produce original research that contributes both to the academic community and to addressing societal challenges. In 2023, the number of scientific publications in peer-reviewed journals, including 13 indexed in Scopus and Web of Science, authored by graduates of the Faculty of Informatics and Technology of KazNU is 28. The number of scientific publications of graduates of the Faculty of Physics and Technology in peer-reviewed journals is 36, including 40 in journals indexed in Scopus and Web of Science. KazNU's doctoral students are encouraged and supported in disseminating their research widely through participation in international conferences, seminars, and academic networks.

Currently, KazNU supports more than 1,550 doctoral students across various disciplines, including over 141 specialized doctoral programmes that cater to the evolving needs of science and industry. These programmes reflect the university's commitment to fostering interdisciplinary research and ensuring that doctoral candidates engage with innovative, cross-cutting areas of study.

The academic workload for students at the University is measured in credits. The workload of one Kazakh academic credit (30 academic hours) corresponds to 1 ECTS credit.

6B06102 Information Systems (Bachelor), 7M06102 Information Systems (Master), 8D06101 Information Systems (PhD)

The Department of Information Systems was established based on the Department of Mathematical Support for Computers, which was founded in 1973. In November 2001, the Department of Computers and Mathematical Software, Mathematical Cybernetics was divided into the Department of Mathematical Cybernetics and the Department of Information Systems and Computer Science. The Information Systems programmes emerged in response to the growing informatization of all sectors of the national economy. In recent years, disciplines related to business processes in line with the ACM 2020 standard have been incorporated into the Information Systems educational programmes.

6B06102 Information Systems (Bachelor)

The educational programme 6B06102 - Information Systems is delivered by the Department of Information Systems within the Faculty of Information Technology, with courses available in Russian, Kazakh, and English. It was included in the Register of Educational Programmes of the Unified Higher Education Management System (ESUVO) (since 2023, in the Unified Platform of Higher Education EHEA) in 2019, with subsequent annual updates based on employer feedback and updates to the State Educational Standard of Higher Education of the Republic of Kazakhstan. The most recent update was in 2024.

The purpose of educational program 6B06102 - Information Systems is the training of highly qualified specialists in the creation, implementation and maintenance of various classes of information systems with high ethical standards of behaviour in society and the specialty, capable of improving their level of education throughout their lives.

The curriculum includes following core disciplines: Mathematic-1, Mathematic-2, Operating systems, , Algorithms, Data Structures and Programming, Fundamentals of Computer Networks and Telecommunications, Object-Oriented Programming, Programming Technologies, Business-1 (Management and marketing), Fundamentals of machine learning, Database Theory, Foundations of information systems, Business-2 (Finance and Account). Students can also choose between two elective modules: Module of Programming and IT-Infrastructure (including disciplines Programming on Java Language, IT-Infrastructure, Network administration) and Module of Data Processing and NLP Basics (including disciplines Fundamentals of Dataset Development and Natural Language Processing, NLP Basics, NLP technologies in Artificial Intelligence).

The curriculum comprises following major disciplines: System analysis and design of IS, Foundation of SQL language, Models and methods of intellectual information systems, Foundation of mobile applications, Basics of Computer Graphics, Web-programming, Basics of Information

Protection. Students can also farther specialise by choosing four of eight major electives: IS Project Management, Security Control Systems, Search and retrieval of data, Introduction to NLP Statistical Methods, Cloud technology, Data science, Fundamentals of Neural Machine Translation, Fundamentals of speech recognition.

The educational programme also offers educational practice, professional practice opportunities, pre-diploma internships, and concludes with writing and defending of the final thesis.

7M06102 Information Systems (Master)

The educational programme 7M06102 – Information Systems is implemented by the Department of Information Systems within the Faculty of Information Technology. The language of studying is Russian, Kazakh, and English.

The master's programme aims to provide graduates with deep engineering and scientific knowledge and broad professional skills for designing, developing, implementing, and developing information systems for various business processes in the manufacturing and non-manufacturing spheres. An information systems (IS) specialist has a wide range of responsibilities related to ensuring the operation of information systems in an organization. These responsibilities include managing information systems, consulting on the use of information systems and programs, ensuring information security, developing and testing information systems, monitoring the operation of information systems, analysing productivity and resource use, and evaluating new technologies and their implementation in the organization to increase the efficiency of information systems.

The purpose of the EP is high-quality training of research and educational personnel in the field of the information systems capable: to interpret and generalize deep modern knowledge of the latest theories in the field of design, development and management of information systems; to independently carry out scientific research; to integrate knowledge of related scientific areas for the solution of problems in the unfamiliar environment; to interpret results of own scientific research and to present them both to specialists, and nonspecialists; to provide effectiveness of educational process on the basis of classical and innovative methods of teaching; to build own program of further training and scientific and innovative activity.

The core disciplines such as History and Philosophy of Science, Foreign Language (professional), Pedagogy of Higher Education, Psychology of Management and Pedagogical Practice are identical for all master programmes. Core courses offer choices in areas such as Architecture of Information Systems (including disciplines Architecture of information systems, Information Technologies Audit, Data Warehouse Design and Analysis Techniques) and Corporate IS (including disciplines Enterprise Models of IS, Human-Machine Interaction, Administration of Corporate Networks).

The curriculum comprises following major disciplines: Researches in IS (including disciplines Organization and Planning of Scientific Research (in English), Analysis, Modelling and Design of IS), Business and IT (including disciplines Strategic Information Systems Management, Project and Change Management) and Data Analysis (including disciplines Business Intelligence Systems, Blockchain Technologies). Students can also farther specialise by choosing one of two elective modules: IS of Management (including disciplines Information systems security management, Enterprise Resource Planning systems, Machine Learning) and IS Modelling (including disciplines Models and Methods of Support of Making Decision IS, Models and Methods of Neural Networks, Web Search Technologies and Systems).

The internship is divided into two stages: Pedagogical Practice (4 ECTS) and Research Practice (8 ECTS). At the end of the practice, master`s students present a report detailing the outcomes of their completed work.

Master's research includes a research seminar, a dissertation, a research internship and publication in the proceedings of international conferences. The educational programme concludes with writing and defending of the final thesis.

8D06101 Information Systems (PhD)

The educational programme 8D06101 – Information Systems is delivered by the Department of Information Systems within the Faculty of Information Technology.

The purpose of the EP is the training of scientific and pedagogical personnel in the field of information systems that are able to conduct applied experimental research, lead research projects, design offices, research departments, conduct educational activities, present scientific achievements.

The core disciplines such as Academic Writing, Scientific Research Methods and Pedagogical Practice are identical for all doctoral programmes. In addition, students of educational programme 8D06101 – Information Systems may choose one elective from the following catalogue: Neural Networks and Their Appliance in Practical Problems, Semantics in Natural Languages Processing, Parallel and Distributed Database Systems and Applications, Design Patterns of IS Application, Data Mining Technologies, IT Project Management, The Use of Blockchain Technology in IS.

The major disciplines include Optimization Methods in Information Systems and Intellectual Data Analysis in IS. PhD students can farther specialise by choosing one of seven electives, such as: Application Branch of Intellectual Systems, System and Information Integration, Models and Methods of IS Managerial Tasks, Big Data and Visual Analytics, Information Economics and Information Systems, Quantum Computing, The Organization's Strategy and Information Security Management.

Doctoral research includes a research seminar, a graduate seminar, participation in international scientific conferences, publication of the main scientific results of the dissertation in scientific journals, a scientific internship, and the implementation of a doctoral thesis.

7M06101 Computational Linguistics (Master)

The educational programme 7M06101 – Computational was developed and implemented at the Department of Information Systems starting from the 2019-2020 academic year.

The EP aims to deepen scientific knowledge of current challenges in text processing and the automation of linguistic processes in artificial intelligence, interpret and apply advanced research knowledge of theories and technologies in computational linguistics, create and process various digital language resources, and develop and apply various applied technologies in artificial intelligence. It focuses on training competitive specialists capable of developing innovative solutions in linguistic technologies and information systems, engage in scientific research and pedagogical activities, and actively contribute to the development of artificial intelligence technologies related to natural languages.

A key advantage of the programme, as pointed out by the university, is the integration of knowledge from linguistics and information technology, allowing graduates to master modern methods and tools for text processing in various languages. The programme includes the use of automated translation tools, the creation of language corpora, and the analysis and processing of texts, which enables graduates to become in-demand specialists in both scientific and practical fields.

The EP combines theoretical courses with practical applications. Students study disciplines such as morphological, syntactic, and semantic analysis of languages, the development of linguistic resources, and the creation of parallel corpora for Kazakh and foreign languages. Practical experience includes research work, participation in scientific seminars, and conducting research in natural language processing.

The core disciplines such as History and Philosophy of Science, Foreign Language (professional), Pedagogy of Higher Education, Psychology of Management and Pedagogical Practice are identical for all master programmes. Core courses offer choices in areas such as Computer Processing of Natural Languages (including disciplines Language Resources, Statistical Methods for Natural Language Processing, Information Technology for NLP) and Computational Technologies (including disciplines Computational Morphology, Language Analysis, Speech Processing).

The curriculum comprises following major disciplines: Research in Computational Linguistics (including disciplines Organization and Planning of Scientific Research (in English), Formal Grammars), Natural Language Programming Processing (including disciplines Programming

Technologies for NLP, Machine Learning Methods in Natural Language Processing) and Applied Linguistics (including disciplines Machine Translation Technologies, Ontologies and Semantic Technologies). Students can also farther specialise by choosing one of two elective modules: Methods and Tools for Data Mining (including disciplines Methods for Information Retrieval and Extraction, Data Mining, Natural Language Understanding) and IS Modelling (including disciplines Models and Methods of Support of Making Decision IS, Models and Methods of Neural Networks, Web Search Technologies and Systems).

The internship is divided into two stages: Pedagogical Practice (4 ECTS) and Research Practice (8 ECTS). At the end of the practice, master`s students present a report detailing the outcomes of their completed work.

Master's research includes a research seminar, a dissertation, a research internship and publication in the proceedings of international conferences.

The EP prepares graduates to work in research and educational institutions, software development companies, automated translation firms, and technology companies specializing in text processing and the creation of language resources. Students can develop expertise in areas such as automated translation systems, intelligent text processing systems, and academic and scientific activities.

8D06102 Computer Engineering (PhD)

The educational programme 8D06102 – Computer Engineering is the updated version of the previous programme that has been running at the Department of Computer Science since its establishment in November 2001 (previously called "Computing Machinery and Software"). Academic materials are available in three languages.

The purpose of EP is the formation of qualified specialists in the field of computer engineering, the training of doctoral students in the fields of distributed intelligent systems, advanced parallel programming, machine learning, artificial neural networks, mobile and wireless communications, computer communications networks, advanced cryptography, computer network security, FPGA design. Based on their knowledge and skills, the graduates will be able to use theoretical and practical concepts in order to apply and improve methods for developing software and hardware, methods for designing software complexes in the fields of science, management, industry and teaching.

The core disciplines such as Academic Writing, Scientific Research Methods and Pedagogical Practice are identical for all doctoral programmes. In addition, students of EP 8D06102 – Computer Engineering may choose one elective from the following catalogue: Advanced Parallel Programming, Performance Analysis of Computer and Communication Systems, Artificial Neural Networks.

The major disciplines include Advanced Machine Learning and Advanced Cryptography. PhD students can also choose one of five electives that allow them to focus on specific aspects of networking and parallel computing, such as: Mobile and Wireless Communications, Computer Communication Networks, Computer Networks Security, Distributed Structure of Computing Systems and Parallel Computer Architecture.

Doctoral research includes a research seminar, a graduate seminar, participation in international scientific conferences, publication of the main scientific results of the dissertation in scientific journals, a scientific internship, and the implementation of a doctoral thesis.

8D06103 Computer Science (PhD)

The educational programme 8D06103 – Computer Science is the updated version of the previous programme, implemented at the Department of Computer Science in 2019.

The purpose of the EP is to provide high-quality training of highly qualified scientific and pedagogical personnel for the system of higher and postgraduate education and the research sphere. It aims to produce a specialist who is capable of: systematizing and interpreting scientific theories and concepts of the newest areas of computer science in order to further apply this knowledge in the implementation of the dissertation research; contributing their own original research to expanding the boundaries of knowledge in the field of computing technology; carrying out independent scientific research on the basis of material adequate to the object of study, the choice of methodology with a projection on the development of promising new areas of computer science; generating ideas, predicting the results of innovation, lead complex industrial and scientific processes; evaluating and determining the significance of a product of one's own and other scientific activities, reasonably representing and defending one's own scientific opinion in scientific discussions.

The core disciplines such as Academic Writing, Scientific Research Methods and Pedagogical Practice are identical for all doctoral programmes. In addition, PhD students may choose one elective from the following catalogue: Numerical Methods for Scientific Computing Tasks, Advanced Machine Learning, Information Resource Modelling.

The major disciplines include Advanced Algorithms and Their Complexity and Research and Analysis of Algorithms. PhD students can farther specialise by choosing one of six electives, such as: High-Performance Programming with Multi-Core and Graphics Processors, Computational Algorithms of Engineering Problems of Hydrodynamics on High Performance Systems, Deep Learning, Big Data Analytics, Reliability in Distributed Systems, High Performance Computing Models.

