ASIIN Seal & EUR-ACE® Label

Accreditation Report

Master's Degree Programmes
Crop Processing Technology
Technology of Food Products

PhD Programmes
Crop Processing Technology
Technology of Food Products

Provided by
Almaty Technological University

Version: 12 December 2025

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Ma Технология перерабатывающих производств	Crop processing technology	ASIIN, EUR-ACE® Label	ASIIN 26.06.2020–30.09.2025	08
Ma Технология продовольственных продуктов	Technology of Food Products	ASIIN, EUR-ACE® Label	ASIIN 26.06.2020–30.09.2025	08
PhD Технология перерабатывающих производств	Crop processing technology	ASIIN	ASIIN 26.06.2020–30.09.2025	08
PhD Технология продовольственных продуктов	Technology of Food Products	ASIIN	ASIIN 26.06.2020–30.09.2025	08
Date of the contract: 11.12.2024 **Submission of the final version of the self-assessment report:** 11.12.2024 **Date of the onsite visit:** 01./02.04.2025 **at:** Almaty Technological University, Almaty				
Expert panel: Prof. Dr. Gerhard Schleining, University of Natural Resources and Life Sciences, Vienna; Prof. Dr. Saverio Mannino, University of Milan; Dr. Shynar Akhmetsadykova, Antigen Co Ltd; Said Nalibayev, South Kazakhstan State University				

[1] ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes.
[2] TC: Technical Committee for the following subject areas: TC 08 - Agriculture, Forestry, Food Sciences, and Landscape Architecture.

Representative of the ASIIN headquarter: Sascha Warnke	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture as of March 27, 2015 ASIIN Additional Criteria for Structured Doctoral Programmes as of March 15, 2021	

B Accreditation Status

Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 12.12.2025.

Degree Programmes	ASIIN Seal	Validity	EUR-ACE® Label	Validity
Ma Crop processing technology	Accredited with requirements	26.09.2025 - 17.10.2026	Accredited with requirements	Subject to the approval of the ENAEE Administrative Council
Ma Technology of Food Products	Accredited with requirements	26.09.2025 - 17.10.2026	Accredited with requirements	Subject to the approval of the ENAEE Administrative Council
PhD Crop processing technology	Accredited	26.09.2025 - 30.09.2032	--	--
Ma Technology of Food Products	Accredited	26.09.2025 - 30.09.2032	--	--

Fulfilment of the Accreditation Criteria

ASIIN General Criteria / Subject-Specific Criteria	Ma Crop processing technology	Ma Technology of Food Products	PhD Crop processing technology	Ma Technology of Food Products
1 Degree programme: Concept, Content & Implementation				
1.1 Objectives and learning outcomes (intended qualification profile)	Fulfilled	Fulfilled	Fulfilled	Fulfilled
1.2 Title of the degree programme	Fulfilled	Fulfilled	Fulfilled	Fulfilled
1.3 Curriculum	Fulfilled	Fulfilled	Fulfilled	Fulfilled
1.4 Admission requirements	Fulfilled	Fulfilled	Fulfilled	Fulfilled
1.5 Workload and credits	Fulfilled	Fulfilled	Fulfilled	Fulfilled
1.6 Didactics and teaching methodology	Fulfilled	Fulfilled	Fulfilled	Fulfilled
2 Exams: System, Concept and Organisation				
2 Exams: System, Concept and Organisation	Fulfilled	Fulfilled	Fulfilled	Fulfilled
3 Resources				
3.1 Staff and staff development	Fulfilled	Fulfilled	Fulfilled	Fulfilled
3.2 Student support and student services	Fulfilled	Fulfilled	Fulfilled	Fulfilled

ASIIN General Criteria / Subject-Specific Criteria	Ma Crop processing technology	Ma Technology of Food Products	PhD Crop processing technology	Ma Technology of Food Products
3.2 Funds and equipment	Fulfilled	Fulfilled	Fulfilled	Fulfilled
4 Transparency and Documentation				
4.1 Module descriptions	**Not fulfilled** Requirement A1	**Not fulfilled** Requirement A1	Fulfilled	Fulfilled
4.2 Diploma and Diploma Supplement	Fulfilled	Fulfilled	Fulfilled	Fulfilled
4.3 Relevant rules	Fulfilled	Fulfilled	Fulfilled	Fulfilled
5 Quality Management: Quality Assessment and Development				
5 Quality Management: Quality Assessment and Development	Fulfilled	Fulfilled	Fulfilled	Fulfilled

Requirements

For the Master´s degree programmes

A 1. (ASIIN 4.1) The module handbooks need to be reworked to show more adequately the contents and learning outcomes of each course; and the language of instruction for each course must be entered correctly.

Accreditation History

Ma Crop processing technology

ASIIN Seal	Validity	EUR-ACE® Label	Validity	Previous Report
First accreditation	26.06.2020 - 30.09.2025	--	--	Link

Ma Technology of Food Products

ASIIN Seal	Validity	EUR-ACE® Label	Validity	Previous Report
First accreditation	26.06.2020 - 30.09.2025	--	--	Link

PhD Crop processing technology

ASIIN Seal	Validity	EUR-ACE® Label	Validity	Previous Report
First accreditation	26.06.2020 - 30.09.2025	--	--	Link
First re-accreditation with requirements	26.09.2025 - 17.10.2026			

PhD Technology of Food Products

ASIIN Seal	Validity	EUR-ACE® Label	Validity	Previous Report
First accreditation	26.06.2020 - 30.09.2025	--	--	Link

First re-accreditation with requirements	26.09.2025 - 17.10.2026			

C Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Ma Crop processing technology			07	Full time	/	4 semesters	120 ECTS	2001
Ma Technology of Food Products			07	Full time	/	4 semesters	120 ECTS	2001
PhD Crop processing technology			08	Full time	/	6 semesters	180 ECTS	2001
PhD Technology of Food Products			08	Full time	/	6 semesters	180 ECTS	2001

Almaty Technological University (ATU) is a higher education institution located in Almaty, Kazakhstan. It is one of 121 universities in the country and is ranked among the top 30 nationally. The university holds institutional accreditation from the Independent Kazakh Agency for Quality Assurance in Education (IQAA) and the Independent Agency for Accreditation and Rating (IAAR). Within its national subject-specific evaluations, ATU's department related to this report was ranked first. As such, the Master's and PhD programmes in Crop Processing Technology and Technology of Food Products were chosen first for an international accreditation. This procedure is the second re-accreditation of the programmes, with the respective Bachelor's degree programmes having been accredited in the previous year.

ATU) is composed of five faculties: the Faculty of Food Technology, the Faculty of Design, Textile and Clothing Technologies, the Faculty of Economics and Business, the Faculty of Engineering and Information Technology, and the Kazakh-Swiss Institute of Tourism. Additionally, the university offers programmes through its Faculty of Distance Learning. ATU

[3] EQF = The European Qualifications Framework for lifelong learning

provides 33 bachelor's degree programmes, 26 master's degree programmes, and 15 doctoral programmes. The university regularly updates and expands its academic offerings in accordance with labour market demands and government initiatives. Recent additions include programmes in areas such as Artificial Intelligence Technology. The university has approximately 7,000 students enrolled, including short of 400 international students. The academic staff consists of 1,134 members, of whom 157 are international.

ATU maintains international cooperation through student and faculty mobility programs. A total of 808 students have participated in study abroad programs (exact timeframe to be specified), and in the previous academic year, 450 international students were enrolled at the university. As of 2024, ATU has signed 93 memorandums of cooperation with foreign universities, including 25 agreements concluded in 2024.

D Expert Report for the ASIIN Seal[4]

1. The Degree Programme: Concept, Content & Implementation

Criterion 1.1 Objectives and Learning Outcomes of a Degree Programme (Intended Qualifications Profile)

Evidence:

- Self-Assessment Report
- Rules for the development of educational programs of higher and postgraduate education
- Study plans of the degree programmes
- Objective-module-matrices
- Website of the study programmes
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The experts refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committee (Agriculture, Forestry, Food Sciences, and Landscape Architecture), the objective-module-matrix for each degree programme, the matching learning objectives and the modules as a basis for judging whether the intended learning outcomes of the Master's degree and PhD programs correspond with the competences as outlined by the SSC. The descriptions of the qualification objectives are comprehensive and include the achieved competencies and possible career opportunities of the graduates.

The learning outcomes of the four study programmes under review can be found on ATU's website, the diploma supplement, and the Self-Assessment Report. The auditors confirm that the programme learning outcomes are transparently anchored and published and thus are available to students, lecturers and interested third parties. They also agree that the

[4] This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

learning outcomes are described in a clear and concise manner. Furthermore, the experts acknowledge that the intended learning outcomes cover different areas of competences, ranging from technical skills to academic and general/transferrable skills such as communication and social responsibility. They conform to the EQF 7 and 8, respectively.

In the Ma Technology of Food Products students acquire the following Learning Outcomes:

Learning Outcome (LO)	Description
LO1	Conducts research in the field of food technology based on a holistic systematic scientific worldview using knowledge of the history and philosophy of science.
LO2	Uses modern methods and technologies of scientific and professional communication in a foreign language in the field of professional activity.
LO3	Applies knowledge of psychology in solving managerial problems and in planning professional and personal development.
LO4	Applies knowledge of the methodological foundations of higher education pedagogy and professional knowledge and skills in professional and educational activities.
LO5	Conducts independently theoretical and experimental research, analysis of their results to solve scientific and practical problems in the food industry.
LO6	Participates in the work of teams involved in project management based on knowledge of modern methodology, tools, standards in the field of project management.
LO7	Manages the processes of ensuring the quality of food products and services in accordance with regulatory documents.
LO8	Makes judgments based on the collection and interpretation of information, taking into account ethical and social responsibility and scientific ethics for their application.
LO9	Develops innovative food technologies based on scientific knowledge, best practices and food industry perspectives.
LO10	Presents information, ideas, conclusions, problems and solutions in a clear and understandable way using scientific and professional food industry terminology.

Goal of this programme is to train graduates with a high level of professional culture, capable of addressing modern scientific and practical challenges in the field of food production, teaching at universities and specialist colleges, and performing managerial roles within enterprises in the food industry.

