



ROADMAP

for the Faculty of Biology and Biotechnology's
University Ranking Advancement
in QS World University Rankings and THE Impact
Rankings.



The main criteria for QS ranking

Al-Farabi Kazakh National University 230

1. Academic Reputation
2. Publication Activity of Faculty
3. Faculty-to-Student Ratio
4. Employer Reputation
5. Percentage of Foreign Professors and Students in Core Educational Programs
- 6. Sustainability of Development**
- 7. International Research Network**
- 8. Employment Indicators.**

The main criteria for THE IR

In accordance with UN Sustainable Development Goal 17 (SDG17)

Al-Farabi Kazakh National University - 1000-1200

1. Citation Impact of Publications
2. Scientific and Academic Reputation
3. Ratio of Successfully Defended Dissertations to Faculty Size
4. Research Funding Volume from External Companies
5. Faculty-to-Student Ratio
6. Ratio of Publications to Faculty Size
7. Government Research Funding Ratio to Total Research Budget of the University
8. Ratio of International and Local Faculty Members
9. Ratio of International and Local Students
10. Ratio of Successfully Defended Ph.D. Dissertations to the Number of Bachelor's Graduates Pursuing Master's Degrees
11. Average Compensation for Faculty Members.

№	Event Names	Completion Form (Planned Value, Supporting Document, Projects, Link, etc.)	Deadlines	Responsible Persons (Full Names)
1	Updating the List of Academic Experts: Kazakhstani, International, and CIS Countries	Updating the Academic Experts Database for the Department to 100%.	October 2023	Basigaraev Zh.M.
2	Updating the List of Employers: Kazakhstani, International, and CIS Countries	Updating the Department's Academic Experts Database to 100%.	October 2023	Basigaraev Zh.M.
3	Working with Academic Experts and Employer Experts to Facilitate Their Registration on QS and THE Websites for Participation in Surveys.	At least 200 for each indicator per department.	January 2024	Basigaraev Zh.M.
4	Attracting the Participation of Foreign Advisors of Departmental Doctoral Programs in Surveys.	Correspondence with Foreign Heads of Departmental Doctoral Programs.	Within a year	Faculty of Biology and Biotechnology Faculty Members, Department Heads.

№	Event Names	Completion Form (Planned Value, Supporting Document, Projects, Links, etc.)	Deadlines	Responsible Individuals (Full Name, Position)
5	Increasing the Number of Faculty's Scientific Articles Published in High-Impact Journals (Q1-Q2) Indexed in the Scopus Database.	At least 20 published articles per department.	Within a year	Department Heads
6	Increasing the Number of Published Articles in Collaboration with High-Impact International Researchers in Journals Indexed in Scopus and Web of Science.	At least 2 published articles per full-time faculty member of the faculty.	Within a year	Faculty Members of the Faculty of Biology and Biotechnology
7	Increasing the Number of Published Articles in Collaboration with High-Impact International Researchers, including English-language Journals and the Series in KazNU Bulletin.	At least 1 published article per full-time faculty member of the faculty.	Within a year	Faculty Members of the Faculty of Biology and Biotechnology
8	Conducting Seminars and Training Workshops on Scientific Publication Writing and More.	Increasing Faculty Publication Activity.	Within a year	Department Heads of Departments for Ph.D Research and Master's Studies

№	Event Names	Completion Form (Planned Value, Supporting Document, Projects, Links, etc.)	Deadlines	Responsible Individuals (Full Name, Position)
9	Searching for an International Competitions Database and Organizing the Submission of an International Application.	At least 1 application per department.	Within a year	Department Heads
10	Inviting Foreign Professors with a Track Record of Publishing a Minimum of 5 Articles in Scopus Journals no Lower than Q2 in the Last 3 Years.	At least 3 invited foreign professors per department.	Within a year	Department Heads
11	Establishing Collaboration with Foreign Universities.	At least 3 cooperation agreements with foreign universities and research centers per department.	Within a year	Department Heads and Deputy Heads of Departments for Research and Master's Studies
12	Updating the Register of Department Graduates Working Abroad for the Purpose of Further Attracting Them as Foreign Faculty.	Registry of Talented Graduates from Departments Working Abroad	Within a year	Professor Shalakhmetova T.M.