Doctoral research includes a research seminar, a graduate seminar, participation in international scientific conferences, publication of the main scientific results of the dissertation in scientific journals, a scientific internship, and the implementation of a doctoral thesis.

8D06105 Systems Engineering (PhD)

The educational programme 8D06105 – Systems Engineering is delivered by the Department of Information Systems within the Faculty of Information Technology.

The purpose of the EP is the formation of qualified specialists in the field of computer engineering, the training of doctoral students in the fields of distributed intelligent systems, advanced parallel programming, machine learning, artificial neural networks, mobile and wireless communications, computer communications networks, advanced cryptography, computer network security, FPGA design. Based on their knowledge and skills, they will be able to use theoretical and practical concepts in order to apply and improve methods for developing software and hardware, methods for designing software complexes in the fields of science, management, industry and teaching.

The core disciplines such as Academic Writing, Scientific Research Methods and Pedagogical Practice are identical for all doctoral programmes. In addition, students of EP 8D06103 – Computer Science may choose one elective from the following catalogue: Advanced Parallel Programming, Performance Analysis of Computer and Communication Systems, Artificial Neural Networks.

The major disciplines include Advanced Machine Learning and Advanced Cryptography. PhD students can farther specialise by choosing one of five electives, such as: Mobile and Wireless Communications, Computer Communication Networks, Computer Networks Security, Distributed Structure of Computing Systems, Parallel Computer Architecture.

Doctoral research includes a research seminar, a graduate seminar, participation in international scientific conferences, publication of the main scientific results of the dissertation in scientific journals, a scientific internship, and the implementation of a doctoral thesis.

6B05304 Physics (Bachelor)

The educational programme 6B05304 – Physics is delivered by the Department of Theoretical and Nuclear Physics within the Faculty of Physics and Technology, with courses available in Russian, Kazakh, and English.

The purpose of EP is the training of highly qualified specialists in the field of physics, with strong knowledge of physics and able to clearly and easily present the basic knowledge of the fundamental classical laws of physics, including its various sections and areas, problems and principles of theoretical and experimental physics; able to use modern knowledge in the field

of theoretical physics to solve applied and innovative problems in research activities, able to solve various problems of physics; are able to conduct research and demonstrate an understanding of the General structure of physics and the close logical relationship of its various sections and areas, to possess the technology of laboratory research; capable of collecting and interpreting scientific information; and able to perform independent research work.

The curriculum includes following core disciplines: Mechanics, Molecular Physics, Mathematical analysis, Analytical geometry and linear algebra, Basis of Vector and Tensor Analysis, Differential and Integral Equations, Theoretical mechanics, Methods of mathematical physics, Electricity and Magnetism, Optics, Astrophysics, Atomic Physics, Thermodynamics and Statistical Physics. Students can also choose between two elective modules: Theoretical Physics 1 (including disciplines Electrodynamics, Selected Chapters of Theoretical Physics, General Relativity) and Theoretical Physics 2 (including disciplines Electromagnetic Field Theory, Mathematical Methods of Theoretical Physics, Additional Chapters of Mathematical Physics). Additionally, there is also a choice between Radiophysics and Electronics and Nuclear Physics, as well as between Basis of Electronics and Nuclear Physics at Low Energies.

The curriculum comprises following major disciplines: Computer Simulation of Physical Processes, Computer Simulation of Theoretical Physics, Introduction to the nuclear theory, Quantum Mechanics 1 & 2, Condensed Matter Physics, Special Theory of Relativity. Students can also farther specialise by choosing three of eight major electives: Computer Modelling in GR, Mathematical Methods in GR, Relativistic Quantum Theory, Additional Chapters of Quantum Mechanics, Computational Methods in GR, Additional Chapters of the General Theory of Relativity, Fundamentals of Quantum Field Theory, Introduction to scattering theory.

The EP also offers educational practice, professional practice opportunities, pre-diploma internships, and concludes with writing and defending of the final thesis.

Graduates are prepared for professional activities in leading research institutes and laboratories focused on current issues in physics, using modern computational software packages and modelling tools.

7M05308 Physics (Master)

The educational programme 7M05308 – Physics is delivered by the Department of Theoretical and Nuclear Physics within the Faculty of Physics and Technology

Purpose of EP is to provide training for competitive specialists who are able to learn new knowledge objects, as well as generate new knowledge in the field of physics, formulate scientific and production problems in a professional language and solve them with the help of modern methods and technologies.

The core disciplines such as History and Philosophy of Science, Foreign Language (professional), Pedagogy of Higher Education, Psychology of Management and Pedagogical Practice are identical for all master programmes. Core courses offer choices in areas such as Modern Approaches in Theoretical Physics (including disciplines The Problems of Stability in General Theory of Relativity (GTR), Super Symmetry in the Theory of Elementary Particles, Introduction to Quantum Chromodynamics) and Modern Aspects in Theoretical Physics (including disciplines The Modern Problems in General Theory of Relativity (GTR), Group and Super Symmetry Theory, Introduction to the Mathematical Apparatus of Quantum Chromodynamics).

The curriculum comprises following major disciplines: Introduction to the Quantum Theory of a Field, Nuclear Astrophysics, Basic Principles of Modern Physics, Organization and Planning of Scientific Research (in English), Computer Modelling of Multiparticle Systems, Approximate Methods in Theoretical Physics. Students can also farther specialise by choosing one of five elective modules: Modern Problems of Physics (including disciplines the Problems of Motion of Bodies in General Theory of Relativity (GTR), Quantum Theory of Scattering, Relativistic Astrophysics), Modern Methods in Thermal Physics (including disciplines Experimental Methods in Thermal Physics, 3D Simulation of Reacting Flows and Experimental Methods, Experimental Methods in Low Temperature Physics), Modern Physics of Plasma (including disciplines Collisional Processes in a Dense Plasma, Impulse Plasma Dynamics), Modern Physics of Dense Plasma), Modern Technologies in Medicine Physics (including disciplines Bioinformatics, Optics and Laser Physics in Medicine, Laser Technologies in Medicine), Modern Methods in Elementary Particle Physics (including disciplines Modern Methods of Quantum-Mechanical Modelling, Elementary Particle Physics, Kinematic Methods in Particle Physics).

The internship is divided into two stages: Pedagogical Practice (4 ECTS) and Research Practice (8 ECTS). At the end of the practice, master`s students present a report detailing the outcomes of their completed work.

Master's research includes a research seminar, a dissertation, a research internship and publication in the proceedings of international conferences. The educational programme concludes with writing and defending of the final thesis.

7M01501 Physics (pedagogical Master)

The educational programme 7M01501 – Physics (pedagogical Master) (formerly "6M01100 - Physics") has been implemented by the Department of Plasma Physics, Nanotechnology, and Computer Physics since 2011. It offers full-time study in three languages – Kazakh, Russian, and English.

The purpose of the EP is to train highly qualified and competitive physics teachers. These professionals will possess the competencies to systematically apply innovative educational

technologies to solve scientific, pedagogical, educational, methodological, and managerial is-sues in their teaching careers.

The core disciplines such as History and Philosophy of Science, Foreign Language (profes-sional), Pedagogy of Higher Education, Psychology of Management and Pedagogical Practice are identical for all master programmes. Core courses offer choices in areas such as Computer Technologies in Physical Science and Education (including disciplines Methodology of Physics Experiment in HES, Computer Technologies in Physical Science and Education) and Interdis-ciplinary connections of Physics (including disciplines Interdisciplinary Connections of Physics, Methods of Computer Simulation of Physical Processes).

The curriculum comprises following major disciplines: Organization and Planning of Scientific Research (in English), Actual Problems of Modern Physics, Modern methods of teaching in High Education Schools and Active methods in educational technologies. Students can also farther specialise by choosing one of two elective modules: Innovations in Teaching of Physics (including disciplines Entrepreneurship in Education and Physical Science, The Assessing Methods of Knowledge and Skills for Physics Learning Control) and Methodical Planning of the Course "Physics" (including disciplines Methodical Planning of the Course "Physics", Mod-ern Technologies for Online Teaching of Physics).

The internship is divided into two stages: Pedagogical Practice (5 ECTS) and Research Prac-tice (4 ECTS). At the end of the practice, master`s students present a report detailing the out-comes of their completed work.

Master's research includes a research seminar, a dissertation, a research internship and pub-lication in the proceedings of international conferences. The educational programme con-cludes with writing and defending of the final thesis.

Professional training in this field includes a variety of activities, professions, and qualification levels, such as: university teacher, college teacher, methodologist-organizer of educational processes, junior researcher. Key employers for graduates of this educational programme in-clude educational institutions, research institutes, and universities across the Republic of Ka-zakhstan.

6B06201 Radioengineering, Electronics and Telecommunication (Bachelor), 7M06201 Radioengineering, Electronics and Telecommunication (Master), 8D06201 Radioengi-neering, Electronics and Tele-communication (PhD)

The educational programmes 6B06201 – Radioengineering, Electronics and Telecommunica-tion, 7M06201 Radioengineering, Electronics and Telecommunication (Master) and 8D06201 Radioengi-neering, Electronics and Telecommunication (PhD) are delivered by the Depart-ment of Electronics and Astrophysics within the Faculty of Physics and Technology.

6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)

The purpose of the EP is to train qualified specialists in information and telecommunication technologies, capable of using the latest achievements in the field of radio engineering and telecommunications, possessing skills in working with electronic devices and instruments, technical maintenance of telecommunications equipment, data processing with a given degree of accuracy, able to develop recommendations for the operation and support of network communications equipment.

The programme encourages students to participate in international projects and competitions, helping to integrate them into the global scientific community and professional environment.

The curriculum includes following core disciplines: Mathematical Analysis, Linear Algebra and Analytic Geometry, Applied Physics 1 & 2, Basic of Radio Engineering and Telecommunication, Differential and Integral Equations, Theory of Probability and Mathematical Statistics, Electronics and Circuitry of Analogue Devices, Circuitry of digital devices, Theory of Electric Circuits 1 & 2 3 Theory of Electric Circuits, Programming and Data Structures, Microcontrollers and Microprocessors, Antenna-Feeder Devices. Students can also choose between two elective modules: Electronic systems programming (including disciplines Graphic Programming of Electronic Systems, Programming Logic Integrated Circuits, Network Programming), Cloud Computing and Communication (including disciplines Data Communication, Enterprise Wireless Networks, Data Storage Systems, Wireless Communication System).

The curriculum comprises following major disciplines: Mobile Communication Technologies, Wireless Sensor Networks, Theory of Electrical Communication, Digital Signal Processing, Information and Coding Theory, Fiber-Optic Communication Lines. Students can select electives in specialized areas, such as: IP Telephony and Packet-Switched Networks, Standardization and Metrology for the Design of Telecommunication Systems, Information Security in Telecommunication Networks, Radar and satellite communications.

The EP also offers educational practice, professional practice opportunities, pre-diploma internships, and concludes with writing and defending of the final thesis.

7M06201 Radioengineering, Electronics and Telecommunication (Master)

The purpose of the EP is to train scientific personnel in the field of radio engineering, electronics and telecommunications capable of mastering modern digital technologies, as well as generating new knowledge, conducting scientific research in research institutes, industrial centres in the field of radio engineering, electronics and telecommunications. Graduates will be able to formulate production problems in professional language and solve them using modern technology, having systemic skills related to solving scientific and applied problems in the field of

radio engineering, electronics and telecommunications; develop electronic devices and organize telecommunication networks.

The core disciplines such as History and Philosophy of Science, Foreign Language (professional), Pedagogy of Higher Education, Psychology of Management and Pedagogical Practice are identical for all master programmes. Core courses offer choices in areas such as Microelectronics and nanoelectronics (including disciplines Physical Processes of Nanoelectronics and Optoelectronics, Digital Integrated Circuits, Electronic Nanosensors) and Telecommunication Systems and Technologies (including disciplines Digital Information Transmission Systems, Modern Mobile Technology, Modern Wireless Technology).

The curriculum comprises following major disciplines: Organization and Planning of Scientific Research (in English), Analysis and Management of Research Projects, Methods and Algorithms for Signal Processing, Synchronization in Electronic Systems, Scientific and Technical Problems of Radio Engineering, Electronics and Telecommunications, Internet of Things and Network Technologies. Master's students can further specialise choosing one of the trajectories: Intellectual Systems and Networks (including disciplines Methods and Technologies of Artificial Intelligence, Self-learning Intelligent Systems and Networks, Neural Networks and Deep Learning) and Modern Technologies for Building Telecommunication Networks (including disciplines New Generation Network Technology, Modern Fibre Optic Transmission Systems, Methods of Information Security in Telecommunication Networks).

The internship is divided into two stages: Pedagogical Practice (4 ECTS) and Research Practice (8 ECTS). At the end of the practice, master`s students present a report detailing the outcomes of their completed work.

Master's research includes a research seminar, a dissertation, a research internship and publication in the proceedings of international conferences. The educational programme concludes with writing and defending of the final thesis.

8D06201 Radioengineering, Electronics and Tele-communication (PhD)

The objective of the EP is to ensure the training of highly qualified specialists in the field of radio engineering, electronics and telecommunications, possessing fundamental knowledge based on a solid experimental and theoretical foundation, the latest achievements of science, possessing the skills and abilities to conduct scientific research in the field of radio engineering, electronics and telecommunications, in demand in research institutes, scientific centres, design and engineering bureaus, firms and companies, educational institutions and government bodies of the relevant profile.

