



Development plan for the joint educational program «Agrobiotechnology» (double degree, OHPE - partner - Patrice Lumumba Peoples' Friendship University of Russia (Moscow, Russia) for 2023 - 2027.

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Reviewed

at a meeting of the Department of Agriculture and Plant Growing

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## **1 Characteristics of the educational program**

The educational program 7M08111 «Agrobiotechnology» was jointly developed with a foreign partner university and is a double-degree program. OHPE - partner - Peoples' Friendship University of Russia. Patrice Lumumba (Moscow, Russia).

NJSC “S. Seifullin Kazakh Agrotechnical Research University” is one of the leading universities, constantly searching for ways to develop to achieve high levels among universities that train competitive specialists in relevant fields. In order to deepen integration into the global scientific and educational space, mastering advanced knowledge and technologies, KATIU established cooperation in 2022 and signed a memorandum of understanding with the Peoples' Friendship University of Russia. Patrice Lumumba, the world's leading research university, including an agricultural one.

Educational program 7M08111 «Agrobiotechnology» was developed in 2023 together with scientists from the Agrobiotechnological Institute of the Peoples' Friendship University of Russia. Patrice Lumumba. Master's degree students within the framework of the OP "Agrobiotechnology" study for the first year at KATRU, the second - at RUDN University, and masters who complete this type of training, in accordance with the Agreement, will be awarded diplomas from both universities. Students are trained in this educational program at a high scientific and pedagogical level, all classes in special disciplines are provided with material and technical devices and equipment. Students of the OP «Agrobiotechnology» are involved in the implementation of funded projects, and conduct research work at a high scientific level.

The goal of the educational program «Agrobiotechnology» is to train highly qualified specialists together with RUDN University (RF) at the international level, with in-depth knowledge of fundamental and applied problems in the study of plant objects, with the skills of scientific justification and a practical approach to solve them, in accordance with the requirements of employers and professional standards in the field of crop production.

### **1.1 Internal conditions for the development of the educational program**

To implement the educational program “Agrobiotechnology”, there is appropriate material and technical equipment. The department has classrooms for theoretical training and laboratory rooms.

Auditoriums, subject rooms indicating the name and area:

No. 5108 - 53 sq.m. 20 seats, multimedia digital podium 190D PODIUM. Interwrite DualBoard 1277v interactive whiteboard from stationary projector, climate chamber - TX-80. No. 5208 - 31.5 sq.m., 28 seats, EPSON interactive projector, Dell/Core I3/3300/4096/500/Intel HD Graphi/DVD/Realtek/Realtek system unit. No. 5210 - 41.5 sq. m 24 seats Interactive projector + computer included, drying cabinet. No. 5203 (lecture auditorium), 85.3 sq.m., 78 seats. Interactive projector + computer included.

Training laboratories (sq.m.) and a list of technical teaching aids, educational and educational laboratory equipment indicating the type:

No. 5218 laboratory for assessing the quality of crop products, 51.4 sq.m., 16 seats, interactive board interwrite DualBoard 1277 in comp. with static, m/m projector, Grain moisture analyzer EVLAS-2M, Whole grain infrared analyzer, Apparatus for mixing samples BIS-1B, Diaphanoscope, IR analyzer SPECTRAN, Mill for plant samples, Laboratory mill LMTs-1M, Set of test sieves for wheat grain analysis - 10pcs, Fat analyzer using the Soxhlet method, Nitrachek 404, Equipment for determining the baking properties of grain and flour, Penetrometer, Device for measuring the dimensional stability of bread IFK-250, Device for determining the falling number PChP-5, Device for determining the volume of bread OHL -2, Device RZ BPL, Purka liter with scales without verification with electronic scales, System of instruments for determining the quantity and quality of gluten, Spectrum level 4, Dough mixer U1ETK-1M, Refrigerator, Drying cabinet -2 pcs., Set of sieves for controlling contamination of SPL- 30 budget-5pcs, Juicer, Automotive probe, Bag probe, Sampling probe Electric oven with convection, Laboratory mill, Scholander chamber, Laboratory for the express

method of mineral nutrition based on FED, Steel fume cabinet, laboratory table with lamp - 6 pcs, laboratory table - 5 pieces.