The Ma Crop Processing Technology has the following learning outcomes:

Learning Outcome (LO)	Description
LO1	Organises the control of processing product production and quality management using quality assurance systems.
LO2	Applies knowledge of methodology and experimental research methods in scientific activities and in the creation of high-quality products in processing industries.
LO3	Demonstrates an evolving understanding of the scientific worldview, including the history and philosophy of science.
LO4	Applies knowledge of the methodological foundations of higher and vocational education pedagogy in educational activities.
LO5	Uses modern methods and technologies of scientific and professional communication in foreign languages within their professional field.
LO6	Applies knowledge of psychology to solve managerial problems and to plan professional and personal development.
LO7	Manages production processes based on the evaluation of processing enterprise activities.
LO8	Independently conducts theoretical and experimental research, and analyses results to address scientific and practical challenges in the food and grain processing industries.
LO9	Develops innovative processing technologies based on scientific knowledge, best practices, and industry development prospects.
LO10	Communicates information, ideas, conclusions, problems, and solutions clearly to both specialists and non-specialists.

The programme's goal is to train highly qualified specialists with strong research and teaching abilities, capable of addressing contemporary scientific and practical challenges, delivering instruction at university level, and successfully managing enterprises and organisations within the food processing sector.

The learning outcomes for the PhD Technology of Food Products are as follows:

Learning Outcome (LO)	Description
LO1	Employs scientific and professional communication tools for analytical writing, critical information evaluation, and the use of digital technologies.
LO2	Demonstrates a comprehensive understanding of scientific knowledge, cultural values, and current trends in food engineering and technology.
LO3	Evaluates current trends and patterns in national and international scientific development in food production engineering and technology.

Learning Outcome (LO)	Description
LO4	Applies scientific expertise and professional skills to implement innovative educational policies.
LO5	Conducts advanced scientific research in the professional field using in-depth theoretical and specialised knowledge.
LO6	Assesses the socio-economic impact of new developments in science, engineering, and technology within the professional domain.
LO7	Analyses and interprets results from original research to address real-world scientific and practical issues.
LO8	Proposes scientifically grounded, innovative solutions to enhance efficiency and innovation in food production technology.

Its goal is to train highly qualified scientific, pedagogical, and managerial personnel capable of conducting applied research in the field of food production and managing educational processes within a university setting.

Lastly, the PhD Crop Processing Technology presents the following learning outcomes:

Learning Outcome (LO)	Description
LO1	Demonstrates the use of scientific and professional communication tools for analytical writing, critical evaluation of information, and the application of digital technologies.
LO2	Exhibits a comprehensive understanding of scientific knowledge concerning the natural world, life values, and cultural heritage.
LO3	Applies innovative developments in biotechnology for the processing of plant-based raw materials.
LO4	Utilizes in-depth specialized theoretical knowledge to design and conduct complex scientific research.
LO5	Integrates advances in genetic engineering and biotechnology into research for developing new functional products in the processing industry.
LO6	Analyzes and interprets research data to address scientific and practical challenges in crop processing.
LO7	Proposes scientifically grounded, innovative solutions to improve the safety and efficiency of processed products.

Its goal is to train highly qualified scientific, pedagogical, and managerial personnel capable of conducting applied scientific research in crop processing technologies and contributing to the organization of educational processes at the university level.

To verify whether the intended learning outcomes of the four programmes are adequately reflected in the respective curricula, ATU has submitted a matrix for each programme. These matrices indicate which courses are designed to address specific learning outcomes. Based on the information provided, the expert panel is able to assess the alignment between the programmes' competence profiles and the corresponding Subject-Specific Criteria (SSC), as well as to evaluate the contribution of individual courses to the achievement of the intended learning outcomes.

The experts acknowledge that the programme objectives and learning outcomes are subject to regular review, incorporating feedback from a range of stakeholders, including students, alumni, academic staff, and industry representatives. This review process also considers the national qualifications framework for industry, relevant professional standards, and input from the university's Board of Trustees.

During the audit the industry partners express satisfaction with the qualification profiles of graduates and confirm that they are regularly consulted regarding the relevance and status of the degree programmes.

Criterion 1.2 Name of the Degree Programme

Evidence:

- Self-assessment report
- Diploma supplement
- Documentation of the study programmes

Preliminary assessment and analysis of the experts:
The experts confirm that the English translation and the original Russian names of the four degree programmes correspond with the intended aims and learning out-comes as well as the content of the respective degree programme. The names are used consistently throughout the documentation.

Criterion 1.3 Curriculum

Evidence:

- Self-assessment report
- Curricula

- Module handbooks
- Rules for the development of educational programs of higher and postgraduate education
- Study plans of the degree programmes
- Objective-module-matrices
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Content and structure of the programmes

The two Master's degree programmes comprise four semester and 120 ECTS.

ATU has established clear regulations governing the structure of its degree programmes, which all courses must adhere to. According to these guidelines, Master's degree programmes consist of four semesters, during which students are required to earn 120 ECTS credits. Each Master's programme includes several compulsory courses, such as History and Philosophy of Science and a Foreign Language. In the first three semesters, students undertake courses in management, education, and research, alongside subjects specific to their chosen programme. Given that both programmes under review have specialised curricula, the courses are further categorised.

In the Master's in Technology of Food Products, the specialisations available are Food Technologies, and Food Technologies with Pedagogy. Students can therefore choose courses like "Nutrition" and "Food Additive Technology," or "History and Vocational Education Systems" and "Didactics of Vocational Education and Training."

In the Master's in Crop Processing Technology, specialisations include grain processing, bakery, pasta and confectionery production, as well as fermentation industry and wine-making. Accordingly, the courses focus on quality management, scientific principles, and the physico-chemical properties of materials relevant to each specialisation.

Both the PhD in Crop Processing Technology and the PhD in Technology of Food Products are six-semester programmes designed to blend coursework, practical training, and extensive research, including internships and the completion of a doctoral dissertation. Each programme requires the acquisition of 120 ECTS credits, covering theoretical studies, practical sessions, research activities, and assessments.

The PhD in Crop Processing Technology focuses on advanced knowledge and skills related to the storage, processing, and refinement of plant production in the food industry. Key modules include Academic Writing, Theory of Technology of Storage and Processing of Plant Production, Scientific Research Methods, Biotechnological Bases of Food Production,

Fundamentals of Genetic Engineering and GMO Safety, and specialised courses such as System Analysis of Technological Processes and Electrophysical Methods of Grain Processing. Pedagogical Practice is also incorporated. A substantial part of the credit load (30 ECTS) is devoted to research work, including the doctoral dissertation and internship, which spans all six semesters.

The PhD in Technology of Food Products offers a similarly structured curriculum with emphasis on food technology, research methodology, and pedagogical skills. Core modules include Academic Writing, Theory of Food Technologies, Methods of Scientific Research, and Methods of Teaching Engineering Disciplines. Additional specialised courses cover topics such as Designing the Educational Process, Barrier Technologies in the Food Industry, Digital Technologies in Science and Industry, and Scientific Project Management. Research work, internships, and the doctoral dissertation collectively contribute a significant portion of the total credits, with pedagogical practice integrated throughout the programme.

Both programmes aim to develop graduates' expertise in scientific research and teaching while providing specialised knowledge to prepare them for successful careers in academia and the food industry.

Generally, the assessors find that the structure and content of the four curricula are sensible and well-designed. They effectively balance theoretical knowledge, practical skills, and extensive research work, ensuring a comprehensive learning experience. The inclusion of pedagogical practice alongside specialised scientific modules strengthens the programmes' relevance for both academic and industry careers. The assessors note, however, that some course titles in the English versions appear to suffer from mistranslations. For example, the course listed as "Artificial Foods" was clarified during the audit to actually refer to "Substitution Foods," such as meat substitutes. This issue does not affect the courses themselves—since they are not currently taught in English— but rather, the translations are mostly done for the accreditation procedure. The assessors suggest that this translation issue could be addressed in the near future to support the programmes' internationalisation efforts.

All curricula can be consulted in the annex to this report.

Internship

All students enrolled in the four study programmes under review are required to complete an internship at the conclusion of their studies. During the audit, the experts were informed that the Career Centre maintains a list of partner companies from which students can select their placement. Currently, ATU has agreements with approximately 50 companies. Alternatively, students may propose a different company, subject to university approval. The

internship tasks must align with the objectives and intended learning outcomes of each programme, aiming to reinforce students' theoretical knowledge and develop their scientific and methodological skills.

The experts find that the internships are well integrated into the curricula and that ATU has effective procedures in place to ensure the placements contribute meaningfully to the programme's learning outcomes. Industry partners express satisfaction with the internships but suggest that the duration of placements could be extended. They also note that some students choose to lengthen their placements independently to gain additional experience. While the experts acknowledge the industry's viewpoint, they consider the current length of the internships to be appropriate overall.

Student mobility

In order to promote student mobility, ATU has a number of partner universities, e.g. in Hungary, Bulgaria and Turkey, and participates in various cooperation projects. Through networks such as ERASMUS+ or DAAD, students have the opportunity to go abroad.

Generally, the assessors find that student and staff mobility is effectively supported and implemented across the Master's and PhD programmes under review. The flexibility of the curricula allows for academic exchanges, internships, and participation in international projects, with clear institutional structures in place for administrative, financial, and language support. Students and staff are regularly informed about opportunities through various channels, encouraging active participation in academic mobility.

Evidence from recent years confirms consistent engagement in both inbound and outbound mobility. Master's and doctoral students across all programmes actively engage in scientific internships and academic mobility. Master's students from the Technology of Food Products and Crop Processing Technology programmes have completed research placements at institutions such as Kyrgyz State Technical University named after I. Razzakov, Kazakh Research Institute of Processing and Food Industry, the Kazakh National Agrarian Research University, and the Research Institute "Food Safety" at ATU. Doctoral students have completed scientific internships in countries including Bulgaria, Poland, Lithuania, Russia, Belarus, the Czech Republic, Latvia, and the United States. Notably, one doctoral student participated in the Bolashak programme at Michigan State University in the USA, and another undertook research funded by GIZ in Latvia. These internships, often supported by the university through funding for travel and accommodation, offer students meaningful international exposure and contribute to their professional and academic development.