The core disciplines such as Academic Writing, Scientific Research Methods and Pedagogical Practice are identical for all doctoral programmes. In addition, PhD students may choose one

of two electives: Nanoelectronic Devices and Advanced Technologies for Ultra-Wideband Communications.

Major disciplines include Modern Theory of Information and Entropy and Nonlinear Signal Processing. PhD students can farther specialise by choosing one of two electives, such as: Intelligent Communication Technologies and Modern Technology of Highly Sensitive Sensors.

Doctoral research includes a research seminar, a graduate seminar, participation in international scientific conferences, publication of the main scientific results of the dissertation in scientific journals, a scientific internship, and the implementation of a doctoral thesis.

2.2 Assessment

Al-Farabi Kazakh National University aims to maintain and extend its leadership position among Kazakh universities, in particular in the areas of science and technology, and to improve the quality of education. The educational programmes under review are an integral part of these efforts, as they educate students in this core discipline and guide them towards research.

The expert group is very positive about the direct involvement of students and future employers in the design of programmes. Students are involved through feedback mechanisms; external stakeholders are involved in the design of the study programme by suggesting of new topics. They are also involved in round-table discussions to identify and solve problems in the implementation of the programmes. These discussions also include curators and advisors.

The procedure for the approval of educational programmes at KazNU is well established and includes the following steps: review by the Faculty Quality Committee; approval by the Faculty Academic Council; approval by the University's Methodological Work Service; approval by the Academic Committee; final approval by the Academic Council of the University.

The official approval process of the educational programmes is aimed at ensuring that the program is of high quality, relevant and consistent with the mission and goals of the educational institution. This rigorous and transparent process, involving all stakeholders, ensures the implementation and approval of the programme.

6B06102 Information Systems (Bachelor)

The educational programme 6B06102 – Information Systems aims at to train highly qualified specialists with a deep understanding of information technologies and systems, capable of solving complex problems and developing innovative solutions, and who will continue to improve their level of education throughout their lives. The learning outcomes are fully aligned with the requirements of the professional field, ensuring that graduates are well prepared for the demands of the industry. The educational programme covers skills in data analytics, project

management, artificial intelligence and information security, as well as other skills and competencies that employers require.

The educational programme is aimed at achieving the four goals of higher education of the Council of Europe: to provide students with a quality education that prepares them for sustainable employment, learning, personal development and active citizenship throughout their lives.

The programme structure and curriculum have been carefully designed to help achieve the goals of the educational programme. The curriculum consists of several core modules that provide students with a basic background in information systems. In addition, the curriculum aims to ensure that students have a good understanding of the theoretical and practical elements of information technology. They will also acquire the knowledge and skills necessary to apply this knowledge in a variety of situations. The structure of the programme is modular and flexible, allowing students to specialize in a specific area of interest and tailor their studies to their goals and needs.

The expert group is aware that compulsory courses, such as Physical Education or History of Kazakhstan, are required by the Ministry of Education and Science of the Republic of Kazakhstan and are common to all bachelor programmes in the country. However, the experts recommend reducing the number of compulsory modules that are unrelated to the educational programme.

The educational programme includes four internships, which are tailored to the specific subject areas. The University provides coordinators („Head of Practice"), who help to organize the internships and work closely with students, business partners, and academic staff to ensure that the internship is successful.

The curriculum is detailed and transparent about the expected workload, allowing students to plan their studies accordingly.

The educational programme has identified a wide range of possible careers that are comprehensive and relevant. These career prospects include working as a data scientist, software developer, project manager, or research and academic work, such as conducting research or participating in a research project. These career opportunities for graduates correspond not only to the curriculum of the programme, but also to the learning outcomes.

In addition, the University offers various resources and services to support the professional development and growth of students and graduates, and to help them connect with employers.

To support the professional development and growth of students and graduates, and to help them connect with employers, the University provides a range of resources and services.

7M06102 Information Systems (Master)

The educational programme 7M06102 – Information Systems aims to train highly qualified information systems specialist with a deep engineering and scientific knowledge and broad professional skills for designing, developing, implementing, and developing information systems. The outcomes are fully aligned with the requirements of the professional field, ensuring that graduates are well prepared for the demands of the industry. The educational programme fully covers skills and competencies required by employers. These include data analytics, project management, artificial intelligence and information security.

The Master's programme builds on the undergraduate core knowledge and offers extensive training in specialized areas such as neural networks, data mining and machine learning. At the graduate level, participation in research and writing continues to be emphasized. Students are required to conduct original research and present their findings in a project or thesis.

The educational programme includes two internships, which are tailored to the specific subject areas. The practice coordinator provided by the university helps to organize the internships, works closely with students, business partners, and academic staff to ensure that the internship is successful.

The expected workload of students in the programme is transparent and clearly defined which helps students achieve their academic goals and gives them a clear understanding of what is expected of them.

To support the professional development and growth of students and graduates, and to help them connect with employers, the University offers a range of resources and services. Wide range of career opportunities for graduates, e.g. data scientist, software developer, etc., fully correspond with the curriculum and learning outcomes of the programme.

8D06101 Information Systems (PhD)

The educational programme 8D06101 – Information Systems aims to train scientific and pedagogical personnel in the field of information systems capable of conducting applied experimental research, managing research projects, designing offices and research departments, teaching and presenting scientific results.

The doctoral programme includes is s coherently structured with regard to the intended study and qualification goals. It provides a variety of learning activities and assessment methods that are aligned with the programme objectives and outcomes. These include case studies that require doctoral students to utilize their knowledge and skills in a real-world and professional context. Research papers and presentations that enable them to demonstrate their understanding of theoretical and practical aspects of information technology.

The research focus of the programme is closely linked to the strengths and priorities of the University's research activities. This allows PhD students to become familiar with the latest research and best practices in the field. Students get the opportunity to develop practical skills and participate in real-world projects, which prepare them for the demands of the professional field. The experts praise the established research environment that ensures intensive contact between the doctoral students and actively researching scientists in Kazakhstan and abroad.

The educational programme offers a structured approach to research that ensures that students are supported throughout the research process, from idea to completion. Emphasis is placed on the creation of innovative research papers that meet the high academic standards of rigor and innovation expected of doctoral research. In this way, the programme effectively helps students achieve their doctoral research goals and produce high quality research. Opportunities to collaborate and co-author on research projects with experienced researchers and student participation in research seminars, workshops, and conferences that expose them to state-of-the-art research and practices provide doctoral students with the skills, knowledge, and experience necessary for a career as an early career researcher.

The expected student workload for each course is clearly defined in the module handbook which gives students a clear understanding of what is expected of them.

Strong partnerships with international universities, which offer a wide range of mobility opportunities and ensure a smooth exchange process, are particularly valued by the expert group. Funding and support for mobility is provided in the form of scholarships, grants and travel allowances.

7M06101 Computational Linguistics (Master)

The programme's objectives and learning outcomes largely align with professional and academic expectations for a Master's degree in Computational Linguistics. The courses in programming technologies for NLP, information retrieval and extraction or NLU address demands for developing language technologies. However, the programme may lack soft skills needed in industry, such as collaboration with interdisciplinary teams, project management, or ethics in AI-areas increasingly prioritized by employers.

The programme partially reflects the Council of Europe's four purposes of higher education. The technical part seems to meet the demands of the tech sector but soft skills (project management, cross-disciplinary collaboration) seem underrepresented. Similarly, there is no dedicated focus on governance or community-driven projects to address tech's societal impacts with respect to the needs of 'active citizenship'. Collaboration with non-tech sectors (e.g., healthcare, education) also seem underexplored. The next update of the curriculum could address the current lack of personal development and preparation for and active citizenship.

Deep Learning is highly relevant for state-of-the-art computational linguistics, but it seems to be missing in the programme. The expert group recommends either including deep learning in the core university component or creating synergies between departments so that computational linguistics students can choose AI/big data/data science courses.

The programme in Computational Linguistics is consistent with the learning objectives (provided that a technical error in the module handbook (Learning Objectives-Module Matrix on page 5) is corrected (LO 6 and 7 are not reflected in any module, whereas e.g. LO 6 is definitely covered by e.g. the "Module of analysis technologies of text data" and LO 7 by e.g. "Computer processing of natural languages".

The expected workload, structured around 120 ECTS credits, aligns with European higher education standards and ensures a rigorous, full-time academic commitment. Credit allocation per module is clearly outlined in module handbook which helps students balance the tasks.

8D06102 Computer Engineering (PhD)

The structure of the doctoral educational programme 8D06102 – Computer Engineering is well-defined and documented in resources such as curriculum and module handbook. It consists of 180 ECTS credits, allocated between educational and research parts.

The mandatory courses "Academic Writing" and "Scientific Research Methods", which are common to all PhD programmes, aim to develop both hard and soft skills essential for conducting high-quality research. In addition, the programmes feature core mandatory courses as well as two sets of electives. This balanced composition of educational modules ensures sufficient flexibility and autonomy in programme development while maintaining a strong emphasis on the research-oriented nature of PhD studies.

The content outlined in the module handbook aligns with the classical definitions of the Computer Engineering field. The educational programme focuses on the integration of hardware and software, emphasising the design, optimisation, and innovation of computing systems, including physical components and cybersecurity challenges. Moreover, an analysis of the modules presented in the handbook demonstrates an advanced level of subject matter, consistent with the expectations for the third cycle of education (doctoral studies). The presented courses fully align with and achieve the stated learning outcomes of the programme.

The research component of the PhD curriculum encompasses various activities, including research seminars, a scientific internship abroad (typically at the institution of a foreign supervisor), thesis writing, article publication, and participation in international conferences. These elements ensure the full implementation of the tasks set for the students, while also meeting all formal requirements.

One of the strongest aspects of the educational programme 8D06102 – Computer Engineering is the highly qualified academic staff of the Computer Science Department. The percentage of faculty members holding academic degrees is 80%, which significantly exceeds the 40% requirement set by the local Ministry of Science and Higher Education. This underscores the high level of expertise among the teaching staff.

Nearly all faculty members, including PhD students, are actively involved in research projects established by the Ministry of Science and Higher Education. Based on the interviews with the department staff and students it can be concluded that the research topics for PhD students are derived from the scientific directions of the ongoing projects. Also, funds allocated through these grants are used to cover expenses such as publications in peer-reviewed journals, procurement of necessary equipment, and participation in scientific conferences. Thus, the doctoral students of the programmes under the accreditation are fully involved in relevant ongoing research.

As a suggestion for further improvement of the Computer Engineering programme, it would be beneficial to diversify the range of dissertation topics offered to students. While the current alignment with grant-funded projects provides a solid foundation, offering a broader spectrum of research areas could enrich the programme and provide doctoral candidates with greater flexibility to pursue innovative and interdisciplinary research directions. Such diversification would enhance the programme's appeal and better equip students for various academic and industry opportunities.

8D06103 Computer Science (PhD)

The structure the doctoral educational programme 8D06103 – Computer Science is well defined and documented in resources such as curriculum and module handbook. This programme consists of 180 ECTS credits, allocated between educational and research parts.

The mandatory courses "Academic Writing" and "Scientific Research Methods", which are common to all PhD programmes, aim to develop both hard and soft skills essential for conducting high-quality research. In addition, the programmes feature core mandatory courses as well as two sets of electives. This balanced composition of educational modules ensures sufficient flexibility and autonomy in programme development while maintaining a strong emphasis on the research-oriented nature of PhD studies.

The content outlined in the module handbook aligns with the classical definitions of the Computer Science field. The educational programme highlights theoretical and applied research in software systems, algorithms, and computational theories. Moreover, an analysis of the modules presented in the handbook demonstrates an advanced level of subject matter, consistent

with the expectations for the third cycle of education (doctoral studies). The presented courses fully align with and achieve the stated learning outcomes of the programme.

The research component of the PhD curriculum encompasses various activities, including research seminars, a scientific internship abroad (typically at the institution of a foreign supervisor), thesis writing, article publication, and participation in international conferences. These elements ensure the full implementation of the tasks set for the students, while also meeting all formal requirements.

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8D06105 Systems Engineering (PhD)

The academic discipline of Systems Engineering has great impact on the socioeconomic challenges of our times. A well-designed PhD programme can therefore significantly support the third main strategic objective of the university in providing highly educated Systems Engineers. For the time being the content defined for the educational programme 8D06105 – Systems Engineering is mainly based on the experience and knowledge of information systems research. The learning objectives reflect a more general view on the topic of Systems Engineering in the common sense as it is defined by e.g. the INCOSE (International Council on Systems Engineering). In particular the objectives ON3 "Outline the basic principles of design and management of large-scale engineering systems throughout the life cycle, demonstrate an interdisciplinary understanding of the concepts of systems" and ON10 "Apply various methods of modelling engineering systems, as well as methods of numerical and computer solutions used in industrial and engineering environments" give guidance on including more general "large-scale engineering systems" as well as methods of modeling those systems. These two aspects are on the one hand critical to implement the "principles of modern systems engineering" and

on the other hand not well realized in the programme content as described in the module handbook.

The Expert Group recommends that the content of both the compulsory and optional modules and disciplines be adopted for the course of the PhD programme in order to better reflect ON3 and ON10. Guidance on implementation can be found in INCOSE publications. To further enhance the interdisciplinary nature of the topic, interaction with neighbouring faculties is suggested.