No. 5204 laboratory of seed production of agricultural crops, 54 sq.m., 16 seats. Interactive projector EIKILC-XIP2600, system unit Dell/Core I3/3300/4096/500/Intel HD Graphi/DVD/Realtek/Realtek/, Weighing table, Laboratory table - 3 pcs., Laboratory table with lamp and shelf - 7 pcs., Cabinet, Chair with 2 soft elements - 15 pcs., Rolling cabinet with three drawers - 3 pcs., laboratory stool - 3 pcs., metal cabinet - 5 pcs., seed counter, laboratory scales, laboratory thresher MKL-1-2 pcs., portable area meter sheet CI-203-2pcs, collapsible boards, dry air thermostat TS-200 SPU, Thermostat -5pcs.

Computer classes, computers, equipment, furniture, cabinets for individual use, video cameras: computer class No. 5215, 31.8 sq.m. 9 seats, Monoblock - 10 pcs, HP LaserJet 1022 laser printer, HP ScanJet G2410 scanner, HP LaserJet Pro1025 laser printer, MFP copier, Computer table - 10 pcs, Student chair - 16 pcs, Student blackboard, Wardrobe, Armchair, Table 2- x pedestal, speaker + web camera.

computer class No. 5211, 20.5 sq.m., 9 seats Monoblock - 10 pcs., Computer included. laser printer HP LaserJet 1102, acoustic speaker + web camera, computer table - 10 pcs., student chairs - 17 pcs.

#### Library:

The library is located in the main building - 1835 sq.m. 1. Library fund – 1360320 units. 2. Republican interuniversity electronic library (books and articles in Kazakh, Russian, English) - 43,000 books, 47,891 articles. 3. Electronic library of teaching staff at KATU University – 1983 units. 4. Russian universal scientific electronic library – 3225 scientific journals. 6. EB “LAN” (technical and agricultural literature) – 33898 books, 101 magazines. 5. Access to Springer Link, Thomson Reuters, Elsevier databases.

Characteristics of the equipment available at the Department of Agriculture and Plant Growing to provide training in the EP “Agrobiotechnology”:

1. Grain moisture analyzer EVLAS-2M, 2014. The Evlas - 2M moisture analyzer is a compact, affordable and high-precision moisture analyzer, which is ideal for product quality control, as well as for providing incoming control in receiving departments. The ease of maintenance and operation allows you to attract personnel of any qualification. Equipment: sample bowls - 15 pcs., tweezers, spatula, methods for working with products, 5 gram weight (M1 accuracy, with verification certificate).

2. Infrared whole grain analyzer ZX-50, 2014. The ZX-50 Infrared Whole Grain Analyzer is designed to measure the mass fraction of protein, moisture and raw gluten in wheat. This is a microprocessor device that allows you to display measurement results on a liquid crystal screen and work in conjunction with a personal computer to process measurement results and generate calibrations.

3. Analytical sieving machine AS 200 Control, 2015. Used for research and development, quality control of raw materials and finished products, as well as in monitoring production activities. The controlled electromagnetic drive guarantees optimal adaptation to each substance. Fractions with a narrow particle size distribution can be obtained even with very short sieving times. Use separation, fractionation, particle size determination. Scope of application - Biology, Agriculture, Chemistry / Plastics, geology / metallurgy, mechanical engineering / electronics, medicine / pharmaceuticals, environment / processing, food products, glass / ceramics, building materials. Source material - powders, bulk materials, suspensions. Measuring range\*20 µm - 25 mm. Material movement - three-dimensional sieving - vertical movement with angular momentum. Maximum amount of material 3 kg.

4. Apparatus for mixing samples BIS-1B, 2005. The device BIS-1U (grain divider) is designed for mixing a grain sample and separating average and average daily samples from it, dividing the average sample in half and separating a sample weighing 25, 50 and 100 g.

5. Laboratory scales Cas 1200, 2020. Highly accurate scale with stainless steel platform and easy calibration in user mode. There are 8 units of mass measurement, counting mode and percentage weighing mode, accounting for tare weight. Includes: protective case and battery. Accuracy class:

high. Easy calibration in user mode. Stainless steel platform. Large LCD display with backlight. Powered from mains via adapter or battery. Convenient navigation key. Automatic shutdown. RS-232 interface.