During the audit, several students share their experiences with exchange programmes, which are described as overwhelmingly positive in both structure and organisation. Among these, one PhD student completed a three-month internship in Latvia, while another carried out laboratory work in Moscow. In these cases, the university covered travel expenses and related costs, highlighting its commitment to supporting student mobility in a meaningful and accessible way.

Overall, the experts positively acknowledge the strategic approach to mobility and the university's proactive efforts to enhance international exposure for its students and staff, thereby contributing to the global relevance of the programmes.

Periodic review of the curricula

The content of the degree program modules is updated annually based on the recommendations of employers, the Ministry of Science and Higher Education of the Republic of Kazakhstan, the teaching staff and students. The relevance of the content of the educational modules, their fundamental nature and compliance with new scientific directions are also determined by the research work of the teaching staff. For example, in 2023-2024, the volumes of the following disciplines were increased by 1 academic credit for the Master's degree programmes: "Innovative Equipment and Technologies in the Food Industry", "Technology of Functional and Specialized Food Products", "Nanotechnology in the Food Industry", "Technology of Food Additives". The content of the disciplines of the pedagogical module is updated based on the professional standard for teachers (teaching staff) of higher and (or) postgraduate education organisations without changing the learning outcomes.

The assessors find that the process for updating the content of the degree programme modules is transparent and well-structured. They thank the university for providing detailed examples of recent changes. Stakeholders, including employers, teaching staff, and students, confirm their involvement in the revision process, which ensures that the programmes remain relevant, research-informed, and aligned with current scientific and professional developments.

Criterion 1.4 Admission Requirements

Evidence:

- Self-assessment report
- Institutional regulation ATU-DFC-RP-8.5-2024-03

- Statistical data on admission
- Website of the unversity
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Admission to the Master's and Doctoral degree programmes in Technology of Food Products and Crop Processing Technology at ATU is governed by the institutional regulation ATU-DFC-RP-8.5-2024-03 and complies with national frameworks for postgraduate education. Admission is conducted on a competitive basis and relies on the results of comprehensive testing (CT) or entrance examinations. Applicants to the scientific and pedagogical Master's programmes must pass a CT that includes a foreign language test (offered in English, German, or French), a subject-specific test based on the profile of the programme, and a general assessment of academic readiness. To be admitted, candidates must achieve at least 75 points. For the doctoral programmes, the entrance examination consists of three components: an interview conducted by an examination committee, an essay, and a written response to discipline-specific questions. Admission to PhD programmes also requires an international certificate confirming foreign language proficiency in accordance with the Common European Framework of Reference for Languages (CEFR) and a minimum entrance exam score of 75 out of 100. In the case of tied results, preference is given to candidates with higher scores in their subject area exams.

Foreign citizens are eligible to apply for Master's and PhD programmes on a fee-paying basis. Their admission is based on the results of an interview conducted by the Admissions Committee, with enrolment aligned to the academic calendar and taking place at least five days before the start of the next academic period. ATU also maintains a Dissertation Council with the authority to award doctoral degrees in the areas of Technology of Food Products, Crop Processing Technology, and Food Safety. The process for recognising foreign qualifications is outlined in the document ATU-DICAM-DP-7.5-2024-01, which regulates international cooperation and academic mobility.

Each year, the Master's in Technology of Food Products programme receives on average 55 applications, of which around 24 candidates are admitted. The current cohort includes 35 students, with 31 recent graduates. In total, 88 individuals have graduated with the degree of Master of Technical Sciences in this programme. The employment rate for graduates is 98%, and alumni are employed across a range of sectors including higher and postgraduate education institutions, research institutes, colleges, and food production enterprises throughout Kazakhstan. Graduates also continue their education at institutions such as Almaty Technological University, North Kazakhstan State University named after Manash

Kozybayev, Taraz University named after M.Kh. Dulati, and Kazakh National Agrarian Research University.

The Master's programme in Crop Processing Technology sees approximately 50 applications annually, with 20 candidates typically admitted. The programme currently hosts 24 students and has produced 20 recent graduates, all of whom were awarded the academic degree of Master of Engineering Sciences. The employment rate is likewise 98%, with graduates working in research institutes, educational institutions, and industry.

The PhD programme in Technology of Food Products currently enrolls five students and has produced three graduates. Over the past five years, eight individuals have defended their dissertations and received the degree of Doctor of Philosophy. Employment among graduates stands at 100%, with alumni employed at universities such as Almaty Technological University, South Kazakhstan University named after M. Auezov, Kazakh Agrotechnical University named after S. Seifullin, Kokshetau University named after Shokan Ualikhanov, and various research institutes and private enterprises.

Similarly, the PhD programme in Crop Processing Technology enrolls an average of six candidates annually, with two typically admitted. The programme currently hosts six doctoral students and has graduated two. Over the last five years, eight doctoral defences have been successfully completed. Graduates have achieved 100% employment and work across higher education institutions, national universities, and industrial research centers including the Kazakh Research Institute of Processing and Food Industry and Alel AGRO LLP.

The assessors note that the university's admissions procedures are transparent and in line with national requirements. They express appreciation for the detailed examples provided by the institution and acknowledge the high level of engagement of various stakeholders in shaping and supporting the academic environment. The clarity of the documentation, the inclusion of relevant data, and the strong employment outcomes all point to a well-functioning and purposeful admissions and graduate tracking system that effectively supports the university’s mission.

Criterion 1.5 Workload and Credits

Evidence:

- Self-assessment report
- Module handbooks

- ATU-EMM-R-8.1/8.3-2023-12
- ATU-EMM-PP-5.3-2024-06
- Discussion during the audit

Preliminary assessment and analysis of the experts:
ATU uses the European Credit Transfer and Accumulation System (ECTS), where one ECTS/credit point is equivalent to 30 hours. ATU's credit system assesses student workload and includes both contact hours and time for independent study. The system ensures that all required components are included in the curriculum, with credits awarded for each module according to the workload involved. 60 ECTS are assigned per academic year, corresponding to approximately 1800 hours of total student effort for both Master's and Doctoral levels. This workload is defined in accordance with internal regulations (ATU-EMM-R-8.1/8.3-2023-12) governing the planning, organisation, and monitoring of higher and postgraduate education programmes.

The confirmation and distribution of academic workload are dynamic processes, beginning with the development and approval of curricula that specify modules and their associated objectives, content, formats, and intended learning outcomes. Each module comprises specific educational elements—such as lectures, seminars, laboratory work, and independent study—each calculated in terms of both hours and ECTS credits. The actual workload is regularly assessed through student surveys, module feedback forms, and evaluations of student engagement and performance. These tools allow the university to verify the alignment between the expected and actual student workload and to adjust teaching resources, materials, and module structures where necessary.

Student performance data further supports workload assessment. Ongoing monitoring includes midterm assessments, benchmark tests, and detailed analysis of academic results, with absolute academic performance exceeding 90% and qualitative performance above 92%. The results of student performance, including those from winter and summer sessions, are reviewed at the Academic Council, ensuring oversight of academic standards and workload consistency.

Research work, particularly at the postgraduate level, demands extensive independent study. Time allocated to these activities reflects their academic complexity and ensures that the credits awarded are proportionate to the effort required. Student workload planning and monitoring are overseen by academic departments and the postgraduate division, which ensures alignment with international norms.

Credits in the ECTS system are distributed according to the estimated effort students must invest to master each module. For example, in the Master's programme "Technology of

Food Products", the module "Planning, Experiment Organisation and Data Processing" carries a total load of 150 hours—comprising 15 lecture hours, 30 hours of practical classes, 15 hours of supervised research work, and 90 hours of independent study—earning the student 5 ECTS credits. In the "PhD Crop Processing Technology" programme, the module "Methods of Scientific Research" includes 15 hours of lectures, 15 hours of practical classes, 6 hours of experimental work, and 54 hours of literature review and exam preparation, amounting to 90 hours in total and worth 3 ECTS credits.

Academic quality assurance is maintained through regular reviews by the Academic Quality Council and Faculty Academic Quality Commissions, governed by regulations such as ATU-EMM-PP-5.3-2024-06. Internal audits are conducted annually to verify that assigned credits reflect actual student workload. Faculty meetings provide a forum for discussing academic trends, innovative teaching technologies, and potential curriculum updates. These meetings may lead to the introduction of new interdisciplinary modules or the revision of existing content, for example, to address emerging industry needs such as expertise in functional food technology.

Audits may reveal discrepancies between estimated and actual workload, particularly in laboratory-heavy courses. In such cases, credits may be adjusted, and teaching loads redistributed accordingly. This flexible curriculum development process allows the university to respond quickly to labour market changes and evolving educational standards, while also ensuring student well-being by avoiding over- or underloading, which could negatively impact performance and motivation.

To support workload management and ensure transparency, the university uses the digital platform Hero Study Space to monitor student learning activities.

Overall, the university employs a comprehensive approach to ensure credit allocation accurately reflects student workload. This includes student and faculty feedback, performance analysis, curriculum adjustments, and periodic quality control. As a result, the system ensures that students' academic experiences are balanced, rigorous, and in line with international educational standards.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-assessment report
- Module handbooks
- Discussion during the audit

Preliminary assessment and analysis of the experts:

According to the self-assessment report, the didactic approach and teaching methodology applied in the Master's and Doctoral degree programmes at ATU are grounded in the principles of research-led, student-centred learning. These programmes are designed to develop both theoretical understanding and practical competence, ensuring that graduates are well-prepared for academic and industry-related careers.

In the Master's degree programmes, teaching places a strong emphasis on applying knowledge in practical and scientific contexts. Through the Master's Research Work (MRW), students acquire skills in formulating research questions, conducting literature reviews, applying established research methods, analysing data, and drawing evidence-based conclusions. Learning takes place through interactive lectures, laboratory sessions, practical work, case study analysis and group-based tasks. For instance, modules such as Planning and Data Processing or Microbiology of Alcohol and Soft Drinks combine classroom instruction with experiments and real-world problem-solving exercises, helping students to understand complex processes through experience and critical thinking.