№	Event Names	Completion Form (Planned Value, Supporting Document, Projects, Links, etc.)	Deadlines	Responsible Individuals (Full Name, Position)
13	Participation in Grant Competitions and Program-Targeted Financing, and Increasing the Number of Implemented Research Projects (Grant Funding, Program Targeting, and Young Scientist Initiatives).	Ensure that on each department, every faculty member who meets the criteria for research metrics submits a project application.	Within a year	Department Heads
14	Conducting Training and Consultations on Writing Applications for Participation in Commercialization and Program-Targeted Financing Competitions. Assisting in Preliminary Economic Marketing for Finding Co-Funding and Subsequent Commercialization of Research Results.	Ensure that on each department, there is a submission of either the first project application for commercialization or the first application for program-targeted funding (PTF).	Within a year	Ultanbekova G.D., Department Head.
15	Establishment and Consultative Support for Student Start-up Companies.	Ensure the implementation of student start-up companies (1 per department) at the faculty.	Within a year	Sharakhmetov S., Department Head.

№	Event Names	Completion Form (Planned Value, Supporting Document, Projects, Links, etc.)	Deadlines	Responsible Individuals (Full Name, Position)
16	Updating the Department's Website and Adding Current Content.	The Updated Website of the Faculty.	Within a year	Meldybekova A.A. Responsibles for the Department's Website
17	Collaborating with Foreign Researchers Through Social and Academic Networks.	Collaboration with Leading Professors from Foreign Universities.	Within a year	Faculty Members of the Faculty of Biology and Biotechnology
18	Promoting Information About Faculty Members' Scientific Articles Published in High-Impact Journals on Social Media.	Posting Information Posts on Facebook, LinkedIn, and Other Social Media Platforms.	Within a year	Deputy Heads of Departments, Faculty Members of the Faculty of Biology and Biotechnology
19	Compiling a Report and Promoting Information on the Faculty's Social Media and Website about Events Held as Part of UN Sustainable Development Goals (SDG) Initiatives.	Collecting and Providing Information on Events Held as Part of UN Sustainable Development Goals (SDG) Initiatives.	Within a year	Altibaeva N.A.