6. Fat analyzer using the Soxhlet method E-812 SOX, 2013. The reference Soxhlet extraction is characterized by the fact that the extraction is carried out with a condensed (cold) solvent. Technical characteristics: Extraction time, 150 min; Extract volume, 130 ml; Sample container volume (glass test tube), 115 ml; Sleeve size, 25x100, 33x94 mm; Sleeve material, cellulose; Temperature range (boiling points), <70 °C; Maximum cooling water consumption, 72 l/h; Maximum water pressure, 4 bar; Samples per batch, 2 pcs; The solvents used are hexane, chloroform, petroleum ether, diethyl ether; Materials in contact with the sample - borosilicate glass 3.3, FPM, FEP, Fluorez, Ematal; Compatible with 6-position hydrolysis apparatus E-416; Power, 1200 W.

7. Scholander's Pump-Up Chamber, PMS, 2018. Material of the working pressure chamber: anodized aluminum. Analog pressure gauge. Maximum pressure: 20 bar (2 MPa). The delivery set includes one cover for the pressure chamber, which can be selected from three types of covers. Each type of cover is also available as a separate accessory. The water potential of a plant reflects the saturation of plant tissues with water and the ability of the xylem to retain moisture. Assessment of the water potential of plants is necessary for an objective determination of water starvation (water stress) of cultivated plants or, conversely, their oversaturation with water. A separate area of application of Scholander chambers is the study of the formation of cavitation in the xylem when high pressure is applied to a plant cutting.

8. Feed analyzer (yield sensor) GreenSeeker, 2017 The GreenSeeker portable yield sensor is an easy and simple to use measuring device that can be used to determine the health and growth of a crop. Indicators taken from the portable GreenSeeker sensor can be used to make non-subjective decisions about the amount of fertilizer to apply to crops, resulting in more efficient use of fertilizers - which benefits both the farmer and the environment.

9. Scales MWP-600 N, 2012 Accuracy class: 2-high, 8 units of mass measurement (grams, carats, etc.). Various operating modes, including counting mode and percentage weighing mode. Easy calibration in user mode. Stainless steel platform. Large LCD display with backlight. Powered from mains via adapter or batteries. Subtracting tare mass. Convenient navigation key. A battery is included. Automatic shutdown membrane keyboard with navigation key; RS-232C interface; calibration with one keystroke.

10. Field moisture meter with temperature sensor Aquaterr T-350, 2013. The professional series of moisture meters T-350 (Aquaterr Instruments & Automation, LLC) makes it possible to quickly and accurately determine soil moisture and temperature by direct contact measurement. The operating principle is based on high-frequency volumetric measurement. Other soil characteristics (pH, salt content, temperature) do not affect the readings. The probe of the device is made of high-strength aircraft aluminum and stainless steel, which gives it increased strength and allows the measuring sensor to be immersed to different depths up to 76 cm.

11. Machine for wet dressing of small batches of seeds Hege 11, 2014. Thanks to the three working containers HEGE 11 (1, 7 and 14.5 l), it is possible to treat seeds in small batches: from 20 to 3000 g. The principle of operation is that the seed material, thanks to the rotating double bottom and centrifugal force in the working container, slides along the outer wall, and the spraying disk evenly distributes the disinfectant throughout the entire seed material.

12. Seed purifier MLN, 2010 Provides secondary purification of all types of seeds to the required level of quality in samples weighing from 1 kg for sowing or laboratory analysis. The multi-step process ensures thorough and gentle cleaning with virtually no noise or vibration. An additional advantage is the convenient location of the control elements and the possibility of quick changeover.

13. Portable pulsed fluorometer-analyzer of photosynthesis output MINI-PAM II, Walz MINI-PAM-II/B, 2023. The MINI-PAM-II fluorimeter is based on the study of photosynthesis by measuring chlorophyll fluorescence using the pulse-amplitude modulation (PAM) method. MINI-PAM-II is a portable solution ideal for field use.

14. Soil density meter Wile Soil, 2013. A soil density meter (penetrometer) is an instrument that measures the density/resistivity of soil when inserted into the soil.

The density meter is supplied with two tips: a 1.27 cm diameter for taking density measurements in hard soil and a 1.91 cm diameter for taking density measurements in soft soil.

15. Bunch thresher LD 350, 2013 The LD 350 is suitable for threshing, de-awning and grain cleaning of crops such as: clover, grasses for seeds, rice, vegetable crops for seeds, grain crops, lentils and many others - without crushing grains, losses, and most importantly - mixing.

16. Refractometer-salt meter PAL-SALT, 2020. ATAGO salinity meter is widely used in various industries. For food products, in addition to checking the salt content, a salt tester is also used to ensure that the correct amount of salt has been added. In industry, the salinity meter is widely used for testing resistance to aggressive salt action, PAL-SALT is a universal pocket-sized salinity meter with a wide range of 0.00-10.00%.

