

ASIIN Seal & EQAS-Food Label

Accreditation Report

Bachelor's Degree Programmes Food Science and Technology Agricultural Extension and Communication

Provided by Universitas Sebelas Maret (UNS), Indonesia

Version: 10 October 2024

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) Eng- lish transla- tion of the name	Labels applied for	Previous accredita- tion (issu- ing agency, validity)	Involved Technical Commit- tees (TC) ²	
Teknologi Pangan	Food Science and Technol- ogy	ASIIN, EQAS-Food		08	
Penyuluhan dan Komunikasi Pertanian	Agricultural Ex- tension and Communica- tion	ASIIN		08	
Date of the contract: 25.05.2022 Submission of the final version of the self-assessment report: 27.11.2023 Date of the onsite visit: 2526.04.2024 at: Universitas Sebelas Maret					
Expert panel: Prof. Dr. Markus Frank, Nuertingen-Geislingen University Prof. Dr. Gerhard Schleining, University of Natural Resources and Life Sciences, Vienna					
Arum Tiyas Suminar, Kamada Soy Sauce Inc. Fitria Yasmin Mazaya, student at Gajdah Mada University					
Representatives of the ASIIN headquarter: Daniel Seegers					
Responsible decision-making comm grammes	nittee: Accreditat	ion Commission for	Degree Pro-		
Criteria used:					

¹ ASIIN Seal for degree programmes

² TC: Technical Committee for the following subject areas: TC 08 - Agriculture, Forestry and Food Sciences

ASIIN General Criteria, as of December 12, 2021 Subject-Specific Criteria of Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture as of March 27, 2015 ISEKI Criteria for EQAS-Food Award, as of January 16, 2018

B Characteristics of the Degree Programmes

a) Name	Final degree (original/Eng- lish translation)	b) Areas of Spe- cialization	c) Corre- sponding level of the EQF ³	d) Mode of Study	e) Dou- ble/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Food Science and Technology	S.T.P (Sarjana Teknologi Pan- gan / Bachelor. in Food Technol- ogy	/	6	Full time	/	8 Semes- ters	144 SKS 216 ECTS	Annually/ August
Agricultural Exten- sion and Commu- nication	S.P. (Sarjana Pertanian/ Bachelor of Ag- riculture)	/	6	Full time	/	8 Semes- ters	144 SKS 216 ECTS	Annually/ August

³ EQF = The European Qualifications Framework for lifelong learning

For the <u>Bachelor's degree Food Science and Technology</u>, the institution has presented the following profile on its website:

"Vision

Becoming an excellent study programme at the international level in the field of food science and technology, which is oriented towards sustainable integrated agricultural development for improving the community welfare by 2030.

Mission

- 1. To organise education in Food Science and Technology as to produce competent and competitive graduates at the international level;
- 2. To conduct researches to develop Food Science and Technology to support integrated and sustainable agriculture development; and
- 3. To organise community service to help solve problems in the food sector.

Goals to be achieved

- 1. To produce noble, professional, and competitive graduates in the field of Food Science and Technology;
- 2. To develop science and technology in the field of local commodity-based innovative food; and
- 3. To increase the role in community empowerment in the food sector through the application of appropriate technology."

For the <u>Bachelor's degree Agricultural Extension and Communication</u>, the institution has presented the following profile on its website:

"Vision

To be an excellent study program at the international level in the field of agricultural extension and communication. Those two domains are coherence and overlap to get new insights and applications of the sustainable agricultural development.

Mission

 Providing Education In The Field Of Agricultural Extension And Communication To Facilitate Students In Achieving Competence, Professional, Creative, Tough And High-Integrated.

- 2. Conducting Research To Develop Science And Technology In The Field Of Agricultural Extension And Communication That Supports Sustainable Agricultural Development.
- 3. Organizing Community Service To Solve Agricultural Extension And Communication Problems Faced By The Community.

Goals to be achieved

- 1. To have knowledge in Agricultural Extension and Communication for empowering community to achieve sustainable agricultural development.
- 2. To be able to apply knowledge and technology on Agricultural Extension and Communication to empower community to realise sustainable social changes in the fields of social economics and the environment.
- 3. To possess an attitude of respect for others, a commitment to professionalism in their field of expertise, an entrepreneurial spirit, and a willingness and ability to learn throughout life."