The generalization of the module content will support the possibility of the students to establish their own research topic in the international context of Systems Engineering.

Teaching staff for Systems Engineering within the faculty of Information Science are highly educated in topics considering Information systems. In order to extend the content of the programme to more engineering-oriented subjects, stronger interaction with neighboring faculties is suggested.

6B05304 Physics (Bachelor)

The main objective of the educational programme 6B05304 – Physics is to train highly qualified specialists with a strong foundation in physics. The learning outcomes include the knowledge of the fundamental laws of physics, the ability to conduct and analyze experiments, and the application of methods of physics to the solution of real-world problems. These objectives and learning outcomes are typical of a bachelor's degree in physics worldwide and are well aligned with the requirements of professional employers.

The curriculum is designed to teach the students the fundamentals of physics, to acquaint them with new developments, and to guide them towards modern research. The curriculum follows this well-established structure and ensures that the defined objectives are met.

The expert group is aware that compulsory courses, such as Physical Education or History of Kazakhstan, are required by the Ministry of Education and Science of the Republic of Kazakhstan and are common to all bachelor programmes in the country. However, the experts recommend reducing the number of compulsory modules that are unrelated to physics.

The Bachelor programme in Physics does not explicitly define career opportunities for graduates. The expert group do not view this as a deficiency since the aim of a physics study programme is not to prepare students for a particular career, but to enable them to pursue a wide range of career choices. The university has a Career Center and holds job fairs to help graduates connect with employers.

The educational programme includes four internships, which are tailored to the specific subject areas. They are conducted in a number of institutes, such as the Scientific Research Institute

of Experimental and Theoretical Physics, the V.G. Fesenkov Astrophysical Institute, or National Open-type Nanotechnology Laboratory. After each internship the students present the outcome of their work in a written report. The University provides coordinators („Head of Practice") to organise the internships, which presumably includes matching students to host institutions according to their interests. They work closely with students, business partners and academic staff.

The students' workload is defined in detail and transparently in the curriculum.

Particularly positive aspects are the high teacher-to-student ratio, and the internship programme. Another positive aspect is the range of electives. However, this could be expanded with additional courses from other faculties/departments.

7M05308 Physics (Master)

The main objective of the educational programme 7M05308 – Physics is to train highly qualified specialists with a strong foundation in physics. The learning outcomes include the knowledge of the fundamental laws of physics, the ability to conduct and analyze experiments, and the application of methods of physics to the solution of real-world problems. These objectives and learning outcomes are typical of Master's programme in physics worldwide and are well aligned with the requirements of professional employers and PhD programmes in physics. The student' workload is defined in a detailed and transparent way in the curriculum.

The curriculum is designed to deepen students' knowledge of fundamentals of physics, to acquaint them with new developments, and to guide them towards modern research. The curriculum follows this well-established structure and ensures that the defined objectives are met.

Career opportunities for graduates of the Master's programme in Physics are not explicitly defined. As the aim of a physics degree is not to prepare students for a specific career, but to enable them to pursue a wide range of career options, the expert group does not consider this to be a shortcoming. The university has a Career Center and holds job fairs to help graduates connect with employers.

The educational programme includes two internships, which are tailored to the specific subject areas. They are conducted in a number of institutes, such as the Scientific Research Institute of Experimental and Theoretical Physics, the V.G. Fesenkov Astrophysical Institute, or National Open-type Nanotechnology Laboratory. After each internship the students present the outcome of their work in a written report. The University provides coordinators („Head of Practice") to help organise the placements and work closely with students, business partners and academic staff.

Particularly positive aspects are the high teacher-to-student ratio, the internship programme, and the five different tracks. Another positive aspect is the range of electives, although this could be expanded with additional courses from other faculties/departments.

7M01501 Physics (pedagogical) (Master)

The educational programme 7M01501 – Physics (pedagogical) is executed in accordance with the mission and vision of the university and is adapted to the needs of the market.

The aim of the educational programme is to prepare scientific and pedagogical personnel for teaching activities at universities and colleges, and conducting research and development in the field of Physics education, that provides graduates with ample employment opportunities.

The volume of the educational programme and individual educational components realistically reflects the actual workload of Master students, corresponds to the achievement of the objectives and learning outcomes of the programme. The total workload of the EP consists of theoretical training, research work, final certification, and also includes pedagogical and research practice and an internship, that students undergo at pedagogical universities in Almaty, which contributes to the development of their pedagogical skills.

Currently, there are Master students studying in the Kazakh and Russian groups, though classes in some disciplines are also conducted in English. By the end of their studies, all Master students published in journals and have experience of attending conferences.

In general, the curriculum of the Physics EP corresponds to the level of the Master degree and is suitable for achieving the objectives set.

The need to include disciplines on solving Physics problems was mentioned during the interview with the students. Indeed, knowledge of problem-solving methods is an important part of the training of physicists, as it helps not only in the learning process, but also in future professional activities. Disciplines on the methods of solving physical problems should be included in the curriculum to help improve the practical skills of Masters students.

In addition, the literature in the module "Interdisciplinary connections of physics" should be updated. Four of the six books recommended were written in the 1980s.

6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)

The main objective of the educational programme 6B06201 – Radioengineering, Electronics and Telecommunication is to train highly qualified specialists with a strong foundation in information and telecommunication technologies. The learning outcomes include knowledge of basic physical processes and mathematical tools for calculating electronic circuits in analogue

and digital electronics, the development of radio electronics, modelling of antenna feeds, microwave devices, wireless sensor networks and electronic devices. These learning outcomes adequately reflect the requirements from the professional field.

The curriculum is designed to teach students the basics of wireless technologies, satellite communications, digital signal processing, the Internet of Things and cybersecurity and covers the essential topics of a typical curriculum in Radioengineering, Electronics and Telecommunication. The curriculum follows this well-established structure and ensures that the defined objectives are met.

The expert group is aware that compulsory courses, such as Physical Education or History of Kazakhstan, are required by the Ministry of Education and Science of the Republic of Kazakhstan and are common to all bachelor programmes in the country. However, the experts recommend reducing the number of compulsory modules that are unrelated to the educational programme. After the on-site visit, KazNU faculty reported that the they plan to prepare a substantiated proposal to the Ministry with a recommendation to review the list of general education courses and consider the possibility of reducing their volume. The expert panel welcomes the active involvement of KazNU in this matter.

The educational programme includes four internships. To ensure the success of the internship, the University provides coordinators to help organise the placements and work closely with students, business partners and academic staff.

The curriculum is detailed and transparent about the expected workload, allowing students to plan their studies accordingly.

To support the professional development and growth of students and graduates, and to help them connect with employers, the University provides a range of resources and services.

7M06201 Radioengineering, Electronics and Telecommunication (Master)

The main objective of the educational programme 7M06201 – Radioengineering, Electronics and Telecommunication is to train highly qualified specialists capable of solving scientific and applied problems in the field of radio engineering, electronics and telecommunications and developing electronic devices and organize telecommunication networks. The learning outcomes defined by the university adequately reflect the requirements from the professional field.

The content outlined in the module handbook follows the classic definitions of education programmes in radionics, electronics and telecommunications. The study programme concept includes the acquisition of specialist knowledge as well as technical and methodological skills.

The expert group is very positive about the possibility of choosing between two alternative specialisations (Intellectual Systems and Networks or Modern Technologies for Building Tele-communication Networks), which take into account the individual interests of the students.

In the opinion of the reviewers, the programme offers appropriate forms of teaching and learning. It is recommended to offer more practical and laboratory exercises to promote students' experimental work and thus their skills in experimental design and strategic thinking, hypothesising, trial-and-error experiments, reasoning, discussion of measurement errors and teamwork. In this context, the laboratory equipment should be updated to keep pace with rapidly changing technologies (e.g. transmission systems, optical time-domain reflectometer, power sources, electrical and optical spectrum analysis). For basic experiments, it is acceptable to have equipment that is 30 to 40 years old. The gradual modernisation of the laboratories is the direction in which a research university should be moving.

After the on-site visit, KazNU informed that new laboratories had been opened for master's students in electronics and telecommunications in the current academic year. The list of newly purchased equipment was presented to the expert panel. Further efforts are currently being made to equip the material and technical base, both with university funds and with the support of industrial partners.

The volume of the educational programme and of the individual modules realistically reflects the actual workload of Master students, corresponds to the achievement of the goals and learning outcomes of the programme. The workload is set out in the curriculum in a detailed and transparent way.

8D06201 Radioengineering, Electronics and Tele-communication (PhD)

The educational programme 8D06201 – Radio Engineering, Electronics and Telecommunications is implemented in accordance with the mission and vision of the University and is in line with the needs of the professional field.

The main objective of the programme is to train highly qualified professionals capable of conducting scientific research in the field of radio engineering, electronics and telecommunications based on solid experimental and theoretical knowledge.

The programme structure is well defined and documented in curricula and module handbook. The programme provides appropriate forms of teaching and learning, according to the reviewers.

The compulsory courses in academic writing and scientific research methods are designed to develop both the hard and soft skills that are essential for the conducting of quality research. There are also core compulsory courses and two sets of electives. While maintaining a strong

emphasis on the research-oriented nature of the doctoral programme, this balanced mix of educational modules ensures a sufficient degree of flexibility and autonomy in the development of the programme.

The research component of the PhD curriculum involves a variety of activities, including research seminars, a scientific internship abroad, writing a thesis, publishing articles and attending international conferences. An extended period of study abroad while conducting experiments for their thesis will allow students to gain insight into a field of specialisation as well as intercultural skills and competences. The expert group recommends that more doctoral students be sent abroad for the experimental part of the thesis.

After the on-site visit, it was pointed out that all PhD candidates are obliged to complete an international research internship lasting from 30 to 90 days. According to the university, active efforts are being made to expand international collaboration, including the establishment of partnerships with foreign research laboratories and centres to facilitate the experimental components of doctoral theses. In addition, the university signalled that the signing of a cooperation agreement with the University of Salerno and the establishment of a China-Kazakhstan Elite Engineering Institute will open up further opportunities.

2.3 Conclusion

The criterion is **fulfilled**.

Specific Recommendations:

Recommendations for study programmes 6B06102 Information Systems (Bachelor), 6B05304 Physics (Bachelor) and 6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)

- The percentage of courses unrelated to the educational programme should be reduced.

Recommendations for study programme 7M06101 Computational Linguistics (Master)

- The module "Deep Learning" should be an obligatory part of the curriculum.
- The module handbook should be revised regarding learning objectives.

Recommendations for study programme 8D06105 Systems Engineering (PhD)

- The content of the modules should be changed to be in line with the title and the objectives of the educational programme.

Recommendations for study programme 7M01501 Physics (pedagogical) (Master)

- Disciplines on the methods of solving physical problems should be included into the curriculum.

- The literature in the module "Interdisciplinary connections of physics" should be updated.

Recommendations for study programme 7M06201 Radioengineering, Electronics and Telecommunication (Master)

- The infrastructure should be improved (for example transmission systems, OTDR, Power sources, PMD, Spectrum Analyses in electrical and optical domains) and more practical and laboratory classes should be offered.

Recommendations for study programme 8D06201 Radioengineering, Electronics and Telecommunication (PhD)

- More PhD students should be sent abroad for the experimental part of the thesis.

3 ESG Standard 1.3: Student-centred learning, teaching, and assessment

Institutions should ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach

3.1 Implementation

At the University, the organisation and implementation of the educational process follows the Academic Policy (RU) and its basic principles, one of which is the student-centred educational process. The University's student-centred learning environment is designed to activate the efforts of staff and students to meet their personal goals and social needs through effective learning activities, including the use of distance and online technologies.

In theoretical classes, various active and interactive methods and technologies are employed, such as lectures, seminars, methodological sessions, discussions, debates, and more. The use of active learning methods and technologies enhances the effectiveness of mastering theoretical knowledge and developing practical skills. Regular surveys are conducted to gather student feedback, facilitating continuous improvement of teaching methods.

KazNU uses blended learning to combine traditional in-person teaching with digital platforms like Moodle and Open KazNU. This approach enhances student engagement, provides flexibility, and supports personalized learning while maintaining strong faculty guidance.

Moodle DLS provides university students with access to digital materials prepared by instructors for the current semester's courses. It allows instructors to create personalized assignments using multimedia materials (gamification and adapted tasks), ensuring an individualized approach to teaching. The Open KazNU educational platform provides students and external participants with access to the university's massive open online courses (MOOCs). Students

can create personalized study plans and select additional courses that match their interests and skill levels.

The modular educational programme allows students to design a personalized learning path. This approach offers students flexibility in selecting courses from the catalogue of elective disciplines and core curriculum. Students independently form individual modular training based on the expected learning outcomes and competencies that will be acquired as a result of mastering the educational programme. Information about courses available for registration is provided in the module catalogue, which is published in the "Univer" system and on the University's website. During the registration period, faculty members present their courses to students.

Each PhD student is assigned a domestic and a foreign supervisor who provides ongoing guidance. Requirements for thesis supervisors (number of publications, acquisition of third-party funding, etc.) are formulated in a corresponding document. The university has a number of international agreements for the individual PhD programs, which enable students to find an international second supervisor. PhD students have the right to request a change of supervisor in cases where conflicts or issues arise. In 2024, there were 16 cases where doctoral students changed their supervisors due to valid reasons, reflecting the university's commitment to providing flexibility and ensuring a supportive environment for PhD candidates.