17 United Nations Sustainable Development Goals (SDGs).



SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">1 Eradication of Poverty</p>	<p>Support for Students from Underprivileged Families.</p>	<p>1. Establishment and Consultative Support for Student Start-up Companies (1 per department).</p> <p>2. Engaging Students in Paid Scientific Projects (at least 1 student per 1 project).</p>	<p>1. Supporting High-Achieving Students from Large and Underprivileged Families with the Provision of Individual Scholarships (5 per department).</p>	<p>1. Participation in Charity Actions.</p>
				<p>2. Round Table Discussion: Eradicating Poverty Through Modern Biotechnology.</p>
				<p>3. Educational Activities: Қайырымдылық - асыл қасиет.</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">2 Ending hunger</p>	<ul style="list-style-type: none"> - Developing High-Quality and Up-to-Date Programs that Meet the Needs and Requirements of International Universities and Students. - Conducting Research Projects Aimed at Ensuring Food Security. 	<ol style="list-style-type: none"> 1. Involvement of Faculty Members and Students in Project Implementation: <ul style="list-style-type: none"> - Grant Funding (GF) - 1 project. Scientific Supervisor: Savitskaya I.S. - 'Жас Ғалым' (Young Scientist) - 1 project. Scientific Supervisor: Kanalbek G.K. 2. Commercialization of Functional Food Products for Dietary Prevention - Yogurt and Curd Paste 'АрҒЫМАҚ'. 	<ol style="list-style-type: none"> 1. Development of the Master's Program 'Agrobiotechnology' (major: Biotechnology) under the Educational Program Code M082. 2. Development of the Master's Program 'Agroecology' (major: Biology) under the Educational Program Code M080. 3. Development of the Master's Program 'Agrogenetics' (major: Agronomy) under the Educational Program Code 7M081, within the Study Area 7M08 'Agriculture and Bioresources.' 4. Conducting Professional Development Courses on 'Plant Genetics and Breeding,' 'Molecular Biology and Genetic Engineering,' and 'Biostatistics' for Plant Breeders and Farmers, and the course 'Methods of Fisheries Research' for Fishermen. 5. Organizing Seminars and Open Lessons on Food Security and 	<p>Conducting 'Auyzashar' in the Student Dormitory during the month of Ramadan.</p> <p>Celebrating Nowruz in the Student Dormitory during the month of Ramadan.</p> <p>Organizing a Vegetable and Fruit Fair from the Agrobiostation.</p> <p>Round Table Discussion on the Contribution of Biotechnology to Addressing Hunger Issues</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">3 Healthy Lifestyle and Well-Being</p>	<p>Conducting Scientific Research, Developing, and Implementing Educational Programs Aimed at Improving the Health and Well-Being of Society.</p>	<p>1. Involvement of Faculty Members and Students in Project Implementation: Grant Funding (GF) - 8 projects. Supervisors: Тулеуханов С.Т. Бигалиев А.Б. Бисенбаев А.К. Кустубаева А.М. Абдрасулова Ж.А. Өдіріс А. Тайпакова С.М. Смекенов И.</p> <p>2. International Conference 'Nanotechnology in Biology and Medicine' dedicated to the 80th Anniversary of Professor Anatoliy Timofeyevich Ivashchenko and the 90th Anniversary of Al-Farabi Kazakh National University.</p>	<p>1. Development of a Joint Master's Program in Medical Bioengineering with Shenzhen University, China (for doctoral studies).</p> <p>2. Preparation of Graduates in the Following Educational Programs at the Bachelor's and Master's Levels: Biomedicine (158) Biotechnology (428) Neuroscience (56) Virology (5) Biomedical Engineering (1) Food Biotechnology (2) Reproductive Genetics (5)</p> <p>3. Development of Minor Programs in the Interdisciplinary Field of 'Molecular Diagnostics and Genetic Expertise' in collaboration with the Faculty of Medicine and Healthcare and the</p>	<p>1. Round Table Discussion: Functional Food Products. 2. Panel Discussion with Students on the Topic 'Healthy Eating as a Lifestyle.' 3. Panel Discussion on the Topic 'Eradicating Harmful Habits.' 4. Seminar for Students on the Dangers of Various Dependencies (smoking, alcohol, narcotics). 5. Round Table Discussion: Reducing Maternal and Infant Mortality."</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">4 Quality Education for All</p>	<p>Enhancement of Educational Processes and the Creation of Accessible Educational Resources for All Strata of Society. Improvement of the Quality of Scientific Education and Student Training at All Levels</p>	<p>1. Updating Faculty Profiles on Google Scholar by Adding Information on Published Articles.