17. 05.07 Cylindrical soil drill, 2018 With this kit you can conduct a general study of soil structure. The kit allows you to take a soil sample with a preserving structure of 100 cm in length and 90 mm in diameter. The cylindrical drill is driven into the soil using a gasoline jackhammer (or an electric hammer). The drill has a removable side cover, which allows for preliminary analysis of the selected sample on site. The standard set includes: a gasoline jackhammer, a cylindrical stainless steel drill, a hand drill, an extraction device for removing the sampler, containers for transporting samples, and other accessories.

18. Seed counter S25, 2015 Control via a 10-inch touch screen (keyboard and mouse also possible). Seed size ranges from 0.5 to 18 mm. Accurate calculation of the required quantity with an accuracy of 100%. High counting speed (up to 125 seeds per second). The counting, weight and thousand seed weight results are saved in an Excel spreadsheet. Automatic calculation of the mass of a thousand grains or the mass of a thousand seeds. Automatic calibration for all types of seed. Configuration of external devices (barcode reader, scales) is performed directly on the PC. Ergonomic and fast unloading. Low maintenance costs, easy cleaning.

19. Dry air thermostat TS-200 SPU, 2019. Chamber volume, l 200. Operating temperature range, °C troom. +5 ... +60. The maximum deviation of the average temperature of any point in the working volume of the chamber from the set one, in steady-state thermal conditions in the range, °C, no more: from (troom +5) to +40 inclusive; from +41 to +60. Time to establish the operating mode when heated from room temperature to 60 °C, min, no more than 120. Continuous operation time, hours, no less than 500.

20. Levenhuk MED D10T LCD digital microscope, trinocular, manufactured in 2022. Optics material: optical glass with antifungal coating. The nozzle rotates 360°. The tilt angle of the eyepiece nozzle is at least 30°. Magnification, at least 40–1000 times. The diameter of the eyepiece tube, mm, is not less than 23.2. Wide-field eyepieces with diopter adjustment WF 10x/18 mm (2 pcs.). Achromatic lenses: 4x, 10x, 40xs, 100xs (oil). Revolving device for 4 lenses. Interpupillary distance, mm no more than 48–75. Subject table, mm no less than 125x130, mechanical two-layer, with preparation guide. The range of movement of the object table, mm, is not less than 70/50. Diopter correction of eyepieces, D ±5. Abbe condenser N.A. 1.25 with iris diaphragm and filter holder. Iris diaphragm. Focusing is coaxial, coarse (30 mm) and fine (0.002 mm). Metal body. LED backlight. There is brightness adjustment. Power source at least 100–240V. Backlight type: at least 5 W. Light filters blue, green, yellow. The number of megapixels is at least 5. The sensitive element is 1/2.5. Pixel size, microns, at least 2.2x2.2. Frame rate 15.

21. Laboratory spikelet thresher MKL-1, 2021. Small-sized laboratory thresher. The thresher is designed for threshing individual ears or bunches (up to 10-15 ears) of grain crops (wheat, barley, etc.) with the separation of light impurities. Productivity is not less than 120-240 ears/hour, not less than 60-120 bunches/hour. Electric motor power is at least 0.25 kW. The threshing apparatus is a whip type. Weight no more than 25.5 kg.

22. Portable sheet area meter CI-203, 2022 The device measures/calculates the following leaf parameters: area, length, width, perimeter, number of leaf gaps, geometric shape coefficient, aspect ratio. The maximum sheet thickness for measurements is not less than 1.4 cm. The maximum sheet

width is not less than 15 cm. The maximum sheet length is not less than 300 cm. Scanning resolution is not less than 0.01 cm<sup>2</sup>. Scanning accuracy is no less than  $\pm 1\%$  for samples with leaf area  $>10$  cm<sup>2</sup>. Interface for communication with a computer USB. The scanner emitter type is laser, emission is at least 670 nm. Memory capacity of at least 8000 measurements. Display type TFT LCD 320x240. Scanning speed of at least 200 mm/s. Battery: Rechargeable battery, NiMH, 7.2 V. Battery capacity is at least 250 scans without recharging. Operating temperature range 0 – 50 °C.