The criteria and methods for assessing the educational achievements of students are defined in the provisions of the Academic Policy, defining the following types of control: monitoring; midterm control, final control (final exam). The ongoing performance monitoring is systematically carried out during classroom and extracurricular activities, midterm control - twice a semester (after the first 7 weeks and after the last 8 weeks of the semester), final control - at the end of semester (during the examination session lasting at least 2 weeks).

Current performance assessments account for 60% of the final grade for a course, while the final exam accounts for 40% of the final grade. All types of control involve evaluation within a 100-point scale. Students with less than 50 points in the mid-term exam, students who have skipped more than 50% of classes in the discipline, students who haven´t paid tuition fees are not allowed to the final exam.

The form of monitoring, midterm control and final control are established by the teacher, included in the syllabus of the discipline and is communicated to the students. In case of "FX" students may retake the final exam for a fee without repeating the course during a set period of time.

Students who doesn´t agree with the results of final control can submit the application for an appeal. The procedure for conducting an appeal is outlined in the Rules for Final Control (Examination Session) and is conducted by the appeals commission.

Every student has the right to guaranteed support in case of any problems or questions. For this purpose, the University has established Student Complaint Handling Rules, which define the procedure for addressing complaints. Complaints can be submitted in paper form or online. Students can submit complaints, suggestions, or statements to the Rector's virtual office, the University's office, the Rector's mailbox, the trust box, or by calling the compliance service hotline. They can also schedule a personal meeting with the Rector or another member of the University's Board.

3.2 Assessment

The University is committed to promoting a student-centred approach to education by regularly using a variety of teaching methods, including lectures, group discussions, case studies and project-based learning, all designed to cater for different learning styles and keep students engaged.

Student feedback is actively collected via surveys conducted twice a year at the end of each semester. These surveys allow students to evaluate the course content and their instructors, providing valuable insights into the effectiveness of teaching methods. In addition to formal surveys, students can express their opinions and concerns through the university's online system or directly in the relevant offices. These concerns are considered by the relevant departments, including the dean's office. However, anonymous complaints are not actively considered, which may limit some students from sharing their concerns openly. Monthly meetings and discussions are held to update the educational programmes based on student feedback and ensure continuous improvement.

Students are given the opportunity to choose from a variety of modules and select their preferred instructors, empowering them to personalize their academic experience. This autonomy fosters a more tailored educational journey and enhances student engagement.

The university uses a variety of assessment methods, including paper-based, computer-based, and oral exams. These provide students with multiple opportunities to demonstrate their knowledge and skills, ensuring fairness and comprehensive assessment. Assessment criteria and methods are adequately explained and accessible.

3.3 Conclusion

The criterion is **fulfilled.**

4 ESG Standard 1.4: Student admission, progression, recognition, and certification

Institutions should consistently apply pre-defined and published regulations covering all phases of the student "life cycle", e.g. student admission, progression, recognition and certification.

4.1 Implementation

Persons with a general secondary, technical and vocational, post-secondary, higher education can be admitted to bachelor's degree programmes of higher education of the university. The University sets the passing score for applicants, taking into account the specifics of the academic direction. Applicants who meet or exceed the University's established threshold score are eligible for admission. Admission of persons to bachelor's programmes is carried out on the basis of a submitted application on a competitive basis.

For educational programmes of postgraduate education (master's, doctoral) the university accepts persons who have mastered educational programmes of higher / postgraduate education. In this case, persons who have not mastered at the previous level of education prerequisites, necessary for the successful development of educational programmes of postgraduate education are allowed to submit documents with the condition of mastering the necessary disciplines on a fee-paying basis after enrolment. Persons with a master's degree and at least 9 (nine) months of work experience are eligible for admission to the doctoral programme.

Applicants to doctoral programmes are required to demonstrate proficiency in a foreign language in accordance with the Common European Framework of Reference for Languages (minimum IELTS Academic score of 5.0 for English) and must possess at least 9 months of work experience.

Admission of persons to master's and doctoral programmes, is carried out on a competitive basis based on the results of comprehensive testing (CT) and (or) entrance exams.

The university has established processes and IT systems to collect, monitor, and act on information related to student progression. The system is in place for managing the educational pro cess, including features for monitoring student progression, generating reports on the educational process, and analysing the results of student assessments.

The Univer 2.0 Information System serves as a central portal to support processes related to assessing students' knowledge, examinations, filling the rating journal, and monitoring students' knowledge. It includes services for user management, general information, electronic document management, support for the learning process, educational process organization, system administration, and social and educational process services. The Open KazNU Online Educational Platform offers students the opportunity to choose an alternative form of studying disciplines, including studying within the online course of another teacher from KazNU or another university.

Students can change universities, change degree programs and resume their studies. The respective procedures, as well as the recognition of academic achievements gained at other universities, are regulated in the Academic Policy document.

The University's quality assurance system is based on European standards and recommendations, indicating a commitment to ensuring the recognition of credit points in accordance with international standards.

The transfer of credits is carried out by the Registrar's Office on the basis of the student's application and certificates to the Department of Academic Affairs. The department is responsible for objectively establishing the equivalence of the volume and content of the studied disciplines or the research work carried out to the requirements of the curriculum.

The maximum number of credits allowed to be transferred from foreign educational organizations is set individually, taking into account the rating of the foreign educational programme of higher and (or) postgraduate education and the profile of the EP.

Students who successfully pass final certification and complete their higher or postgraduate programmes are awarded a "Bachelor's" or "Master's" degree. They receive a diploma with a transcript. Graduates of bachelor's and master's programmes are also issued a European Diploma Supplement.

The diploma attachment includes final grades according to the credit-rating system for all academic disciplines, coursework, scientific research, internships, and final certification, specifying the academic credits and hours earned.

Doctoral students who successfully defend their dissertations are awarded the degree of Doctor of Philosophy (PhD) or Doctorate in their field, based on the decision of the dissertation council and the subsequent order of the Rector.

4.2 Assessment

The University provides a well-established process for student administration at a comprehensive level. As far as expert group can assess, the legal requirements are appropriately reflected in this process. All information necessary to begin studies at KazNU can be accessed online.

The language proficiency requirements for admission to the PhD appear appropriate and well suited to support a positive course of study.

The individual educational programmes of the two reviewed faculties are able to utilize this universi-ty-wide process. Consultations with faculty members and student representatives confirmed the high functionality of the administrative processes. Many processes have already been digitized, and performance metrics can be accessed at the faculty level. A future implementation for academic councils is planned. There were no negative remarks regarding the possibilities of transferring between academic institutions considering the recognition of qualifications; the exchange of students with foreign universities appeared to proceed smoothly from an administrative perspective in both directions.

The certifications and accompanying explanations provide clarity on the degrees obtained and their international context.

4.3 Conclusion

The criterion is **fulfilled.**

5 ESG Standard 1.5: Teaching staff

Institutions should assure themselves of the competence of their teachers. They should apply fair and transparent processes for the recruitment and development of the staff

5.1 Implementation

To implement the educational programmes 6B06102 – Information Systems (Bachelor), 7M06102 – Information systems (Master), 8D06101 – Information systems (PhD), 7M06101 – Computational linguistics (Master) highly qualified teaching staff of the Department of Information Systems were involved, which corresponds to the rules for filling positions of the teaching staff of KazNU. The staff of the department is fully compliant with regulatory requirements. The department has 3 Doctors of Science, 3 Candidates of Science and 7 PhDs.

The educational programmes 8D06102 – Computer Technology (PhD), 8D06103 – Informatics (PhD), 8D06105 – Systems Technology (PhD) are carried out by highly qualified teaching staff of the Department of Computer Science. Teaching is provided by a team of 45 teachers. Among them are 4 Doctors of Science, 11 Candidates of Science and 16 PhDs.

To implement the educational programmes 6B05304 - Physics (Bachelor), 7M05308 Physics (Master) a qualified staff of the faculty of the Department of Theoretical and Nuclear Physics was involved. 57 members of the department participate in the implementation of the educational programmes on a continuous basis, on a rotation or substitution basis. Among them are 13 Doctors of Science, 12 Candidates of Science and 23 PhDs.

The educational programme 7M01501 – Physics (pedagogical Master) is conducted by highly qualified teaching staff of the Department of Plasma Physics, Nanotechnology and Computer Physics. Teaching is provided by a team of 21 teachers, including 3 Doctors of Science, 9 Candidates of Science and 9 PhDs.

The Teaching Staff at the Department of Electronics and Astrophysics is formed from highly qualified and competent scientific and pedagogical workers who have extensive experience in scientific, pedagogical and practical activities. 81 members of the department participate in the implementation of the educational programmes 6B06201 – Radio engineering, electronics and telecommunication (Bachelor), 7M06201 – Radio engineering, electronics and telecommunication (Master) and 8D06201 – Radio engineering, electronics and telecommunication (PhD)

on a continuous basis, on a rotation or substitution basis. Among them are 7 Doctors of Science, 12 Candidates of Science and 36 PhDs.

Human resource management and the development of personnel policy is one of the key areas of the University's activities and aims at forecasting and planning the need for human resources; professional development and career management of staff; development of a policy for conducting competition for vacancies.

The selection of personnel is carried out on the basis of an analysis of the needs of the educational programmes, based on their results, a competition is announced to fill vacant positions. These rules for the competitive replacement of positions of teaching staff and researchers of the University have been developed in accordance with the current legislation of the Republic of Kazakhstan, regulatory legal acts of the Ministry of Internal Affairs of the Republic of Kazakhstan.

The requirements for the selection of faculty members are:

- the obligatory knowledge and observance of the Code of Corporate Culture of a teacher and an employee of Al-Farabi Kazakh National University;

- academic degree and academic title;

- work experience in a scientific and educational organization;

- educational, methodical and scientific work;

- active participation in scientific research and/or international projects;

- knowledge of a foreign language;

- the presence of publications in scientific publications recommended by the Committee for Quality Assurance in Science and Higher Education international scientific journals included in the information bases Web of Science (Clarivate Analytics) and Scopus.

A requirement for presentation of the taught discipline has been introduced for candidates to teaching staff. For applicants for the position of a researcher, a presentation of a research project is required.

The Competition Commission determines the forms, procedures, specific terms of the competition, analyses the competition documentation, and makes a decision on the results of the competition.

The University provides extensive opportunities for the professional development and career advancement of its academic staff. These opportunities are facilitated by the Institute for Advanced Training and Additional Education (IATAE), which offers programmes of advanced training, retraining and internships.

The University strives to create favorable working conditions for teaching staff and employees, encouraging their professional development, job satisfaction and internal harmony. Training seminars and events for teaching staff and employees are regularly held. These activities cover a wide range of areas, including teaching methodology, the use of modern educational technologies and professional development.

All members of both faculties actively participate in research activities, including projects funded by grants from the Ministry of Science and Higher Education, as well as international projects. The University promotes international collaboration and academic mobility for teaching staff. The University provides financial support for the participation of teaching staff in conferences, seminars and advanced training courses, helping to expand their professional knowledge.

To encourage faculty and staff excellence in teaching, scholarship, and commitment to the educational mission, the University provides incentives for publication activity in high-ranking international publications, nominates relevant individuals for state and departmental awards.

The University regularly evaluates the work of teachers and staff, providing them with feedback from students, colleagues and administration. This system allows you to identify successes and areas for improvement. The teaching evaluation system also includes student surveys, peer assessment, research on learning outcomes and other indicators. Failure to meet established standards may result in additional inspections.

The University is committed to maintaining high standards of teaching ethics and quality of education. To ensure compliance with these standards, the university has developed mechanisms for removing teaching staff from teaching activities in the event of a low level of qualifications or violation of the Code of Corporate Ethics.

5.2 Assessment

The University has developed a clear and transparent process for the recruitment of staff, which is detailed in the document "Rules of Competitive Filling of Positions of Professorial teaching staff and researchers at Al-Farabi Kazakh National University". The recruitment is based on a competitive procedure and is carried out by a committee that represents all relevant stakeholders. For all appointment levels, the job responsibilities and the qualification requirements are specified in the above-mentioned document. The recruitment decisions are based on the documents submitted by the applicants and on interviews with the applicants conducted by the committee. Every committee member then rates the applicants on score cards, which contain a relatively large number of criteria. Paragraph 5.8 of the above-mentioned document appears to imply that the final appointment decisions are based solely on these score cards. If true, the expert group views this as somewhat problematic since the score cards are identical

for all positions, while for some positions some criteria are presumably more important than others, and therefore it should be possible to give them higher weight.

The activities to facilitate development of the staff are managed by a dedicated entity, the Institute for Advanced Training and Additional Education (IATAE). The IATAE offers qualification courses with both professional and pedagogical focus. These courses, which can be short-term, medium-term, or long-term, allow the teaching staff to acquire knowledge of new scientific and technological developments and of new teaching methods. Furthermore, the IATAE offers internships (at other universities, research organizations or companies, both in Kazakhstan and abroad) to implement and consolidate this new knowledge. This staff development programme is very impressive and goes beyond the status quo at most other universities.

Performance evaluations are conducted systematically at the end of the academic year, providing constructive feedback and opportunities for continuous improvement.