</p> <p>2. The 3rd International Scientific and Practical Conference 'Integration of Sciences: Biophysics, Biomedicine, Neuroscience' dedicated to the 75th Anniversary of Associate Professor in Biophysics, Biomedicine, and Neuroscience, Ph.D. Z.A. Askarova, and the 90th Anniversary of Al-Farabi Kazakh National University.</p> <p>3. International Scientific and Practical Conference 'Biological and Sustainable Development of Nature and Society' commemorating the 90th Anniversary of Al-Farabi Kazakh National University."</p>	<p>1. Accreditation of Educational Programs in: Biomedicine Virology Microbiology Environmental Bioengineering Bioengineering</p> <p>2. Development of Joint Master's Programs in: Medical Bioengineering (with Shenzhen University, China) for Doctoral Studies Food Biotechnology (with Loraine University, France) for Master's Studies Agroengineering (with RUDN, Moscow, Russia) for Master's Studies Genetics (with Novosibirsk State University, Russia) for Master's Studies</p> <p>3. Development of SPOC and MOOC for the Educational Program in Genetics in Collaboration with the Institute of Genetics and Physiology.</p> <p>4. Attracting the Best Domestic and International Specialists as Visiting Professors to Ensure a Competitive Level of Staff Qualifications (3).</p> <p>5. Organization of Winter/Summer Schools (1).</p> <p>6. Conducting a Republic Olympiad in Biotechnology and Biology.</p> <p>7. Offering a Training Course on 'Histotechnology for Environmental Monitoring' for Students in the Field of Biotechnology</p>	<p>1. Masterclasses for Young Scientists and Educators on the Topic 'Ensuring High-Quality Theses and Master's Dissertations through the Application of Modern Statistical Analysis Approaches.'</p> <p>2. Educational Event: 'Lifelong Learning - Realities of the Modern World.'</p> <p>3. Educational Event: 'The Ongoing Development of Biotechnology.'</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">5 Gender Equality</p>	<p>Promoting Gender Equality through Educational and Awareness Activities.</p>		<p>Training Seminar on 'Promoting Gender Equality in Education and Science.'</p>	<p>Round Table: Women in Science.</p> <p>International Forum 'Inspiring Future Women in Science.'</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">6 Clean Water and Sanitation</p>	<p>Organizing Events Aimed at Ensuring Access to Clean Water and Improving Sanitation Conditions.</p>	<ol style="list-style-type: none"> 1. Preparation of Theses, Master's, and PhD Dissertations on the Topics of Biomonitoring and Bioremediation of Aquatic Ecosystems. 2. Implementation of Commercial Contracts for Water Quality Analysis on Behalf of Individuals and Enterprises (Testing Laboratory). 	<p>Discussion Seminar with Students on the Topic 'Water Scarcity: Global Water Conservation Practices.'</p>	<p>Conduct the second annual "BIOART" competition.</p> <p>Roundtable discussion: "Судың да сұрауы бар" (The Importance of Clean Water).</p> <p>Roundtable discussion: "Гигиена рук спасает жизни" (Hand Hygiene Saves Lives).</p> <p>Roundtable discussion: "Экономия воды = экономия денег" (Water Conservation = Money Saving).</p> <p>Roundtable discussion: "Особенности и профилактика водозависимых инфекций" (Characteristics and Prevention of Waterborne Infections).</p> <p>Roundtable discussion: "Пути экономии воды" (Ways to Conserve Water).</p> <p>Ensuring the availability and rational use of water resources and sanitation for all.</p> <p>Educational event: "Чистая вода-здоровье на века. Контроль качества воды" (Clean Water - Health for Generations. Water Quality Control).</p> <p>Roundtable discussion: "Таза су -</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">7 Affordable and Clean Energy</p>	<p>Implementation of projects aimed at the development and research of alternative, environmentally friendly renewable energy sources.</p>	<p>1. Execution of research projects - 4 projects. Supervisors: Zhubanova A.A., Sadvakasova A.K., Bolatkhan K.B., Akimbekov N.S. 2. Defense of PhD dissertations. 3. International round table Modern Issues in Biotechnology and Biology: A Glimpse into the Future.</p>	<p>1. Training of graduates in the field of Environmental Bioengineering (8D05112) - 3 graduates. 2. Seminar on alternative energy sources - biofuels.</p>	<p>Round table: Technology for Biogas Production.</p>
				<p>Round table: Phototrophic Microorganism-Based Biofuels as an Environmentally and Economically Viable Solution.</p>