23. Laboratory refrigerator POZIS HL-250, 2022. Total volume 250 l. Refrigerator volume, 170 l. Freezer volume 80 l. Temperature in the refrigerator compartment +2...+15°C. Temperature in the freezer °C -25...-10. Overall dimensions 600×610×1450 mm. Weight 68 kg.

24. Water distiller AE-10, 2023 Purpose: obtaining distilled water of type 3 according to GOST R 58144-2018 «Distilled water» Capacity, l/h 10.0 (-10%). Wall version.

25. LI-6400XT – portable system for analyzing photosynthesis processes, 2016. The LI-6400XT system, in its basic configuration, allows high-precision measurements of plant gas exchange, both in office and in the field, without damaging the sample. The system, as standard, also allows the user to set and accurately control the humidity, CO<sub>2</sub> concentration and temperature (within  $\pm 6^\circ\text{C}$  of ambient temperature) of the atmosphere surrounding the sample in the measurement chamber. Complete with a fluorometer (supplied separately), the system allows synchronous measurements of gas exchange and chlorophyll fluorescence on the same leaf surface. The system has high accuracy and, at the same time, low weight.

26. Titrator Titrand, 2014 Titrand potentiometric titrators have been developed to meet stringent titration requirements. Titrands come with a wide range of features that are optimal even for use in highly regulated industries. Automatic titrators are capable of performing all common titration types and offer a variety of automation and control options.

27. Mechanical grain cutter, 2023 The cutter allows you to carefully and accurately cut through wheat and barley grains to expose the sprout and assess the viability of the seeds. The cut grains are separated from each other and then collected in small trays located inside the cutter, which ensures minimal grain loss. The simplicity of the design allows you to work quickly and efficiently. The cutter is made of stainless steel, which simplifies its cleaning; requires minimal maintenance; easy to maintain (lubrication) GOST 12038-84.

28. Universal grain divider UDZ-1, 2023 The universal grain divider UDZ-1M is designed for mixing and separating representative samples of grains, legumes and oilseeds from a sample of no more than 8 liters. The sample is separated by the method of multiple quartering of the grain flow in successively located dividing and mixing sections.

29. Table for disassembling and visual analysis of seeds, SVAZ-900, 2023. Equipped with its own backlight and a powerful magnifying glass with LED illumination. The left and right borders of the transparent part of the table are made with protruding edges to prevent seeds from falling off. The glass top can be easily removed to replace the lamp. Original holes for convenient seed screening. Wooden structure, ultra-thin viewing platform, additional illumination of the desktop with a magnifying glass.

30. Portable system for studying plant gas exchange and photosynthesis processes, 2016. allows for high-precision measurements of plant gas exchange, both in office and in the field, without damaging the sample. The system also allows the user to set and clearly control the humidity, CO<sub>2</sub> concentration and temperature (within  $\pm 6^\circ\text{C}$  of ambient temperature) of the atmosphere surrounding the sample in the measuring chamber. Complete with a fluorometer, the system allows synchronous measurements of gas exchange and chlorophyll fluorescence on the same leaf surface.

Master's students of the OP «Agrobiotechnology» conduct research on the basis of the Agroecological Test Center (laboratory), which was created in 2019 on the basis of the NJSC «S.Seifullin Kazakh Agrotechnical Research University» and is accredited in the state system of technical regulation of the Republic of Kazakhstan in accordance with the requirements of ST RK ISO /IEC 17025 - 2019 (accreditation certificate No. KZ.T.01.2238 dated July 22, 2019). The agroecological testing center has the entire necessary base of regulatory documents - GOSTs, technical conditions and regulations, regulatory documents for research methods. Equipped with modern



domestic and European equipment, allowing us to provide high-quality services in the field of soil science, agrochemistry and ecology. Students using the center's equipment, under the guidance of a supervisor, conduct experiments and research on the topic of their dissertation. In addition, research centers and large farms are the bases of practice for students of the EP «Agrobiotechnology».

## **1.2 Information about the teaching staff implementing the educational program**

The educational activities of EP 7M08111 «Agrobiotechnology» in the 1st year of study are carried out by 2 doctors of science, 12 candidates of science, 4 PhD (Doctor of Philosophy) and 3 masters. The degree of consistency is 85.71%, which meets the requirements. The second year of study is provided by the teaching staff of RUDN, however, if the student wishes to complete with only 1 diploma, the teaching staff of the Department of Agriculture and Plant Growing can fully provide the EP disciplines.