Doctoral students, on the other hand, undertake original research projects as part of their Doctoral Research Work (DRW), contributing to scientific advancement in their chosen specialism. They are expected to work independently, applying advanced methods and developing their own research techniques where necessary. Doctoral research involves producing work of scientific novelty, often presented at international conferences and published in peer-reviewed journals. Students demonstrate an advanced level of critical analysis, theoretical integration and methodological precision in fields such as functional food development, fermentation technologies, and grain processing systems.

In summary, the teaching methodology at ATU supports the development of critical thinking, academic independence, and scientific rigour, ensuring that both Master's and Doctoral students are equipped to meet the evolving demands of the food industry and research community. During the audit visit, the assessors welcome the university's strong commitment to didactic quality. According to the students, ATU is recognised for its practical, application-oriented teaching approach which for many during this audit was a reason for applying for these programmes. Teachers and students confirm that the current didactic and teaching methods are effective and appropriate. Students emphasise that the learning experience is both engaging and useful for their future careers, and teachers affirm that they continuously reflect on and adapt their methods to ensure learning outcomes are met.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 1:

The assessors consider this criterion to be fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-assessment report
- Module handbooks
- Statistical data
- Discussion during the audit

Preliminary assessment and analysis of the experts:

The examination and assessment system at JSC Almaty Technological University (ATU) is designed to support objectivity, transparency, and flexibility. It allows for the evaluation of both final learning outcomes and the ongoing progression of students' academic performance. The system is structured in accordance with the credit-based model of higher education and employs a range of assessment methods to ensure academic standards are met.

Student knowledge is assessed through current (formative) control during the semester, boundary control at the conclusion of individual modules, and final control in the form of examinations conducted during winter and summer sessions. This means that students' understanding is monitored continuously during the course, evaluated after completion of specific sections, and finally tested in formal exams to confirm overall mastery. Assessment formats include written and oral exams as well as computer-based testing. Exams in technical and creative subjects are administered with the involvement of independent examination committees.

Each course module includes a final grade composed of continuous assessment (60%) and a final exam (40%). Grading is based on a letter scale (A–F), aligned with a four-point GPA system, and supported by clearly defined criteria presented in each course syllabus. The minimum passing threshold is set at 50%.

Assessment methods are specified for each module and communicated to students at the beginning of the course. These may include oral or written tests, project presentations, discussions, case studies, and other forms of evaluation. Students also complete a final thesis or project, demonstrating the ability to conduct independent work appropriate to the level of their degree programme.

Examinations are designed to evaluate the achievement of defined learning outcomes and are periodically reviewed to ensure alignment with programme objectives. The timing and

distribution of examinations aim to balance workload and allow sufficient preparation time. The institution provides clear regulations for retakes, absences, and accommodations for students with special circumstances, including disabilities and caregiving responsibilities.

Students have access to information about assessment procedures and criteria and may submit formal appeals if they disagree with the outcome of an exam. The assessment system is applied consistently across all forms of study and ensures that examinations reflect the level and content of the respective academic programmes.

During the review, both staff and students confirm that assessment practices are clearly communicated and effectively implemented. The assessors note positively the structured approach to examinations and the institution's emphasis on practical, transparent, and fair assessment procedures.

At the conclusion of their studies, Master's students are required to complete a thesis, while doctoral students undertake a comprehensive dissertation that represents a significant scientific contribution. During the audit, assessors carefully review the quality of both examinations and final theses. They confirm that the exams are appropriate for the European Qualifications Framework (EQF) levels 7 and 8, corresponding to Master's and Doctoral studies respectively. Furthermore, the assessors note that the theses and dissertations meet the academic standards expected at these levels, demonstrating the depth of knowledge and research skills acquired by the students.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 2:

The assessors consider criterion 2 to be fulfilled.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-assessment report
- Staff handbooks
- Discussion during the audit

Preliminary assessment and analysis of the experts:

The student-teacher ratio at ATU complies with state requirements, maintaining an average of 8:1, which ensures a sufficient number of qualified staff across all accredited degree programmes. A significant proportion of the teaching staff hold academic degrees, including PhDs, which indicates a high level of expertise and professional preparedness. For all Master's and Doctoral programmes in Technology of Food Products and Crop Processing Technology, 100% of the teaching staff have doctoral-level qualifications. This strong academic profile is supported by a balanced age structure that combines experience with fresh pedagogical approaches.

The teaching staff at ATU are not only qualified, but also motivated and committed to delivering high-quality education. The university administration plays an active role in fostering this motivation by supporting ongoing professional development. Faculty members are encouraged and assisted in undertaking further academic qualifications, attending didactic trainings, and enhancing their teaching skills. The existing teacher-ranking system is well integrated into institutional practice and is generally accepted by the staff as a motivating and performance-enhancing tool. It is supported by the university's competence centre, which offers resources and guidance to further develop teaching expertise.

Faculty qualifications correspond directly to the disciplines they teach, and their ongoing involvement in scientific research supports the achievement of intended learning outcomes. Research is carried out in the university's dedicated institutes for Food Safety, Food Technologies, and Light Industry Technology. Students are actively involved in research activities, including scientific conferences and national competitions, which strengthens their academic and practical skills. Teaching quality is monitored through a university-wide rating system that evaluates educational, methodological, and research performance, as well as student feedback. This system serves as both a quality assurance tool and a motivational mechanism for academic staff and leadership.

Professional development is a clear priority. Faculty members regularly participate in advanced training and scientific internships, and promotion is merit-based, taking into account performance in teaching, research, and management. The university ensures that material and technical resources support all forms of teaching and learning. Facilities meet sanitary standards, and classrooms and laboratories are suitably equipped for modern educational activities. Scientific publication in high-ranking journals is financially incentivised, and problems in teaching or research are addressed through a systematic, step-by-step process of analysis, action, and review.

While the teaching staff is professionally strong and well-supported, the assessors recommend a stronger emphasis on improving English language proficiency among faculty members. During the audit, it becomes clear that there is a gap between the university's internationalisation ambitions and the actual language capabilities of some teaching staff, surprisingly among the younger lecturers. Strengthening English competence will further support the university's goal of offering internationally oriented programmes and enhancing cooperation with global partners.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-assessment report
- Tour of the facility
- Discussion during the audit

Preliminary assessment and analysis of the experts:

To ensure the academic and professional success of its students, JSC Almaty Technological University (ATU) offers a broad range of support services that accompany students from admission to graduation and entry into the labour market. Upon admission, counselling services are available to assist prospective students in choosing a suitable degree programme, gathering required documentation, and navigating the admissions process. Preparatory courses are offered to support applicants in preparing for entrance examinations and language proficiency tests (such as IELTS or TOEFL), as well as to provide foundational subject knowledge.

Throughout their studies, students benefit from structured academic guidance. Departmental staff help students shape their individual educational trajectories, select appropriate courses, balance their academic workloads, and define long-term academic and professional goals. Master's and doctoral students, in particular, receive targeted support related to their research-focused programmes. This includes guidance in selecting research topics, supervisors, and methodologies, as well as support for academic and professional development. The university's educational and scientific centres offer assistance in research planning, data analysis, dissertation writing, scientific publishing, and participation in conferences. Doctoral students have access to seminars on academic writing, research ethics, and presenting results, which are essential for developing competencies required for a successful academic career.

Students also benefit from psychological support services that help them manage the stress associated with intense study and research, particularly during dissertation phases. The university recognises the mental health needs of graduate and doctoral students and provides appropriate assistance in times of high academic pressure. In addition, ATU ensures the physical and academic well-being of its students through a range of facilities, including a health centre, sports complexes, and a scientific library. The health centre offers primary care and health education events; the sports facilities support students' physical well-being; and the library provides comprehensive academic resources, including access to databases, electronic journals, and literature needed for coursework and research.

For students facing financial hardship, ATU provides financial assistance through grants, benefits, and dedicated support programmes as outlined in the Social Package for Students. To facilitate students' transition into the labour market, the university runs several initiatives. The Career Centre and Competence Centre provide individual career counselling, help students define career goals, assist in job searches and interview preparation, and host masterclasses on communication, self-presentation, and employability skills. A central feature is the annual Job Fair, which connects students and graduates with employers. The university maintains links with its graduates through the Alumni Association, which offers professional networking, access to career resources, and involvement in postdoctoral and continuing education initiatives.

The university actively monitors the quality and availability of its support services. Regular student surveys assess satisfaction across a variety of criteria, including the quality of teaching, the performance of academic consultants, the alignment of education with professional expectations, accessibility of instructors, student involvement in research, the sense of community, and the condition of facilities. Results indicate general student satisfaction

with education and support services at ATU. Findings are used to inform a process of continuous improvement, ensuring that services remain relevant, accessible, and effective in promoting academic success.

During the audit, the assessors are given a tour of the university's support services and facilities, including the library, health centre and career centre. They find these services to be well organised and supportive of students' academic needs. Furthermore, conversations with students confirm their satisfaction with the study programmes, the teaching staff, and the overall learning environment.

Criterion 3.3 Funds and equipment

Evidence:

- Self-assessment report
- Tour of the facilities
- Discussion during the audit

Preliminary assessment and analysis of the experts:
According to the self-assessment report ATU places considerable emphasis on providing the educational process with modern equipment and technical resources. A clearly structured system of financing and regular updates to the material and technical base ensures that laboratories remain up to date. This systematic approach enables students to work with contemporary technologies and prepare for professional environments that closely reflect real production conditions.

Specialised scientific laboratories offer students opportunities to conduct experimental work and engage in practical classes across various research areas throughout their studies. The financial resources and technical infrastructure of these research laboratories and academic centres provide a stable foundation for the delivery of master's and doctoral programmes. In preparation for each academic year, the relevant structural units of the university conduct monitoring of the condition and utilisation of equipment. Based on this review, necessary measures are identified and implemented. The Vice-Rector for Science and Innovation presents an annual report on the efficiency of educational and laboratory equipment to the Academic Council.