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">8 Decent Work and Economic Growth</p>	<p>The faculty's task is to ensure the quality training of professionals in demand by the labor market through educational programs.</p>		<ol style="list-style-type: none"> 1. Inviting experienced international professors to deliver lectures. 2. Attracting instructors from employers to conduct classes. 3. Increasing the faculty's qualification by hiring professors with PhD degrees to replace non-qualified teaching staff. 4. Developing Massive Open Online Courses (MOOCs) with the involvement of employers and international scholars. 5. Updating the list of academic experts and employers, including those from Kazakhstan, abroad, and CIS countries. 6. Career guidance and employment services. 7. Organizing international internships for young researchers in leading research centers worldwide. 	<ol style="list-style-type: none"> 1. Roundtable: Decent Work and Economic Growth. 2. Meeting with graduates of the Faculty of Biology and Biotechnology. 3. Roundtable: Future Professions in Biotechnology and Bioengineering. 4. Brainstorming: Careers in Science: An Inside Perspective.

SDG	The main task	Science	Education	Educational Activities
<p align="center">12 Responsible Consumption and Production</p>	<p>Development of responsible consumption and production methods, taking into account environmental and social sustainability.</p>	<p>1. Execution of research projects funded by the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan (GF - Basic Research Projects): Dr. Zhubanova A.A. Dr. Zayadan B.K. Dr. Mukasheva T.D. Dr. Boguspaev K.K. Dr. Kistaubaeva A.S. Dr. Akmuhanova N.R. Dr. Smekenov I.T. Dr. Sarsekeeva F.K. 2. Project "Zhaz Galym": Dr. Bauyenova M.O.</p>	<p>Scientific seminar on "Zero-Waste Technologies in Agriculture.»</p> <p>Scientific seminar on "Production of Products for People with Diabetes."</p>	<p>Roundtable discussion: Zero-Waste Production - Caring for the Environment! Roundtable discussion: Principles of Responsible Consumption. Excursion with students to the Bacchus factory.</p>

SDG	The main task	Science	Education	Educational Activities
<p>Roundtable: Say "NO" to plastic.</p> <p>Educational event: Environmental issues of marine ecosystems.</p>	<p>Protection of marine ecosystems and biodiversity through research and conservation of marine resources.</p>	<p>Implementation of research projects: Supervisors: Shalakhmetova T.M., Bisenbaev A.K. Inelova Z.A.</p>	<p>Training graduates in the following educational programs: Biology (566) Zoology (7) Genetics (123) Geobotany (9) Aquaculture and Aquatic Biological Resources (3)</p>	

SDG	The main task	Science	Education	Educational Activities
<p style="text-align: center;">15 Preservation of terrestrial ecosystems</p>	<p>Supporting the preservation of terrestrial ecosystems and biodiversity, including sustainable use of natural resources.</p>	<p>1) Conducting scientific projects funded by the Science Foundation - 4 projects. Supervisors: Nurtazin S.T. Kurmanbaeva M.S. Yesimseitova Z.B. Zhumağul M.Zh.</p>	<p>Development of the educational program "Zoology" (bachelor's and master's degree).</p> <p>Summer Ecology School on the Fauna and Flora of the Western Tien Shan Foothills.</p>	<p>Roundtable: Бір тал кессең, он тал ек...</p> <p>Roundtable: Conservation and Restoration of Forests.</p> <p>Educational Event: Principles and Methods of Ecosystem Conservation.</p>

SDG	The main task	Science	Education	Educational Activities
<p align="center">17 Partnership for Sustainable Development.</p>	<p>Promotion of establishing partnerships and collaborations for the university with other institutions, organizations, and countries to achieve sustainable development.</p>	<p>1. International collaboration with leading scientists for the execution of joint scientific projects:</p> <p>1) University of Sharjah Grant. Construction of Interpretable Artificial Intelligence and Deep Learning models based on integrative Neuroimaging and Genetics data for predicting abnormal emotional development (Kustubaeva A.M.).</p> <p>2) International project in collaboration with countries such as Ukraine, Germany, the USA, Canada, funded by NATO BYP G6094 (Kistaubaeva A.S.).</p> <p>3) Cooperation within the Alliance for Biotechnology Industry (Talents) and the COMSATS Center for Industrial Biotechnology (CCIB) with the Tianjin Institute of Industrial Biotechnology, Chinese Academy of Sciences (TIB CAS, China) in the field of agrobiotechnology (2 projects under the Tianjin SynBio program) (Sadvakasova A.K.).</p> <p>2. Publication of joint articles with foreign scientists having high scientometric indicators in high-impact journals.</p> <p>3. Organization of scientific internships for master's and doctoral students.</p>	<p>1. Development of joint educational programs (JEP) and double degree programs (DD) with foreign partners:</p> <p>Medical Bioengineering in collaboration with Shenzhen University (China) (doctoral level)</p> <p>Food Biotechnology (master's level) with Loraine University (France)</p> <p>Agricultural Engineering (master's level) with RUDN, Moscow (Russia)</p> <p>Genetics (master's level) with NSU, Russia</p> <p>2. Academic mobility (incoming/outgoing)</p> <p>Ensuring academic mobility and internationalization with a focus on bachelor's and master's programs, including the development of student exchange programs for learning and participation in joint projects, such as Abai Verne and Erasmus+.</p>	

Thank you for your attention)