The HEI places great value on scholarly activities of the teaching staff and strives to increase the number of publications in high-ranking international journals (for which it offers bonuses). However, the typical teaching load is higher than at universities in Western countries and therefore leaves only some, but not very much, time for research. While there are special research professorships with a reduced teaching load and thus more time for research, this seems to be the exception rather than the rule. The university should provide opportunities for faculty members to reduce their teaching workload to free up time for research activities. Furthermore, there currently does not appear to be a sabbatical programme that would allow for a whole semester of research (typically in another country). Such a programme would also be useful for teaching since the additional experiences and qualifications acquired during a sabbatical term can be fed back into teaching.

Both the quantity and the quality of the teaching staff are appropriate. In fact, the teacher-to-student ratio is very high so that students benefit from individual attention at every level of their education, which makes it much more likely that the students can successfully complete their studies. The teaching staff includes researchers from the senior to the junior level, some of whom have spent a considerable amount of time at leading research universities abroad and have an impressive publication record. Additionally, the majority of teaching staff are involved in implementing the scientific projects of grant funding from the Ministry of Science and Higher Education of the Republic of Kazakhstan. This not only contributes to advancing knowledge in their respective fields but also ensures that students are exposed to cutting-edge research and practical applications, enriching the overall educational experience.

The quality of the teaching staff is also evidenced by the number of those holding academic degrees (80%). This number significantly exceeds the minimum requirement for HEIs of 40% set by the local Ministry of Science and Higher Education.

A very positive aspect is that the HEI is making efforts to promote international exchange, not only of the students, but also of the teaching staff. Teachers take part in international conferences and spend short periods abroad at partner universities. The university should offer incentives for longer-term international mobility for both staff and students.

For all relevant positions, the hiring requirements include detailed knowledge of rules and regulations specific to Kazakhstan. This appears to stand in the way of hiring foreign nationals and could therefore have a negative effect on the internationalization efforts. While exceptions can be made for foreign nationals, the fraction of non-Kazakh tenured faculty members seems to be very low. In discussions with students, it became apparent that they would welcome a larger number of international teachers, in particular from East Asia (Japan, South Korea).

Recommendations:
- The university should provide opportunities for faculty members to reduce their teaching workload to free up time for research activities.

- Research sabbaticals for the teaching staff should be introduced to provide more research opportunities (e.g. 6 months every 5 years).

- The university should offer incentives for longer-term international mobility for both staff and students.

5.3 Conclusion

The criterion is **fulfilled**.

6 ESG Standard 1.6: Learning resources and student support

> Institutions should have appropriate funding for learning and teaching activities and ensure that adequate and readily accessible learning resources and student support are provided.

6.1 Implementation

The University infrastructure is a unified complex with the status of a university campus, with a total building area of 83,422.1 m² and educational buildings covering 165,000 m². There are 15 dormitories with a total area of 79,215.2 m², accommodating 5,034 students.

Each student is provided with individual access to informational and educational resources throughout their study period. The social infrastructure of Al-Farabi KazNU includes the facilities of Museums, the Student Palace, and the Library, Sports and wellness complex, Computer

labs, Keremet Student Service Centre, dormitories, medical centre, and social-psychological service.

The Al-Farabi Library is 17,846.1 m², with additional reading rooms in the university buildings on Masanchi and Karasai Batyr Streets, covering an area of 660.8 m². The library's collection includes about 3 million books. The library provides textbooks for all educational programmes across 16 faculties. As of January 1, 2024, the unified informational and library collection consists of 2,243,761 copies, including 574,256 copies in the state language (26%), 1,536,641 copies in Russian (70.3%), and 132,864 copies in foreign languages (5.9%). The traditional reading room offers 700 seats and the library services and reading rooms are equipped with automated workstations. The electronic library, with a total area of about 1,000 m² and 200 seats, is divided into several functional zones such as: Internet access zone, Multimedia resources zone, Satellite TV zone, Laptop work zone. The university states to provide access to databases including: Springerlink, ScienceDirect, Scopus, EBSCO, Wiley, IEEE, Electronic Library, SciVal, Aknurpress, Digital Library, SoftBooks, Test access.

In recent years, the University has created a "smart" information and communication infrastructure and a Smart Campus, integrating cloud and mobile technologies.

The University, in collaboration with European universities, annually receives grants for student training through programmes (e.g. the Erasmus+ "International Credit Mobility") and successfully implements external and internal academic mobility programs.

According to the university, in addition to material resources, students are assigned a mentor. Mentors conduct support sessions for students, including mentor hours, training seminars, leadership lectures, and studies of the university's regulatory documents. Graduates receive support in job search and career development. KazNU's Office of Professional Development and Career focuses on equipping students with practical skills, offering services such as career counselling, resume and cover letter assistance, internship and job search support, and hosting job fairs and employer networking events.

6B06102 Information systems, 7M06102 Information systems, 8D06102 Information systems, 7M06101 Computational linguistics

The material and technical base of The Faculty of Information Technology includes 38 classrooms with a total area of 1,260 m², designed for 1,000-1,200 students, 7 laboratories with an area of 181 m² and 11 computer rooms with 165 seats. To implement the educational programmes, the faculty has laboratories that are branches of well-known IT companies and are equipped with modern equipment and software: Computational linguistics laboratory, Internet of things laboratory, Cisco Networking Academy laboratories, HP laboratory, Trade and technical security systems laboratory, Alcatel network equipment laboratories, Security laboratory,

IS (Kaspersky). The department laboratories are equipped with laboratory equipment, which allows conducting laboratory classes on data processing. Computer labs are open from 8:00 to 20:00 at the faculty, and students have access to computers in accordance with a pre-approved study schedule or during free hours for independent study.

Master's students of the EP 7M06101 – Computational linguistics have access to specialized programmes such as language processors, big data processing tools, software for computational linguistics, and machine translation.

8D06102 Computer engineering, 8D06103 Computer science, 8D06105 Systems engineering

The Department of Computer Science offers state-of-the-art laboratories equipped with essential tools and software for scientific research, such as the Computer Science Laboratory, Student Laboratory of System Integration Design and Development, Computational Mathematics and Mathematical Modelling Laboratory and the Robotics and Artificial Intelligence Laboratory.

6B05304 Physics, 7M05308 Physics

Laboratories for general physics courses include Mechanics Laboratory, Laboratory of Molecular Physics, Laboratory of General Physics, Laboratory of Electricity and Magnetism, Optics Laboratory, Laboratory of Nuclear Physics. Additionally, the University has a scientific and technological park, a research institute for experimental and theoretical physics (NIIEF), and a national open-type nanotechnology laboratory (NNL).

7M01501 Physics (pedagogical)

For the implementation of research activities of master's students within the framework of the EP preparation, the faculty has the following research laboratories: Laboratory of Mathematical Modelling and Experimental Study of Plasma Processes, Laboratory of Nonlinear and Correlation Phenomena in Non-Ideal Plasma Physics, Laboratory of Dusty Plasma and Plasma Technologies, Laboratory of Pulsed Plasma Accelerator. Educational laboratories of the faculty include Laboratory of Mechanics, Laboratory of Molecular Physics, Laboratory of General Physics, Laboratory of Electricity and Magnetism-2, Laboratory of Optics, Laboratory of Nuclear Physics, Laboratories for the course of Atomic Physics, Laboratory of Radioelectronics, Laboratory of Digital Electronics, Laboratory of Physics and Astronomy Teaching Methodology, Laboratory of Astrophysics and Optoelectronics, Laboratory of Fundamentals of Electronic And Grinding Technology, Educational Laboratory of Semiconductor Device Making, Laboratory of Computer Modelling of Nanostructures, Semiconductor Optoelectronics and Nanophotonic Laboratory of Gas Discharge Physics and Laboratory of Vacuum Technology, Physics and Astronomy Teaching Methodology Laboratory, Laboratory of Electrical Engineering and Electronics, Laboratory of Electric Drive and Electrical Machines, Mobile Class. There

is also a scientific and technological park, a research institute for experimental and theoretical physics (IETP) and an open-type national nanotechnology laboratory (NNLOT).

6B06201 Radioengineering, electronics and telecommunication, 7M06201 Radioengineering, electronics and telecommunication, 8D06201 Radioengineering, electronics and telecommunication

The Department of Electronics and Astrophysics has 2 lecture halls and 10 classrooms, with a total area of 1160 m^2, designed for 800-1000 seats; 14 laboratories, with a total area of 205 m^2; computer rooms - 10, with a total area of 350 m^2, designed for 105 seats.

The Department of Electronics and Astrophysics offers laboratories equipped with latest equipment for practical research and laboratory research, such as Theory electrical circuits laboratory, Educational laboratory of general physics, Laboratory of electronic measuring equipment, Laboratory of semiconductor instrumentation, Laboratory of radio electronics, Laboratory of semiconductor nanostructures and optoelectronics, Information and communication technologies laboratory, Digital signal processing laboratory, Laboratory of semiconductor nanostructure, Laboratory of digital electronics, Laboratory of optoelectronics, Laboratory of telecommunication systems, Laboratory of Huawei ICT academy, Samsung innovative academy, Eltex alatau cooperative laboratory, Cisco authorized academy.

Master's students are assigned scientific supervisors who provide access to the latest equipment and computing systems for conducting practical research and laboratory classes, including supercomputers, microcontrollers, programmable logic integrated circuits, transceivers, detectors, etc. They are provided with following laboratories: Laboratory of physics of chaotic processes, Laboratory of electronics and control systems, Laboratory of nonlinear signal analysis, Laboratory of radioastronomy, Laboratory of simulation of nanostructures.

Doctoral students are provided with scientific laboratories and workplaces with the required equipment for conducting scientific research and writing articles in top-rated journals and dissertations with a supervisor, such as Laboratory of nonlinear information processes, Laboratory of semiconductor optoelectronics and nanophotonics, Technological laboratory of semiconductor structures A3B5 compounds technology, Technological laboratory of thin-film semiconductor materials and nanostructures, Laboratory of nanoelectronics.

Assessment

The representations from the self-assessment-report and the impressions gathered from various on-site discussions, as well as the inspections of laboratories and facilities, provide a comprehensive picture of how the Faculty of Information Technology fulfills ESG Standard 1.6. The infrastructure/building premises, as well as the library facilities, are fully adequate to meet the

qualification objectives. The laboratory equipment is sufficient to meet the qualification objectives, but the expert group sees potential for further improvement, in particular due to the rapid development of new technologies.

Overall, a wide range of resources is available to students, provided by KazNU. These resources meet the general requirements regarding support and resources for the educational programmes. Internal quality control regarding the suitability and availability of all equipment for students is good and thoughtful and provides students with the necessary information about the services and their use. Students appear to be aware of these opportunities and actively make use of them.

The number and qualifications of administrative staff are sufficient to support students and student mobility. The faculties also provide adequate subject-specific resources. The variety of literature available in the classroom could be increased, especially for physics students. This would allow them to refer to different books during their experiments. A positive aspect to highlight is that specific resources required for studies can be made available based on research and teaching budgets. In fact, student representatives mentioned that they can request resources in justified cases and usually receive them.

Limitations arise from the physical spaces available for studies. Traditional lecture halls and laboratories are present, but spaces that support collaborative work are only available in the library. The new coworking space set up by the HALYK Group is currently an isolated example. Other issues, such as heating in the faculty building and the temporary closure of the faculty's cafeteria, further complicate the overall study experience. For this reason, the expert group suggests leveraging existing opportunities to support more flexible teaching and learning methods with simple, modern concepts for space utilization within the faculty.

The high-performance computing center is currently still in the commissioning phase. Once it becomes fully operational, it will open up possibilities for teaching and research activities that exceed the normal expectations at a university.

The possibility of financing doctoral studies is guaranteed by internal university and state grants, as well as scholarships from various Kazakhstan foundations. It is sufficient and sustainable, since most doctoral students continue to work at the university after defending their doctoral dissertation.

6.2 Conclusion

Recommendation:
- Interdisciplinary coworking spaces should be created at the university to enable efficient self-learning and group learning on campus, as well as coworking spaces and individual working places for the professors (as planned in the campus expansion).

The criterion is **fulfilled**.

7   ESG Standard 1.7: Information management

Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes and other activities.

7.1   Implementation

For effective management, the University engages in information management, systematically collecting, accumulating, and analysing data about its activities. This evaluation helps identify strengths and weaknesses, enabling the University's management and collegial bodies, such as the Academic Council and Rector's Office, to formulate quality assurance policies, develop strategic and operational plans, and disseminate information for efficient governance.

To assess the level of satisfaction with the management system among faculty, staff, and students, surveys are systematically carried out in areas such as the development of social and living conditions, educational activities, leisure time, staff salaries and financial support for students. Various means, including surveys, interviews and suggestion boxes, are also used to measure student satisfaction. All students participate in a survey to evaluate the performance of faculty members, the quality of facilities, and overall satisfaction with the University's social infrastructure.

At KazNU, data collection and analysis are supported by advanced information systems. These systems ensure data reliability, accuracy, and timeliness, providing a comprehensive foundation for evaluating educational programme effectiveness. Key systems include:

- Univer 2.0: A core educational management platform, which supports functions such as student assessment, academic records management, application submissions, and real-time progress tracking. It also offers students and faculty access to personal accounts, electronic schedules, an electronic library, and automated reporting for administrative use.