In cases where the acquisition of new equipment is deemed necessary, a formal request is submitted to the Rector and approved by the Vice-Rector for Science and Innovation. This is followed by consideration by the Budget Commission—a collegial body composed of representatives from university departments, student activists, and a public representative.

Decisions are made in accordance with the university's strategic priorities and financial planning objectives. The procurement of goods and services is governed by the documented procedure "Purchase Management", approved by the Rector. To ensure transparency and accountability, ATU publishes detailed annual reports on the use of budgetary and extra-budgetary funds via the official website and the financial reporting depository.

The scientific library regularly monitors the provision of academic programmes with educational and methodological literature, with particular attention to the fields of food production, light industry, and services. The library maintains its own digital collections and integrates licensed external databases, including EBSCO, WILEY (USA), ZNANIUM, LAN-IPR SMART, GREBENNIKON (Russia), RMEB, RNTL, and Gylym Ordasy (Kazakhstan), through the automated library system "MARK-SQL". The total volume of accessible full-text national and international resources exceeds 240,000 documents. Methodological support maps have been developed for the master's and doctoral programmes in the Technology of Food Products and Crop Processing. The library also publishes bulletins on new acquisitions, departmental information leaflets, and bibliographic indexes of publications by academic staff.

During the audit, the assessors are provided with a guided tour of the university's laboratories and learning infrastructure. They visit research laboratories equipped with spectrophotometers and high-performance liquid chromatography (HPLC) systems, and are informed of plans to establish a PCR laboratory for real-time analysis. A total of seven laboratory technicians support activities in these facilities, including a dedicated sample preparation laboratory with extractors. Teaching laboratories visited included those focused on canning, animal feed, pasta production, brewing, dairy technology, rheology, and baking technology (bread centre). Further facilities included the scientific library, a reading room, the Competence Centre, a study laboratory and a video production suite for online learning content. The latter is meant for teachers to produce high-quality audio and video for online courses, a relatively new focus of universities around the world.

The assessors note positively the relevance and standard of the equipment and facilities. Feedback from students also confirm a high level of satisfaction with the laboratories and their usage.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 3:

The assessors consider this criterion to be fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Module handbooks

Preliminary assessment and analysis of the experts:
The module handbooks generally contain essential information such as the module title, the persons responsible for delivery, teaching methods, credit allocation and workload, intended learning outcomes, module content, admission and examination requirements, forms of assessment with an explanation of how the final mark is calculated, relevant literature, and the date of the last amendment. However, the current handbooks require revision to more clearly and adequately present the content and learning outcomes of each course. Furthermore, the language of instruction must be stated consistently across all modules to ensure clarity and alignment with institutional standards.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Exemplay diplomas
- Exemplary diploma supplements
- Exemplary transcript of records

Preliminary assessment and analysis of the experts:
The experts confirm that all graduates are awarded a Diploma and a Diploma Supplement in English after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Diploma Supplement contains all required information about the degree programmes. The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA.

Criterion 4.3 Relevant Rules

Evidence:

- Self-assessment report
- Rules and regulations

- Website of the university
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The auditors confirm that the rights and obligations of both ATU and the students are clearly defined and binding. All rules and regulations are published on the university's website and students receive course materials at the beginning of each semester. In addition, all relevant information about the programmes is available on the programme homepages.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 4:

In their statement the university acknowledges the importance of transparency of the module handbooks. As such they have implemented a task force to effectively reflect the learning outcomes of the courses. The assessors welcome this swift action.

The assessors consider this criterion to be partially fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- Guide to Standards for Internal Quality Assurance of Higher and Postgraduate Education
- Order No.-TD (MO) - 33/860, dated 20 February 2024, issued by the Vice-Rector for Aca-demic Affairs
- Discussion during the audit

Preliminary assessment and analysis of the experts:
ATU has implemented an Internal Quality Assurance System (IQAS) that defines the university's policies, standards, and procedures for enhancing the quality of education and embedding a culture of continuous improvement. This system encompasses all institutional processes, including teaching and learning, research, student services, and administrative operations.

To support this system, ATU has developed the Guide to Standards for Internal Quality Assurance of Higher and Postgraduate Education (ATU-QaAD-G-5.3-2024-29). The guide promotes a shared understanding of educational quality, facilitates the integration of quality assurance mechanisms across all university functions, and contributes to the cultivation of a quality-oriented institutional culture. It aligns the university's quality management with international frameworks, notably the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), and applies to all structural units of the institution.

Procedures have been put in place for the identification, documentation, and resolution of non-conformities. Internal audits are conducted annually across all structural units to ensure compliance with the requirements of the Quality Management System (QMS). Each audit is scheduled and carried out by certified auditors, with findings documented in the electronic document management system. Non-conformity reports and audit summaries are consolidated by the Education Quality Management Department. Corrective actions are taken by the relevant academic or administrative units, and their implementation is verified during follow-up audits. The consolidated report on the internal audit, conducted

according to ISO 9001:2015 standards, is presented at the Academic Council meeting and informs the development of the action plan for the further development of the QMS.

ATU takes a comprehensive approach to the assurance of academic quality, beginning with the design and implementation of study programmes and continuing through to the evaluation of learning outcomes and graduate employability. The university makes use of digital technologies and promotes international collaboration, dual education models, and trilingual instruction. These efforts are supported by continued investment in infrastructure and by involving employers, students, and academic staff in programme development and review.

The quality of teaching is evaluated through various measures. The pedagogical performance of academic staff is assessed through structured class observations conducted by the Rector's Control Committee (RCC), as well as mutual observations, peer reviews, and student feedback. In addition, student satisfaction with teaching is regularly surveyed. Research productivity is monitored in accordance with the institutional development plan, which sets targets for publication in peer-reviewed journals through 2029. Teaching materials are reviewed to ensure their effectiveness in achieving intended learning outcomes. Feedback is also obtained from graduates and employers to ensure that the educational programmes remain relevant and aligned with labour market needs. Teaching quality is further monitored by scheduled visits and inspections carried out by the vice-rectors, deans, heads of departments, and relevant academic support offices. These processes are structured according to the PDCA (Plan-Do-Check-Act) cycle, ensuring that identified issues are addressed through action plans, implementation, and evaluation. Discussions regarding outcomes and improvements are held in departments, faculty councils, methodological councils, the Academic Council, and the Scientific Council.

The qualifications and teaching effectiveness of invited lecturers are assessed according to established criteria, including professional background, work experience, and institutional feedback. To support the overall quality of education, the university has established formal policies and internal regulations, which guide quality assurance procedures, the development of educational programmes, and institutional improvement based on internal and external assessments. The implementation of strategic planning documents is also regularly monitored.

To ensure timely response to audit findings and other quality-related issues, a dedicated quality chat channel (QRC) has been established where weekly results of inspections are shared. These results are analysed and compiled into monthly, semi-annual, and annual reports. The reports are approved by the First Vice-Rector and uploaded to the Documentolog-7 electronic document management system. They are also disseminated to relevant

stakeholders for discussion in department meetings, where necessary actions are determined to address identified discrepancies. The annual report on the results of education quality control is presented to the Academic Council, where it forms the basis for collegial decision-making and continuous institutional development.

In the second academic term of the 2023–2024 academic year, a survey of key stakeholders was conducted to evaluate the quality of higher and postgraduate degree programmes. This activity was mandated by Order No.-TD (MO) - 33/860, dated 20 February 2024, issued by the Vice-Rector for Academic Affairs. The survey involved students, graduates, employers, and academic staff. Its purpose was to collect feedback on programme relevance, teaching quality, and learning outcomes. The results of this assessment, along with other quality assurance findings, are communicated transparently via the official university website.

The assessors confirm that the study programme is subject to regular internal quality assurance procedures that involve all relevant stakeholder groups. The outcomes of these processes are systematically integrated into the continuous improvement of the programme. Clear structures and responsibilities are in place to support the further development of the study programme. Moreover, the results obtained from the various quality assurance instruments—such as surveys, statistical analyses, and performance indicators—are communicated transparently to the student body, thereby fostering a culture of openness and engagement.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 5:

The assessors consider this criterion to be fulfilled.

E Additional Criteria for Structured Doctoral Programmes

Criterion D 1 Research

Evidence:

- Self-assessment report
- Description of research activities and projects related to the doctoral programme on behalf of the university or research institute
- Study and examination regulations

- Sample of published dissertations or papers in scientific journals
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The PhD programmes in Technology of Food Products and Crop Processing Technology are closely aligned with the university's applied research priorities, with doctoral candidates actively participating in a broad range of research areas that respond to national needs in food innovation, nutrition, and agricultural processing. Over the past five years, the programmes have produced a notable number of PhD graduates—eight in Technology of Food Products and seven in Crop Processing Technology—with doctoral students contributing to state-funded research projects and co-authoring publications in indexed international journals. Research output also includes patents and active involvement in national and international scientific forums. The integration of doctoral candidates into funded projects by the Ministry of Science and Higher Education of the Republic of Kazakhstan underscores the practical orientation of research activities. While the applied focus is strong, the assessors recommend that the university consider strengthening the inclusion of fundamental research alongside its applied efforts in order to further enhance the scientific depth and sustainability of its doctoral programmes.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 1

The assessors consider this criterion to be fulfilled.

Criterion D 2 Duration and Credits

Evidence:

- Self-assessment report
- Study and examination regulations
- Statistical data
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The accredited doctoral degree programmes are structured in accordance with international standards and apply the European Credit Transfer and Accumulation System (ECTS),

comprising 180 ECTS credits over three years of full-time study. The programmes include modules for professional development, with the majority of credits allocated to research activities and the preparation of the doctoral dissertation. The credit system serves to enhance transparency, support international compatibility, and structure the curriculum by clearly delineating research and teaching components. The duration of study is influenced by the doctoral candidate's research progress and fulfilment of dissertation requirements. The regulations governing study and assessment aim to evaluate academic performance, research capacity, critical thinking skills, and the candidate's ability to make an original contribution to their field of science.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 2:

The assessors consider this criterion to be fulfilled.