EP teachers constantly improve their professional level in accordance with the Law of the Republic of Kazakhstan «On Education»; advanced training is planned once every 5 years at the international or republican level.

Advanced training of teaching staff in the educational program was carried out in various areas. The choice of directions is determined by the need to improve pedagogical skills, introduce innovative teaching technologies into the educational process in EP, and improve the content of taught disciplines in accordance with modern scientific requirements. Within the framework of KazATIU named after. S. Seifullina teaching staff of the department improved their qualifications in the following courses: «Distance learning», «Studying state and foreign languages», etc. Outside the university, advanced training was carried out on the basis of the IPK, in the central universities of Kazakhstan.

Teachers are proficient in modern methods of assessing learning outcomes, such as tests, portfolios, case measures, contextual tasks, and creating projects.

The educational program is focused on the formation of basic and professional competencies related to research and practical activities, taking into account the requirements of employers and partner universities, as well as the needs and interests of undergraduates. Increased fundamental training within the educational program will allow graduates of the master's program to continue their studies in doctoral studies.

The teaching staff of the department is engaged in scientific research work taking into account the needs of industries. There are publications of teaching staff articles in journals included in the high-ranking databases Web of Science, Scopus, Committee for Quality Assurance in the Sphere of Education of the Ministry of Education of the Republic of Kazakhstan

## 2 Strategic directions, goals, objectives, target indicators, activities and outcome indicators

No	Activities	Unit of measurement.	In the planning period				
			2023	2024	2025	2026	2027
Formation of a new type of educated scientific personality that meets the needs of the regional economy and the international labor market							
1	Contingent of EP students	чел	3	5	7	10	10
2	Share of winners of international scientific project competitions in the last three years	%	0.10	0.10	0.10	0.10	0.10
3	Share of attracting foreign students	%	0.10	0.20	0.20	0.20	0.20
4	Share of innovative EP disciplines developed at the request of industry associations and enterprises	%	0.10	0.20	0.20	0.20	0.20
5	Share of foreign experts involved in teaching activities	%	-	0.40	0.40	0.40	0.40
6	Proportion of employed graduates	%	100	100	100	100	100
Formation of the university's digital ecosystem (Creation of a "SMART University")							
1	Share of use of the world digital library in the implementation of educational programs	%	100	100	100	100	100
Involvement in scientific research							
1	Number of scientists who completed internships in leading scientific centers of the world within the framework of the "500 Scientists" program, involved in the EP	ед.	1	2	2	2	2
2	Share of EP students' involvement in funded scientific projects	%	0.10	0.10	0.10	0.10	0.20
Expansion of the partner environment							
1	The share of students who went abroad under the academic mobility program	%	0.08	0.09	0.1	0.1	0.1
2	Number of foreign students	чел.	1	2	2	3	3
Introduction of a new personnel policy							
1	Number of research institute scientists, employers in the implementation of the educational program	чел.	1	2	2	3	3


## 3 Activities to reduce the impact of risks for the educational program

Possible risk	Risk mitigation measures	Responsibility and implementation deadlines
<b>external risks</b>		
1. Highly competitive environment in the educational segment	Development and implementation of distance courses in the educational process, incl. MOOC for use by external users	Teaching staff of the department, during each academic year
	Increasing the number of copyright certificates from material developed by teaching staff	Teaching staff of the department, during each academic year
2. Lack of modern equipment in laboratories	Equipping with modern equipment and instruments through funding from the Global Fund, PCF and international projects	Teaching staff of the department, during each academic year
3. Low motivation to use the e-learning system	Training at specialized trainings and educational seminars	head of student assessment of teaching, teaching staff for 2023-2027.
4. Administrative risk when	Strict compliance with all	head of student assessment of


implementing a double-diploma educational program	requirements of the legislation of the Republic of Kazakhstan and the Russian Federation, standards, regulations and instructions	teaching, teaching staff for 2023-2027.
<b>internal risks</b>		
1. Insufficient level of teaching staff proficiency in foreign languages	Planning teaching for teaching staff in advanced study of a foreign language	head of department, at least 2 teachers per academic year
2. Insufficient funding for research work	Increase in the number of contractual topics and scientific projects	head of department, teaching staff

All actions necessary when moving students to a partner university are provided for and discussed in the «Agreement on cooperation in science and education between the Peoples' Friendship University of Russia (RUDN) and «S. Seifullin Kazakh Agrotechnical Research University» from January 31, 2023


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