- Moodle and Open KazNU: These platforms enhance the university's distance learning capabilities, making education accessible and flexible.

- Salem Office: A document management system that streamlines administrative and documentation processes.

To assess and monitor educational quality as perceived by students and faculty, the Sociological Research and Social Engineering Centre (SRSEC) operates as an integral part of the

university's quality assurance efforts. SRSEC conducts numerous surveys to assess and enhance educational quality, including Teacher through the Eyes of Students (twice a year), Curator-Advisor through the Eyes of Students (annually), Effectiveness of the Educational Process (annually), Course Evaluation (after each semester), Clean Session" campaign survey (annually), Employment readiness and adaptation surveys. Survey results are compiled into an Analytical Report, which is shared with university leadership and reviewed at Academic Council meetings. Faculty and department heads can access the report via Univer 2.0, ensuring transparency and accountability across the university community.

For monitoring student academic performance and the overall quality of education, reports are compiled after each examination session. The results of these sessions are thoroughly analyzed and discussed in meetings at the department level, within the Academic Committees on the quality of education and teaching, and at the University's Academic Council.

7.2 Assessment

Several departments at university level are responsible for statistics and data management. The existing and entirely digitalized information management system is based on specialized software solutions, the use of suitable platforms and the University's own portal for data collection, as well as the implementation of data protection measures and secure access mechanisms. This guarantees efficient and - according to the consistent statements of employees and students - user-friendly data collection and evaluation.

The statistics, plans, information tables and other information used in the self-assessment report published and presented in the individual meetings on site in the university's premises are up-to-date, in-depth and of an appropriate scope.

The internal evaluation is well-suited to monitor the quality of the courses and other aspects relevant to the students. Quality assurance measures and planning of follow-up activities accompany the data analysis.

7.3 Conclusion

The criterion is **fulfilled.**

8 ESG Standard 1.8: Public information

> **Institutions should publish information about their activities, including programmes, which is clear, accurate, objective, up-to date and readily accessible.**

8.1 Implementation

The university reports that public information is disseminated through the official University website, the official website of the Department as well as social media. The corporate newspaper "Qazaq Universitety", which has a national status, is effectively used.

The official website of KazNU is the main platform for providing accessible, reliable and transparent information to the public. It has recently been updated. The new website aims to improve the user experience and provide comprehensive information on programmes, policies and institutional updates. However, updates and refinements are still underway to ensure all content is fully accessible and up-to-date, aligning with the university's commitment to clear and public information dissemination. The information is published in three languages (Kazakh, Russian, and English). The University has also developed and implemented a special version of its website for the visually impaired.

Information on various aspects of university life and activities can be found on the official university website. This includes details on admission rules, descriptions of educational programmes, and information on the teaching staff. It also covers the University's material resources, educational and methodological support, research activities, and student life, including social and sports support. The site features updates on international cooperation, published articles by the Rector, a media digest, and showcases the achievements of the university, faculties, and students. Decisions made by the Academic Council, reports from the university's head, and insights into scientific projects are also shared. Additionally, the website provides information on competitions, grants, announcements, the work of the admissions committee, and the overall university structure.

All materials, including those related to educational programmes, are prepared by Department of Information and Communication staff and sent for approval to the relevant university structures, such as departments, faculties, scientific institutes, and others. After approval and editing, the verified materials are published in the media and on the university's official social media pages and website under the "News" section.

Information on the admission requirements for applicants is available on the University's website and on the Faculty pages for each EP. The rules and conditions for studying students, the rules for conducting various types of examinations, tests, methods and criteria for grading are described in the Academic Policy of the University. Documentation on all the rules of the Student Life Cycle is available to all students and is published on the University website and on the student's personal page in Univer IS.

Information on the timetable of the educational process, including examinations and holidays, is provided in the Academic Calendar, which is approved annually by the University's Academic Council. Information on graduate employment and careers is constantly updated and posted on the website under the Careers and Employment tab.

8.2 Assessment

The official website of the University provides information that helps all interested parties to get acquainted with the activities of the educational institution. The University's website focuses on convenience and accessibility for different categories of users. It supports several languages, which helps to ensure the availability of content for an international audience. Another notable feature is the availability of a website version for users with special needs.

The information provided to the public on the curriculum is generally satisfactory. The website has a clear structure aimed at different user groups. It presents all the main aspects of the University's activities: history, mission, achievements, current rankings, information on scientific and educational work, scholarships and benefits. There are sections on faculties, departments, teaching, scientific and educational activities, providing a complete understanding of the University's activities. Contact persons for the curriculum and student life are listed as well. Particular attention is paid to information on the university's international collaborations, joint research projects and exchange programmes, underlining its active position in the global education market.

The University's website is a fully informative and convenient resource for all interested users. The site is easy to navigate. The information provided is clear, transparent and up to date. All content is presented in a convenient and structured manner, making the University's website a valuable tool for applicants, students, teachers and employers.

8.3 Conclusion

The criterion is **fulfilled**.

9 ESG Standard 1.9: On-going monitoring and periodic review of programmes

Institutions should monitor and periodically review their programmes to ensure that they achieve the objectives set for them and respond to the needs of students and society. These reviews should lead to continuous improvement of the programme. Any action planned or taken as a result should be communicated to all those concerned.

9.1 Implementation

According to the university, the faculties continuously monitor, periodically analyse and review the educational programmes to ensure their effective implementation, create a favourable

learning environment and meet the growing demands of students, the labour market and society. Monitoring and periodic analysis of EPs is carried out through various forms and methods (surveys, interviews, focus groups, etc.).

Additionally, coordinators and developers regularly conduct evaluations and revisions of educational programmes to improve their quality, involving students, graduates, and employers through interviews, surveys, sociological polls, etc. This process takes into account various indicators (student body, satisfaction with program implementation, employment of graduates, etc.).

The university describes in the self-assessment report how procedures for the development, approval, and implementation of EP are mainly regulated, based on the following internal regulatory documents:

- The Concept of Modernization of Educational Programs

- Regulation on the Procedure for Development and Approval of Higher and Postgraduate Educational Programs

- Regulation on the Academic Committee for Training Directions

The Academic Committees conduct periodic assessments based on key parameters: labour market demand for EPs at regional, national, and international levels; capacity, including human, intellectual, scientific, and material resources; fostering collaborations; alignment of learning outcomes with National Qualification Framework, Industry Qualification Framework, and professional standards; ensuring transparency in teaching, learning, and assessment processes for achieving learning outcomes.

The Academic Committees undertake the modernization activities to the educational programmes. The development plans include the following aspects: improving the content of the educational programme in accordance with modern trends in the development of science, technology, culture, economy and technology, as well as involving the main consumers of educational services - employers and students - in the activities.

The formation of professional competencies of graduates of educational programmes and modules of professional competencies of EP are mandatory and coordinated with representatives of employers. Various forms and methods are used for this purpose, including surveys, interviews, and focus groups.

The Dean's Office of the Faculty is responsible for coordinating monitoring activities. The system of monitoring the academic achievements of students at the university includes various forms: ongoing monitoring of academic performance, midterm control, final certification. The

assessment of students' knowledge, skills and abilities is an integral assessment of the results of all types of student's activities during the study period.

To monitor the academic achievements of students, after each examination session, a report is compiled containing an analysis of the results of the session, which are discussed at meetings of the Academic Council of Faculties, Departments, Academic Committees on the quality of education and Teaching. As a result, tasks are formulated to further improve the educational process in the field of improving the quality of teaching and learning of students.

The evaluation of the demand for educational programmes is conducted by employers and University graduates through interviews, questionnaires, sociological surveys, etc.

As a result of internal evaluations, the University's developed EPs are aligned with the needs of stakeholders (students, employers, society) and external qualification requirements.

Since 2010, the Centre for Sociological Research and Social Engineering has been monitoring the quality of the University's educational activities. Surveys assessing student satisfaction with the quality of educational services and the evaluation of learning outcomes are conducted via the Univer system. The results obtained by the Centre are summarized, and the causes of discrepancies and the level of satisfaction with the management system are analysed. Decisions are made to adjust plans according to areas of activity. All results are provided for individual units and are accessible to the heads of structural units and are posted in the Univer system. Furtherly, results are published on the University and Centre websites.

9.2   Assessment

The University regularly monitors teaching and student performance and engages with stakeholders to maintain and improve the quality and employability of its students.

University staff demonstrated a systematic, multi-stakeholder approach to ongoing programme monitoring and periodic review, with a clear commitment to continuous improvement of educational programmes. During the reviews, the university representatives claimed that students can suggest improvements to the programme and gave an example of a student who asked about the possibility of implementing the assignment in C++ rather than Python – and when this was approved, the faculty eventually found that this language was better suited to the course objectives and this change was implemented in the EP.

The documentation provided contains specific implementation details with a strong emphasis on stakeholder involvement (students, employers, faculty). Detailed documentation of monitoring and review processes is available and has been confirmed in a series of meetings with university representatives.

The process of updating the programme starts with its coordinator. The new version is communicated to all departments and made available for further review. It is published after approval by the Head of Department. It is planned to create the position of Head of the Office for Educational Programme Development. The content of the programme in the given discipline is also compared with the programmes of the top 100 universities and suggestions from the industry.

New educational programmes are usually developed by May-June. Up to 30% of the content of the existing EP can be updated on an annual basis. The updated programme is also uploaded to the national system for review. More substantial changes in the educational programme are synchronised with the duration of the course. Suggestions from graduates and changes in state standards are also taken into account.

The documentation provided mentions the evaluation of "Workload, academic performance, and graduation rates of students" and provides detailed information about credit systems and academic load. During the semester, the Univer system (developed in-house) is used to monitor the learning progress of each student. The data from the monitoring process is collected centrally (linked to PowerBI) and passed on to the departments and, from next year, to the Academic Council for additional evaluation.

Particular positive is the comprehensive assessment of the teachers' abilities. Regular evaluations of teachers are conducted by the students and by the peers.

Teachers attend lectures given by colleagues in other departments and write evaluation reports. Each year they present individual plans at departmental level, with the number of publications, social activities, etc. planned. Each member of staff has a certain number of activity-based points to collect, with the intention of encouraging staff to plan their development and be evaluated. Indicative plans are drawn up for each department.

Student satisfaction is extensively addressed in the documentation provided, including multiple surveys such as "Teachers through the eyes of students", "Effectiveness of the educational process", and "Student satisfaction and social well-being assessment". There are bonuses for teachers with the best scores, which are decided on an annual basis.

Feedback from students (who can evaluate courses and individual materials) is evaluated by the Academic Committee (at departmental level), which brings together teachers, employers and students (15 members in total). They meet once a month and revise and update the curriculum annually, also taking into account the curricula of other countries and the needs of the market (as the committees include at least one representative of the industry). If the programme is not satisfactory to the students, it is closed.

Students are aware of the committee (they also have their representative) and confirm that changes are being introduced, e.g. a first-year bachelor student interviewed remembered that 'machine learning' wasn't in the curriculum a year ago, but now it is.

As the number of active students in doctoral programmes is limited, internal surveys are unlikely to provide much insight. Expanding staff and student exchanges with the viable international community could enrich active feedback on all activities, including student programmes and outcomes, thereby improving performance against ESG 1.9.

Existing tools, such as the Student Satisfaction Assessment survey, are fully utilised are appropriate for assessing the learning environment and support services and their suitability to the programme.

9.3 Conclusion

The criterion is **fulfilled**.

10 ESG Standard 1.10: Cyclical external quality assurance

Institutions should undergo external quality assurance in line with the ESG on a cyclical basis

10.1 Implementation

The university's educational programmes undergo external evaluation by national and international accreditation bodies. External evaluation plays a key role in ensuring that the educational programs meet the requirements of national and international professional standards and labor market demands.

The main procedures for external evaluation and recognition of the quality of educational programmes and the preparedness of graduates according to these standards include:

- State Accreditation of the Republic of Kazakhstan: This involves recognizing the educational activities of the university's higher and postgraduate education programmes as being compliant with the requirements of the State Educational Standards of the Republic of Kazakhstan and other relevant national legal frameworks.

- Independent Quality Assessment of Education (IQAA-Ranking): evaluates the academic activities of the university across seven key indicators, including student learning outcomes and the number of accredited educational programmes.

- The National Chamber of Entrepreneurs "Atameken" (Atameken Ranking): an independent evaluation of educational programs within Kazakhstan, which provides a comprehensive assessment of the effectiveness and relevance of educational content to the national labor market.

- IAAR Eurasian University Ranking (IAAR EUR): evaluates higher education institutions based on four main indicators, including the ranking of educational programmes.

- International University Evaluation by Subject Areas (QS WUR by Subject): an international ranking that assesses universities' performance in specific disciplines and educational fields.

The accreditation of the University and its educational programmes is managed by the Accreditation and Licensing Service. In 2024, the Independent Agency for Quality Assurance in Education (IQAA) accredited the University for a period of five years.

The university cooperates with international accreditation agencies such as ASIIN, ACQUIN.

In 2018, the educational programmes 6B06102 – Information Systems, 7M06102 – Information Systems, 8D06101 – Information Systems, 8D06102 – Computer Engineering, 8D06103 – Computer science, 8D06105 – Systems Engineering, 6B06201 – Radioengineering, Electronics and Telecommunication, 7M06201 – Radioengineering, Electronics and Telecommunication and 8D06201 – Radioengineering, Electronics and Tele-communication (PhD) passed the international specialized accreditation by the ACQUIN agency. In 2017, the educational programmes 6B05304 – Physics, 7M05308 – Physics, 7M01501 – Physics (pedagogical) underwent the international specialized accreditation by the ASIIN agency. All accreditation certificates are publicly available on the official KazNU website, ensuring transparency and easy access for all stakeholders.