Criterion D 3 Soft Skills and Mobility

Evidence:

- Self-assessment report
- Statistical data about mobility and international co-operations
- Discussion during the audit

Preliminary assessment and analysis of the experts:

The doctoral programme supports the development of personal qualities and the professional growth of doctoral candidates as independent researchers and specialists. It fosters the ability to work autonomously, adapt to evolving research contexts and methodologies, manage time effectively, and proactively seek solutions to complex problems. Doctoral candidates are encouraged to demonstrate persistence in achieving their goals, as well as the capacity to analyse and evaluate data critically. The programme also promotes communication skills, enabling candidates to engage effectively with colleagues, supervisors, and wider professional networks. Attributes such as flexibility, commitment, organisational ability, and openness to changes in working conditions, academic culture, and research environments are cultivated throughout the programme. The successful integration of these personal qualities with advanced professional competencies equips doctoral candidates to complete their dissertations and prepare for careers in both academic and non-academic settings. For more information about the mobility please refer to Chapter 1.3 of this report.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 3:

The assessors consider this criterion to be fulfilled.

Criterion D 4 Supervision and Assessment

Evidence:

- Self-assessment report
- Relevant results from internal surveys and evaluations
- Supervision and assessment regulations
- Discussion during the audit

Preliminary assessment and analysis of the experts:

Successful completion of research and the defence of a dissertation by doctoral candidates depend on the well-defined responsibilities of the doctoral student, the scientific supervisor, and the scientific adviser. Doctoral candidates undertake academic coursework and examinations to acquire the necessary knowledge and competencies in their field of study. Under the guidance of the supervisor and adviser, each candidate develops a detailed research plan, outlining key stages, timelines, expected outcomes, and methodological approaches. The candidate builds a theoretical framework, conducts experimental research, and disseminates findings through publications in peer-reviewed journals and conference proceedings, fulfilling the requirements for dissertation defence. The primary objective of the doctoral candidate is to produce and defend a dissertation that contributes original knowledge to the field.

The supervisor plays a central role in shaping the research process—supporting topic formulation, methodological design, and critical evaluation of results. The supervisor reviews the candidate's progress regularly, including literature analysis and experimental work, provides guidance on selecting suitable indexed journals and reviewers, facilitates academic networking, and offers constructive feedback to enhance the dissertation. A key responsibility of the supervisor is also to provide moral support, especially during challenging phases of the doctoral journey.

ATU ensures comprehensive institutional support for doctoral candidates by providing access to scientific libraries, research laboratories, academic centres, and digital learning platforms. Doctoral candidates also benefit from social and psychological services, as well as opportunities for international internships, which broaden their academic perspective and foster collaboration with global researchers. This multilayered support system—encompassing academic, financial, and professional assistance—enables doctoral candidates to

successfully complete their research work. The roles and responsibilities of scientific supervisors and advisers are defined in the official regulation ATU-DoPE-RPA-8.5-2024-05.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 4:

The assessors consider this criterion to be fulfilled.

Criterion D 5 Infrastructure

Evidence:

- Self-assessment report
- Co-operation agreements, regulations for internal and external co-operations
- Access to current scientific publications and books
- Discussion during the audit

Preliminary assessment and analysis of the experts:

Doctoral candidates at ATU benefit from a comprehensive and well-equipped research environment that is conducive to the successful implementation of their research projects. The university ensures the allocation of sufficient and accessible resources—human, technical, financial and informational—based on the needs of the educational process and the specific requirements of doctoral training. A wide array of specialised laboratories and educational-scientific centres are available to support advanced research in food technology and processing industries. These include fully equipped facilities for dairy and meat processing, cereal and bakery technology, fermentation production, and compound feed innovation. Each centre offers doctoral candidates access to industry-grade equipment and experimental production lines, enabling them to carry out laboratory and pilot-scale research, from raw material testing to finished product development. This infrastructure is complemented by digital and bibliographic resources, workspaces, and access to interdepartmental support services coordinated by the Office of Postgraduate Education. The university's commitment to maintaining and expanding its material and technical base ensures that doctoral students have the necessary tools and facilities to conduct high-level experimental work, develop new food technologies, and contribute meaningfully to their scientific disciplines.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 5:

The assessors consider this criterion to be fulfilled.

Criterion D 6 Funding

Evidence:

- Self-assessment report
- Cooperation agreements, regulations for internal and external co-operations
- Regulation on Stimulating Publications of Researchers and PhD Doctoral Students of ATU in Rating International Publications
- Discussion during the audit

Preliminary assessment and analysis of the experts:

A sustainable system of financial support for doctoral students and their research activities is implemented at ATU through state grant programs, which enhance motivation and contribute to the effectiveness of doctoral work. Doctoral students actively participate in research projects funded by the Ministry of Science and Higher Education of the Republic of Kazakhstan, allowing them to carry out and strengthen their scientific investigations. ATU encourages young researchers and doctoral candidates to publish in indexed international journals and to develop patents, in accordance with the Regulation on Stimulating Publications of Researchers and PhD Doctoral Students of ATU in Rating International Publications (ATU-SD-RPA-7.5.1-2021-08).

Additionally, ATU has established partnerships with foreign universities through memorandums, agreements, and contracts, providing doctoral students with the opportunity to undertake international scientific internships funded by educational grants. The university participates in numerous international initiatives such as ERASMUS+, the DAAD program, and the GIZ-funded project “Vocational Training for Economic Growth Sectors in Central Asia”.

Internal and external academic mobility is supported through agreements with partner institutions such as the University of Food Technologies (Bulgaria), Kemerovo State University (Russia), Kazakh National Agrarian Research University, and others. Academic mobility is further enhanced through the GIZ "PECA" project, particularly under the "Regional Cooperation" component. For instance, within the project “Development of Research Potential in Food Science in Central Asian Universities,” six doctoral students—including two from

accredited doctoral programmes—completed internships at the Lithuanian University of Health Sciences in Kaunas.

PhD students are supported in identifying grant opportunities for international internships, with information disseminated via the ATU official website and media platforms, facilitated by the Office of International Relations and Academic Mobility.

The assessors conclude that the financial, academic, and mobility support systems in place at ATU provide a strong foundation for high-level doctoral research and international engagement. These mechanisms contribute to the sustainability, visibility, and global integration of the university's doctoral programmes.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 6:

The assessors consider this criterion to be fulfilled.

Criterion D 7 Quality Assurance

Evidence:

- Self-assessment report
- Regulations and Guidelines for structured doctoral programmes
- Internal regulations about quality management
- Rules for checking written works for the presence of borrowings and their placement in an automated library and information system MARK-SQL
- Discussion during the audit

Preliminary assessment and analysis of the experts:

In the research activities of doctoral students, the fundamental principle is strict adherence to the rules of scientific practice, which are designed to ensure the quality, honesty, and reliability of scientific research.

During data collection, experimental work, and analysis of research results, doctoral students maintain honesty and objectivity. All experimental work is conducted in accredited scientific laboratories of the university, using verified and calibrated equipment.

Every stage of the research process is meticulously documented, including the methods employed and the final outcomes. The Science Department, the Postgraduate Education

Department, and the scientific library assist doctoral students in preparing scientific publications and dissertations, ensuring proper citation of other authors' works.

The results of doctoral students' research are presented and discussed at scientific conferences, where they undergo critical review by peers and experts. Constructive criticism is regarded as an essential component of improving research quality. Doctoral students strictly observe scientific ethics; analytical reviews and scientific articles are checked for plagiarism in accordance with the "Rules for checking written works for the presence of borrowings and their placement in an automated library and information system MARK-SQL" (ATU-EMM-RPA-8.3-2023-02).

Adherence to the principles of good scientific practice is integral to high-quality research. These principles guarantee transparency, reliability, and trustworthiness of scientific results, while safeguarding the reputation of both the doctoral student and the academic institution.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion D 7:

The assessors consider this criterion to be fulfilled.

F Additional Documents

No additional documents needed.

G Comment of the Higher Education Institution (15.07.2025)

The following quotes the comment of the institution:

Almaty Technological University expresses its sincere appreciation to the ASIIN expert panel for the comprehensive analysis of the Master's and Doctoral degree programs (Ma Technology of Food Products, Ma Crop processing Technology, PhD Technology of Food Products, PhD Crop processing Technology) within Cluster A, as well as for the constructive recommendations aimed at their further improvement. Based on the review of the report, we would like to provide the following response:

1. **Improving the quality of English translations of module descriptions and curricula**.

   The University acknowledges the importance of accurate and professional translation of module descriptions, especially in the context of the internationalization of educational programs. In this regard:

- A working group has been established, comprising faculty members with a high level of English proficiency and professional translators;
- A phased review of all English-language materials for the Cluster A programs is currently underway.

2. **Enhancing English language proficiency among faculty members, especially young specialists.**

   Improving language competence is a priority in the University's human resources policy. In order to implement this recommendation:

- Mandatory English language training courses have been introduced for Master's and PhD teaching staff;
- A system of incentives is being implemented for faculty members who obtain international certifications (IELTS, TOEFL, etc.).

3. **Revising module descriptions to increase transparency and compliance with international standards.**

   A comprehensive review of all module descriptions is currently underway in line with ESG and ASIIN requirements:

- Learning outcomes are being updated with clear links to competencies;

- Sections on content, assessment methods, and language of instruction are being more clearly structured.

4. **Ensuring a balance between applied and fundamental research within PhD programs**.

The University accepts the recommendation to strengthen the fundamental component of scientific research in PhD programs. As part of this effort:

- The expansion of courses on the theoretical foundations of technologies and scientific methodologies is planned;
- Dissertation topics are being broadened to include fundamental research areas.

5. **Continuing to strengthen quality assurance mechanisms at all levels – from course development to graduate employment monitoring.**

The University has already implemented a comprehensive Internal Quality Assurance System covering all stages of the educational process. At the same time, we fully support the experts' view on the need for the continuous improvement and further development of this system.

Almaty Technological University reaffirms its commitment to the principles of quality, international openness, and the academic integrity of its educational programs. All of the above recommendations have been accepted for implementation and incorporated into the Development Plan for the Cluster A educational programs.

H Summary: Expert recommendations (05.08.2025)

Taking into account the additional information and the comments given by the university the peers summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Technology of Food Products	With requirements for one year	30.09.2032	EUR-ACE®	30.09.2032*
Ma Crop Processing Technologies	With requirements for one year	30.09.2032	EUR-ACE®	30.09.2032*
PhD Technology of Food Products	With requirements for one year	30.09.2032	--	--
PhD Crop Processing Technologies	With requirements for one year	30.09.2032	--	--

*Subject to the approval of the ENAEE Administrative Council

Requirements

For all degree programmes

A 1. (ASIIN 4.1) The module handbooks need to be reworked to show more adequately the contents and learning outcomes of each course; and the language of instruction for each course must be entered correctly.

Recommendations

For all degree programmes

E 1. (ASIIN 3.1) It is recommended to enhance English proficiency of teaching staff.

For the Master's degree programmes

E 2. (ASIIN 1.3) It is recommended to extend international partners to allow student mobility.

For the PhD programmes

E 3. (ASIIN D) It is recommended to consider carrying out fundamental research next to applied research.

I Comment of the Technical Committee 08 – Agriculture, Forestry, and Food Sciences (11.09.2025)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee confirms the overall good quality of the programmes with respect to the accreditation criteria and follows the recommendation of the expert group without changes.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee deems that the intended learning outcomes of the two concerned degree programmes do comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 08 – Agriculture, Forestry, and Food Sciences.

The Technical Committee 08 – Agriculture, Forestry, and Food Sciences recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal/ Accredited by German Engineers**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ma Technology of Food Products	With requirements for one year	30.09.2032	EUR-ACE®	30.09.2032*
Ma Crop Processing Technologies	With requirements for one year	30.09.2032	EUR-ACE®	30.09.2032*
PhD Technology of Food Products	With requirements for one year	30.09.2032	--	--
PhD Crop Processing Technologies	With requirements for one year	30.09.2032	--	--

*Subject to the approval of the ENAEE Administrative Council

J Decision of the Accreditation Commission (26.09.2025)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the procedure and acknowledges the good quality of the programmes and their compliance with the relevant accreditation criteria, with the exception of the module handbooks. The wording of two recommendations is slightly changes to improve their clarity.

Assessment and analysis for the award of the EUR-ACE® Label:

The Accreditation Commission deems that the intended learning outcomes of the two Master´s degree programmes do comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 08 – Agriculture, Forestry, and Food Sciences.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal/ Accredited by German Engineers**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ma Technology of Food Products	With requirements for one year	30.09.2032	EUR-ACE®	30.09.2032*
Ma Crop Processing Technologies	With requirements for one year	30.09.2032	EUR-ACE®	30.09.203*
PhD Technology of Food Products	With requirements for one year	30.09.2032	--	--
PhD Crop Processing Technologies	With requirements for one year	30.09.2032	--	--

*Subject to the approval of the ENAEE Administrative Council

Requirements

For all degree programmes

A 1. (ASIIN 4.1) The module handbooks need to be reworked to show more adequately the contents and learning outcomes of each course; and the language of instruction for each course must be entered correctly.

Recommendations

For all degree programmes

E 1. (ASIIN 3.1) It is recommended to enhance English proficiency of teaching staff.

For the Master's degree programmes

E 2. (ASIIN 1.3) It is recommended to increase the number of international partners to allow student mobility.

For the PhD programmes

E 3. (ASIIN D) It is recommended to consider carrying out fundamental research in addition to applied research.

K Fulfilment of Requirements for the PhD Programmes (12.12.2025)

Analysis of the experts and the Technical Committee (02.12.2025)

Requirements

For both PhD programmes

A 1. (ASIIN 4.1) The module handbooks need to be reworked to show more adequately the contents and learning outcomes of each course; and the language of instruction for each course must be entered correctly.

Initial Treatment	
Experts	fulfilled Vote: unanimously Justification: The university presented revised module handbooks for both programmes which contains the information about the modules at an adequate level of detail and satisfies the experts demands.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the recommendation of the experts.

Decision of the Accreditation Commission (12.12.2025)

Degree programme	**ASIIN-label**	**Subject-specific label**	**Accreditation until max.**
PhD Technology of Food Products	All requirements fulfilled	-	30.09.2032
PhD Crop Processing Technologies	All requirements fulfilled	-	30.09.2032

Appendix: Programme Learning Outcomes and Curricula

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master degree programme Technology of Food Products:

LO1	Conducts research in the field of food technology based on a holistic systematic scientific worldview using knowledge of the history and philosophy of science.
LO2	Uses modern methods and technologies of scientific and professional communication in a foreign language in the field of professional activity.
LO3	Applies knowledge of psychology in solving managerial problems and in planning professional and personal development.
LO4	Applies knowledge of the methodological foundations of higher education pedagogy and professional knowledge and skills in professional and educational activities.
LO5	Conducts independently theoretical and experimental research, analysis of their results to solve scientific and practical problems in the food industry.
LO6	Participates in the work of teams involved in project management based on knowledge of modern methodology, tools, standards in the field of project management.
LO7	Manages the processes of ensuring the quality of food products and services in accordance with regulatory documents.
LO8	Makes judgments based on the collection and interpretation of information, taking into account ethical and social responsibility and scientific ethics for their application.
LO9	Develops innovative food technologies based on scientific knowledge, best practices and food industry perspectives.
LO10	Presents information, ideas, conclusions, problems and solutions in a clear and understandable way using scientific and professional food industry terminology.

The following **curriculum** is presented:

0 Appendix: Programme Learning Outcomes and Curricula

1 semester	2 semester	3 semester	4 semester
M 1	M 8	M 14.1	M 18
History and philosophy of science	Pedagogical practice	Innovative equipment and technologies in the food industry	Research practice
1lec, 1,4 prac		1lec, 3 lab	
4 ECTS	4 ECTS	6 ECTS	14 ECTS
exam	**report**	**exam**	**report**
		M14.2	
		Technology of food bio-products	
		1lec, 3 lab	
		6 ECTS	
		exam	
M 2	M 9.1	M 15.1	M 19
Professional foreign language	Project management	Functional and specialized food technology	Research work of a master student, including internship and master's thesis
2,4 prac	1lec, 2 prac	1lec, 3 lab	
4 ECTS	5 ECTS	6 ECTS	8 ECTS
exam	**exam**	**exam**	**report**
	M 9.2	M15.2	
	Product quality management	Specialized food products of animal and vegetable origin	
	1lec, 2 prac	1lec, 3 lab	
	5 ECTS	**6 ECTS**	
	exam	**exam**	
M 3	M10	M16.1	M 20
Higher School Pedagogy	Food Quality Assurance	Nanotechnology in the food industry	Design and defense of master's thesis
1lec, 1,4 prac	1lec, 2 prac	2 lec, 2 prac	**8 ECTS**
4 ECTS	**5 ECTS**	**6 ECTS**	диссертация
exam	**exam**	**exam**	
		M16.2	
		Teaching methods based on the specifics of the subject	
		2 lec, 2 prac	
		6 ECTS	
		exam	
M 4	M11.1	M17.1	
Psychology of management	Nutriciology	Food Additive Technology	
1lec, 1,4 prac	1lec, 2 prac	2 lec, 2 prac	
4 ECTS	**5 ECTS**	**6 ECTS**	
exam	**exam**	**exam**	
	M11.2	M17.2	
	History and vocational education systems	Didactics of vocational education and training	
	1lec, 2 prac	2 lec, 2 prac	
	5 ECTS	**6 ECTS**	
	exam	**exam**	
M 5.1	M12.1	M18	
Mathematical modeling of engineering problems	Artificial food	Research work of a master student, including internship and master's thesis	
1lec, 2 prac	1lec, 2 prac	**6 ECTS**	
5 **ECTS**	**5 ECTS**	**report**	
exam	**exam**		
M 5.2	M12.2		

Methodology of food design	Biotechnology in food production		
1lec, 2 prac	1lec, 2 prac		
5 **ECTS**	**5 ECTS**		
exam	**exam**		
M 6.1	M13		
Planning, organization of the experiment and data processing	Research work of a master student, including internship and master's thesis		
1lec, 2 prac	**6 ECTS**		
5 **ECTS**	**report**		
exam			
M6.2			
Microbiological methods of food quality control			
1lec, 2 prac			
5ECTS			
exam			
M 7			
Research work of a master student, including internship and master's thesis			
4 **ECTS**			
report			
S5 +10,6 prac=15,6 ч/нед	S4lec+8пр=12 ч/нед	S6 lec+4 пр+6лаб=16ч/нед	
30 ECTS	**30 ECTS**	**30ECTS**	**30 ECTS**
Total			**120 ECTS**
6 exam, 1 report	4 exam, 1 practice report, 1 report	4 exam, 1 report	1 practice report, 1 report, 1 Master's dissertation

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master degree programme Crop Processing Technology:

LO1	Organises the control of processing product production and quality management using quality assurance systems.
LO2	Applies knowledge of methodology and experimental research methods in scientific activities and in the creation of high-quality products in processing industries.
LO3	Demonstrates an evolving understanding of the scientific worldview, including the history and philosophy of science.
LO4	Applies knowledge of the methodological foundations of higher and vocational education pedagogy in educational activities.
LO5	Uses modern methods and technologies of scientific and professional communication in foreign languages within their professional field.
LO6	Applies knowledge of psychology to solve managerial problems and to plan professional and personal development.
LO7	Manages production processes based on the evaluation of processing enterprise activities.
LO8	Independently conducts theoretical and experimental research, and analyses results to address scientific and practical challenges in the food and grain processing industries.
LO9	Develops innovative processing technologies based on scientific knowledge, best practices, and industry development prospects.
LO10	Communicates information, ideas, conclusions, problems, and solutions clearly to both specialists and non-specialists.