KazNU is the only university in Kazakhstan included in the top 163 universities in the world according to the QS ranking and ranks among the top 29 leading universities in the QS Asia University Ranking.

10.2 Assessment

The procedures for external evaluation of the quality of individual educational programmes are carried out in accordance with the requirements of the laws of the Republic of Kazakhstan in the field of education. s a process of periodic external evaluation of the quality of higher education institutions and academic programmes, KazNU embraces the concept of cyclical external quality assurance.

Overall, KazNU conducts ongoing and periodic reviews of its courses to maintain the quality of its programmes, as well as cyclical reviews by external experts.

The University views the national and international accreditation processes as an opportunity for continuous improvement and ensures that the recommendations of previous accreditation processes are thoroughly addressed.

10.3 Conclusion

The criterion is **fulfilled**.

IV   Recommendation to the Accreditation Commission of ACQUIN

1   Assessment of compliance the Standards and Guidelines in the Higher European Area (ESG) in the actual official version and the German Council of Science and Humanities (WR)

The study programmes 6B06102 Information Systems (Bachelor), 7M06102 Information Systems (Master), 8D06101 In-formation Systems (PhD), 7M06101 Computational Linguistics (Master), 8D06102 Computer Engi-neering (PhD), 8D06103 Computer Science (PhD), 8D06105 Systems Engineering (PhD), 6B05304 Physics (Bachelor), 7M05308 Physics (Master), 7M01501 Physics (pedagogical) (Master), 6B06201 Radioengineering, Electronics and Telecommunication (Bachelor), 7M06201 Radioengineering, Electronics and Telecommunication (Master), 8D06201 Radioengineering, Electronics and Telecommunication (PhD) were assessed on the basis of the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG), the Salzburg Recommendations (applicable for doctorale programmes), and the national or other relevant regulations.

The expert group concludes that the **ESG standards** 1.1 (Policy for quality assurance), 1.2 (Design and approval of programmes), 1.3 (Student-centred learning, teaching and assessment), 1.4 (Student admission, progression, recognition and certification), 1.5 (Teaching staff), 1.6 (Learning resources and student support), 1.7 (Information management), 1.8 (Public information), 1.9 (On-going monitoring and periodic review of programmes) and 1.10 (Cyclical external quality assurance) are fulfilled.

The expert group concludes that the **Salzburg Recommendations** 1 (Research as the basis and the difference), 2 (Critical mass and critical diversity), 3 (Recruitment, admission and status), 4 (Supervision), 5 (Outcomes), 6 (Career development), 7 (Credits), 8 (Quality and accountability), 9 (Internationalisation), 10 (Funding) 11 (Autonomy), 12 (Legal framework) and 13 (Intersectoral collaboration) are fulfilled partially fulfilled.

The assessment criteria are as follows:

Standard 1.1 Policy for quality assurance: Universities have a publicly accessible quality assurance strategy, which is part of their strategic management. This strategy is developed and implemented by internal stakeholder representatives through appropriate structures and processes, involving external stakeholders.

For PhD programmes additionally apply

1. Salzburg Recommendation 8: Quality and accountability
2. Salzburg Recommendation 12: Legal framework

3. Salzburg Recommendation 13: Intersectoral collaboration

The criterion is **fulfilled**.

Standard 1.2 Design and approval of programmes: Universities have procedures for the design and approval of their courses. The courses are designed in such a way that their objectives, including the desired learning outcomes, can be achieved. The qualification obtained during a degree program is clearly defined and communicated; it refers to the corresponding level of the national qualifications framework for higher education and, consequently, the qualifications framework for the European Higher Education Area.

For PhD programmes additionally apply

4. Salzburg Recommendation 11: Autonomy
5. Salzburg Recommendation 1: Research as the basis and the difference
6. Salzburg Recommendation 2: Critical mass and critical diversity
7. Salzburg Recommendation 5: Outcomes
8. Salzburg Recommendation 7: Credits
9. Salzburg Recommendation 9: Internationalisation
10. Salzburg Recommendation 6: Career development

The criterion is **fulfilled.**

Standard 1.3 Student-centred learning, teaching and assessment: Universities ensure that the courses offered are carried out in such a way as to encourage students to play an active role in the design of the learning process and that this approach is also taken into account when assessing students / examinations.

For PhD programmes additionally apply

11. Salzburg Recommendation 4: Supervision

The criterion is **fulfilled**.

Standard 1.4 Student admission, progression, recognition and certification: Universities ensure that the courses offered are carried out in such a way as to encourage students to play an active role in the design of the learning process and that this approach is also taken into account when assessing students / examinations.

For PhD programmes additionally apply

12. Salzburg Recommendation 3: Recruitment, recognition, and certification

The criterion is **fulfilled**.

Standard 1.5 Teaching staff: Universities ensure the competence of their teachers. They use fair and transparent procedures for the recruitment and further training of their employees.

The criterion is **fulfilled**.

Standard 1.6 Learning resources and student support: The university has adequate funding to finance study and teaching and ensure that there is always a sufficient and readily available range of learning and support available for their studies.

For PhD programmes additionally apply

 13. Salzburg Recommendation 10: Funding

The criterion is **fulfilled**.

Standard 1.7 Information management: Universities ensure that they collect, analyze and use the relevant data relevant to the successful conduct of studies and other activities.

The criterion is **fulfilled.**

Standard 1.8 Public information: Universities publish easily understandable, correct, objective, up-to-date and well-accessible information about their activities and courses of study.

The criterion is **fulfilled.**

Standard 1.9 On-going monitoring and periodic review of programmes: Universities are constantly monitoring their courses and regularly reviewing them to ensure that they achieve the goals set and meet the needs of students and society. The tests lead to a continuous improvement of the courses. All affected parties will be informed about any measures planned or resulting from this.

The criterion is **fulfilled.**

Standard 1.10 Cyclical external quality assurance: Universities regularly undergo external quality assurance procedures in accordance with the ESG.

The criterion is **fulfilled.**

National criteria: if applicable, national criteria are integrated in the ESG standards or listed separately.

The peer-review experts note that the recommendations from the previous accreditation procedure have been adequately taken into account.

2 Accreditation Recommendation

The peer-review experts recommend unconditional accreditation / accreditation with conditions / refusal of 6B06102 Information Systems (Bachelor), 7M06102 Information Systems (Master), 8D06101 In-formation Systems (PhD), 7M06101 Computational Linguistics (Master), 8D06102 Computer Engi-neering (PhD), 8D06103 Computer Science (PhD), 8D06105 Systems Engineering (PhD), 6B05304 Physics (Bachelor), 7M05308 Physics (Master), 7M01501 Physics (pedagogical) (Master), 6B06201 Radioengineering, Electronics and Telecommunication (Bachelor), 7M06201 Radioengineering, Electronics and Telecommunication (Master), 8D06201 Radioengineering, Electronics and Tele-communication (PhD).

Unconditional accreditation: Compliance with the standards

The institutional structures and performance fulfil all criteria. In case of substantial compliance, the experts may express recommendations for further improvement. These recommendations may be taken into account by the HEI with regard to the further improvement of quality.

Accreditation with conditions: Partial compliance with the standards

The institutional structures and performance do not completely fulfil at least one criterion. Certain aspects must be revised to ensure compliance with the standards. Unfulfilled criteria are likely to be met and must be fulfilled within the specified time period. As soon as condition(s) are fulfilled, the accreditation is granted for the complete accreditation period.

Refusal of accreditation: Non-compliance regarding one or more standards

The institutional structures and performance do not fulfil one or more standards. Major deficiencies and weaknesses are so significant that they are unlikely to be rectifiable within a reasonable period of time. In this case, the Accreditation Commission refuses the accreditation.

The HEI can suspend the procedure in order to extend the timeframe for rectifying the major deficiencies.

The peer group **proposes the following accreditation**:

- Accreditation without conditions

The peer-review experts recommend the following **recommendations**:

General recommendations for all study programmes:

1. The university should provide opportunities for faculty members to reduce their teaching workload to free up time for research activities.

2. Research sabbaticals for the teaching staff should be introduced to provide more research opportunities (e.g. 6 months every 5 years).

3. The university should offer incentives for longer-term international mobility for both staff and students.

4. Interdisciplinary coworking spaces should be created at the university to enable efficient self-learning and group learning on campus, as well as coworking spaces and individual working places for the professors (as planned in the campus expansion).

Recommendations for study programme 6B06102 Information Systems (Bachelor)

1. The percentage of courses unrelated to the educational programme should be reduced.

Recommendations for study programme 7M06101 Computational Linguistics (Master)

1. The module "Deep Learning" should be an obligatory part of the curriculum.

2. The module handbook should be revised regarding learning objectives.

Recommendations for study programme 8D06105 Systems Engineering (PhD)

1. The content of the modules should be changed to be in line with the title and the objectives of the educational programme.

Recommendations for study programme 6B05304 Physics (Bachelor)

1. The percentage of courses unrelated to the educational programme should be reduced.

Recommendations for study programme 7M01501 Physics (pedagogical) (Master)

1. Disciplines on the methods of solving physical problems should be included into the curriculum.

2. The literature in the module "Interdisciplinary connections of physics" should be updated.

Recommendations for study programme 6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)

1. The percentage of courses unrelated to the educational programme should be reduced.

Recommendations for study programme 7M06201 Radioengineering, Electronics and Telecommunication (Master)

1. The infrastructure should be improved (for example transmission systems, OTDR, Power sources, PMD, Spectrum Analyses in electrical and optical domains) and more practical and laboratory classes should be offered.

Recommendations for study programme 8D06201 Radioengineering, Electronics and Telecommunication (PhD)

1. More PhD students should be sent abroad for the experimental part of the thesis.

V   Decisions of the Accreditation Commission of ACQUIN

Based on the evaluation report of the expert group and the statement of the Higher Education Institution, the Accreditation Commission of ACQUIN has made its decision on the 05 June 2025:

General recommendations for all study programmes:

- The university should provide opportunities for faculty members to reduce their teaching workload to free up time for research activities.

- Research sabbaticals for the teaching staff should be introduced to provide more research opportunities (e.g. 6 months every 5 years).

- The university should offer incentives for longer-term international mobility for both staff and students.

- Interdisciplinary coworking spaces should be created at the university to enable efficient self-learning and group learning on campus, as well as coworking spaces and individual working places for the professors (as planned in the campus expansion).

6B06102 Information Systems (Bachelor)

The study programme "6B06102 Information Systems" (Bachelor) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

- The percentage of courses unrelated to the educational programme should be reduced.

7M06102 Information Systems (Master)

The study programme "7M06102 Information Systems" (Master) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

8D06101 Information Systems (PhD)

The study programme "8D06101 Information Systems" (PhD) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

7M06101 Computational Linguistics (Master)

The study programme "7M06101 Computational Linguistics" (Master) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

- The module "Deep Learning" should be an obligatory part of the curriculum.

- The module handbook should be revised regarding learning objectives.

8D06102 Computer Engineering (PhD)

The study programme "8D06102 Computer Engineering" (PhD) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

8D06103 Computer Science (PhD)

The study programme "8D06103 Computer Science" (PhD) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

8D06105 Systems Engineering (PhD)

The study programme "8D06105 Systems Engineering" (PhD) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:
- The content of the modules should be changed to be in line with the title and the objectives of the educational programme.

6B05304 Physics (Bachelor)

The study programme "6B05304 Physics" (Bachelor) is accredited without any conditions.
The accreditation is valid until 30. September 2032.

The following recommendations are given for the further development of the study programme:

- The percentage of courses unrelated to the educational programme should be reduced.

7M05308 Physics (Master)

The study programme "7M05308 Physics" (Master) is accredited without any conditions.
The accreditation is valid until 30. September 2032.

7M01501 Physics (pedagogical) (Master)

The study programme "7M01501 Physics (pedagogical)" (Master) is accredited without any conditions.
The accreditation is valid until 30. September 2032.

The following recommendations are given for the further development of the study programme:

- Disciplines on the methods of solving physical problems should be included into the curriculum.

- The literature in the module "Interdisciplinary connections of physics" should be updated.

6B06201 Radioengineering, Electronics and Telecommunication (Bachelor)

The study programme "6B06201 Radioengineering, Electronics and Telecommunication" (Bachelor) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

- The percentage of courses unrelated to the educational programme should be reduced.

7M06201 Radioengineering, Electronics and Telecommunication (Master)

The study programme "7M06201 Radioengineering, Electronics and Telecommunication" (Master) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

- The infrastructure should be improved (for example transmission systems, OTDR, Power sources, PMD, Spectrum Analyses in electrical and optical domains) and more practical and laboratory classes should be offered.

8D06201 Radioengineering, Electronics and Telecommunication (PhD)

The study programme "8D06201 Radioengineering, Electronics and Telecommunication" (PhD) is accredited without any conditions.
The accreditation is valid until 30. September 2031.

The following recommendations are given for the further development of the study programme:

- More PhD students should be sent abroad for the experimental part of the thesis.