0 Appendix: Programme Learning Outcomes and Curricula

1 semester	2 semester	3 semester	4 semester
M 1	M 8.1	M 14.1	M 19
History and philosophy of science	Scientific basis of technology of grain products of increased nutritional value	Innovative technologies for grain storage and processing	Research practice
1lec., 2 prac.	M 8.2	M 14.2	3 lec.
4 ECTS	Scientific bases of technology of plant-growing products of increased nutritional value	Innovative technologies for bakery, pasta and confectionery products	14 ECTS
exam	M 8.3	M 14.3	**Report protection**
M 2	Biocatalysis of plant raw materials in fermentation production	Innovative technologies for the production of beverages and fermentation products	M 20
Foreign language (professional)	1lec., 2 prac.	2 lec., 2 prac.	Research work of a master's student, including internship and completion of a master's thesis (RWMS)
3 prac.	5 ECTS	6 ECTS	2 lec.
4 ECTS	**exam**	**exam**	8 ECTS
exam	M 9.1	M 15.1	**Report protection**
M 3	Control of technological properties of grain	Physico-chemical bases and principles of grain processing	M 21
Management Psychology	M 9.2	M 15.2	Preparation and defense of a master's thesis (PDMT)
1lec., 2 prac.	Modern technologies of bread, confectionery and pasta	Physico-chemical bases of bakery, pasta and confectionery production	2 lec.
4 ECTS	M 9.3	M 15.3	8 ECTS
exam	Project management	Quality management in winemaking	Defense of dissertation work
M 4	1lec., 2 prac.	2 lec., 2 prac.	
Higher school pedagogy	5 ECTS	6 ECTS	
1lec., 2 prac.	**exam**	**exam**	
4 ECTS	M 10.1	M 16.1	
	Ensuring the quality and safety of grain processing products	Expertise of grain and grain products	
exam	M 10.2	M 16.2	
M 5.1	Ensuring the quality and safety of bakery, pasta and confectionery products	Expertise of food products from plant raw materials for rational and balanced nutrition	
Fundamentals of scientific research in the technology of processing industries	M 10.3	M 16.3	
M 5.2	Ensuring the quality and safety of beverages and fermented products	Expertise of alcoholic and non-alcoholic drinks	
Mathematical modeling of engineering problems	1lec., 2 prac.	2 lec., 2 prac.	
M 5.3	5 ECTS	6 ECTS	
Nanotechnology in the food industry	**exam**	**exam**	
1 lec., 2 lab.	M 11.1	M 17.1	
5 ECTS	Microbiology of grain and grain products	Resource-saving technologies of grain processing industries	
exam	M 11.2	M 17.2	
M 6	Biotechnological basis of bread and flour confectionery products	The use of secondary products in the technology of bakery, pasta and confectionery products	
Planning, organization of the experiment and data processing	M 11.3	M 17.3	
1 lec., 2 lab.	Microbiology of alcoholic and non-alcoholic beverages	Use of secondary resources from fermentation plants	
5 ECTS	1lec., 2 prac.	2 lec., 2 prac.	
exam	5 ECTS	6 ECTS	
M 7	**exam**	**exam**	
Research work of a master's student, including internship and completion of a master's thesis (RWMS)	M 12	M 18	
2,4 lec.	Pedagogical practice	Research work of a master's student, including internship and completion of a master's thesis (RWMS)	
4 ECTS	4 lec.	2 lec.	
Report protection	4 ECTS	6 ECTS	

	Report protection	**Report protection**	
	M 13		
	Research work of a master's student, including internship and completion of a master's thesis (RWMS)		
	2 lec.		
	6 ECTS		
	Report protection		
∑7,4 lec.+13 prac.=20,4 ч/нед	∑10 lec.+8 prac.=18ч/нед	∑10 lec.+8 prac.=18ч/нед	∑7 lec.=7ч/нед
6 exam., 1 report protection	4 exam., 2 report protection	4 exam., 1 report protection	2 report protection, 1 Defense of dissertation work
30 ECTS	30 ECTS	30 ECTS	30 ECTS
Component of choice 5 ECTS	Component of choice 20 ECTS	Component of choice 24 ECTS	Component of choice 0 ECTS
16,66%	66,66%	80,00%	0,00%

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the PhD programme Technology of Food Products:

LO1 Employs scientific and professional communication tools for analytical writing, critical information evaluation, and the use of digital technologies.

LO2 Demonstrates a comprehensive understanding of scientific knowledge, cultural values, and current trends in food engineering and technology.

LO3 Evaluates current trends and patterns in national and international scientific development in food production engineering and technology.

LO4 Applies scientific expertise and professional skills to implement innovative educational policies.

LO5 Conducts advanced scientific research in the professional field using in-depth theoretical and specialised knowledge.

LO6 Assesses the socio-economic impact of new developments in science, engineering, and technology within the professional domain.

LO7 Analyses and interprets results from original research to address real-world scientific and practical issues.

0 Appendix: Programme Learning Outcomes and Curricula

1 semester	2 semester	3 semester	4 semester	5 semester	6 semester
M 1	M 6	M 10	M 12	M 13	M 14
Academic Writing	Theory of food technologies	Research practice	Research work of a doctoral student, including internship and completion of a doctoral dissertation	Research work of a doctoral student, including internship and completion of a doctoral dissertation	Research work of a doctoral student, including internship and completion of a doctoral dissertation
1,2 prac	1lec, 2 prac	**10 ECTS**	**30 ECTS**	**30 ECTS**	**18 ECTS**
2 ECTS	**5 ECTS**	report	report	report	report
exam	exam				
M 2	M 7.1	M 11			M15
Methods of Scientific Research	Methods of teaching engineering disciplines	Research work of a doctoral student, including internship and completion of a doctoral dissertation			Writing and defending a doctoral dissertation
1 lec, 0,8 prac	2 lec, 1 пр	**20 ECTS**			**12 ECTS**
3 ECTS	**5 ECTS**	report			dissertation
exam	exam				
	M 7.2				
	Theory and practice of improving food technology				
	2 lec, 1 пр				
	5 ECTS				
	exam				
M 3.1	M 8.1				
Designing the educational process of the university	Barrier technologies in the food industry				
1 lec, 2 prac	2 lec, 1 пр				
5 ECTS	**5 ECTS**				
exam	exam				
M 3.2	M 8.2				
Digital technologies in science and industry	Development and management of scientific projects				
1 lec, 2 prac	2 lec, 1 prac				
5 ECTS	**5 ECTS**				
exam	exam				
M 4	M 9				
Pedagogical practice	Research work of a doctoral student, including internship and completion of a doctoral dissertation				
10 ECTS	**15 ECTS**				
report	report				
M 5					
Research work of a doctoral student, including internship and completion of a doctoral dissertation					
10 ECTS					
report					
S 2 lec+4 prac=6	S 5 lec+4 prac=9 h/week				
30 ECTS	**30 ECTS**	**30ECTS**	**30 ECTS**	**30ECTS**	**30 ECTS**
Total					**180 ECTS**
3 exam, 1 practice report, 1 report on research and development work	3 exam, 1 report on research and development work	1 report по практике, 1 report on research and development work	1 report on research and development work	1 report on research and development work	1 report on research and development work
Elective modules 5 ECTS (16 %)	Elective modules 10 ECTS (33,3 %)	Elective modules 0 ECTS (0%)	Elective modules 0 ECTS (0%)	Elective modules 0 ECTS (0%)	Elective modules 0 ECTS (0%)

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the PhD programme Crop Processing Technology:

LO1	Demonstrates the use of scientific and professional communication tools for analytical writing, critical evaluation of information, and the application of digital technologies.
LO2	Exhibits a comprehensive understanding of scientific knowledge concerning the natural world, life values, and cultural heritage.
LO3	Applies innovative developments in biotechnology for the processing of plant-based raw materials.
LO4	Utilizes in-depth specialized theoretical knowledge to design and conduct complex scientific research.
LO5	Integrates advances in genetic engineering and biotechnology into research for developing new functional products in the processing industry.
LO6	Analyzes and interprets research data to address scientific and practical challenges in crop processing.
LO7	Proposes scientifically grounded, innovative solutions to improve the safety and efficiency of processed products.

1 semester	2 semester	3 semester	4 semester	5 semester	6 semester
M 1	M 5	M 9	M 11	M 12	M 13
Academic writing	Theory of technology of storage and processing of plant production	Research practice	Research work of the doctoral student, including the doctoral dissertation and internship	Research work of the doctoral student, including the doctoral dissertation and internship	Research work of the doctoral student, including the doctoral dissertation and internship
3 prac.	1lec., 2 prac.	6 lec.			
5 ECTS	5 ECTS	10 ECTS	18 lec.	18 lec.	10,8 lec.
exam	**exam**	**report**	30 ECTS	30 ECTS	18 ECTS
M 2	M 6.1	M 10	**report**	**report**	**report**
Scientific research methods	Biotechnological bases of food production	Research work of the doctoral student, including the doctoral dissertation and internship			M 14
1lec., 2prac.	M 6.2				Formalisation and defence of the doctoral dissertation
5 ECTS	Fundamentals of genetic engineering and GMO safety	12 lec.			4 lec.
exam	1lec., 2 prac.	20 ECTS			12 ECTS
M 3	5 ECTS	**report**			**report**
Pedagogical practice	**exam**				
6 lec.	M 7.1				
10 ECTS	System analysis of technological processes of processing and refining of crop production				
report	M 7.2				
M 4	Electrophysical methods of grain processing at processing enterprises				
Research work of the doctoral student, including the doctoral dissertation and internship	1lec., 2 prac.				
	5 ECTS				

6 lec.	**exam**				
10 ECTS	M 8				
report	Research work of the doctoral student, including the doctoral dissertation and internship				
	9 lec.				
	15 ECTS				
	report				
∑13 lec.+5prac.=18 hours per week	∑12 lec.+6 prac.=18 hours per week	∑18 lec.=18 hours per week	∑18 lec.=18 hours per week	∑18 lec.=18 hours per week	∑14,8 lec.=14,8 hours per week
2 exam., 2 report protection	3 exam., 1 report protection	2 report protection	1 report protection	1 report protection	1 report protection, 1 Defence
30 ECTS	30 ECTS	30 ECTS	30 ECTS	30 ECTS	30 ECTS
Component of choice 0 ECTS	Component of choice 10 ECTS	Component of choice 0 ECTS	Component of choice 0 ECTS	Component of choice 0 ECTS	Component of choice 0 ECTS
0,00%	33,33%	0,00%	0,00%	0,00%	0,00%
					Total 180 ECTS