C Expert Report for the ASIIN Seal⁴

1. The Degree Programme: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)

Evidence:

- Objective-module matrices
- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks
- Module descriptions
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts refer to the Subject Specific Criteria (SSC) of the Technical Committee Agriculture, Forestry and Food Sciences (TC 08) as a basis for assessing whether the intended learning outcomes of the Bachelor of Science in Food Technology (FST) and the Bachelor of Agricultural Extension and Communication (AEC), as defined by Universitas Sebelas Maret (UNS), correspond to the competences as outlined in the SSC. They come to the following conclusion:

The qualification objectives of the FST programme are designed to cultivate graduates with a comprehensive understanding and application of food science and technology principles. This includes mastery of food chemistry and analysis, food microbiology and biotechnology, food process engineering, food biochemistry and nutrition, food sensory analysis, food safety, and food regulation. The programme integrates these aspects to enable students to produce safe, high-quality food products.

Students in the FST programme receive a thorough education in the fundamental sciences underlying food science, with a particular emphasis on the development of local food resources and the principles of sustainable development goals in the food sector. This holistic approach prepares graduates for a wide range of roles within the food industry and beyond.

Upon completion of the programme, graduates are equipped with both technical and soft skills essential for success in their careers. They are able to communicate effectively, both orally and in writing, on technical and non-technical aspects to various audiences. The programme also fosters critical thinking, analytical skills, and problem-solving abilities, enabling graduates to work independently and make data-driven decisions.

Furthermore, FST graduates are prepared to work collaboratively in teams, demonstrate entrepreneurial skills, and interact effectively with people from diverse backgrounds. They develop leadership abilities and can adapt to various situations. The programme also instills a strong commitment to professionalism and ethical values, ensuring that graduates are well-rounded professionals ready to contribute meaningfully to the food industry, research institutions, educational settings, and governmental agencies.

The qualification objectives of the FST programme are designed to align with international standards. The programme is now being subjected to the criteria of the EQAS-Food Awards. Upon a thorough examination of the submitted documents and based on the discussions held during the audit, the experts conclude that the programme also meets the criteria set by IFA (ISEKI-Food Association) and therefore justifies the award of the corresponding seal.

The FST programme covers the criteria areas outlined by IFA to a percentage of more than 80%, including food safety and microbiology, food chemistry and analysis, food processing and engineering, quality management and the law, as well as generic competences. These criteria areas ensure that students acquire knowledge and skills in ensuring the safety of food products, understanding food chemistry principles, utilizing analytical techniques for food analysis, optimizing food processing and engineering techniques, adhering to quality management practices and legal standards, and developing generic competences such as critical thinking, problem-solving, teamwork, communication, and ethical decision-making.

By incorporating the criteria set by IFA into the curriculum, the FST programme ensures that graduates are well-prepared to meet international standards in the field of food science and technology.

The qualification objectives of the AEC programme aim to develop graduates who possess the necessary skills to address complex agricultural development challenges and empower

communities through effective communication and extension services. To achieve this, students receive a comprehensive education in agricultural sciences, communication theory, and community development principles.

The programme equips students with a broad knowledge base in agriculture, encompassing technical, economic, and social aspects. This foundational knowledge allows graduates to formulate comprehensive solutions to agricultural development problems. Additionally, students master specialized knowledge in AEC, focusing on community empowerment strategies and the various roles they will play as organizers, innovators, facilitators, motivators, dynamists, creators, and catalysts.

Upon completion of the programme, graduates are prepared to synergize stakeholders and balance diverse interests in decision-making processes, ensuring effective agricultural extension and community empowerment. They develop the ability to plan, implement, and evaluate agricultural development programmes professionally, with a focus on fostering sustainable community participation.

AEC graduates are skilled in applying communication theory and information technology to plan and develop innovative approaches in agriculture, agricultural extension services. They can analyse, manage, and communicate agricultural innovations to stakeholders, building synergies that promote progressive agricultural practices. The programme also cultivates graduates' ability to analyse ecological, social, cultural, and economic conditions of specific communities, enabling them to initiate change prospects based on principles of justice and sustainability, while considering local, regional, national, and global contexts.

Furthermore, the AEC programme emphasizes research skills, preparing graduates to conduct studies in community change, agricultural extension, communication, and community empowerment using scientific methods. Graduates also develop strong ethical foundations, demonstrating high integrity, democratic values, and a commitment to lifelong learning. These diverse skills and knowledge areas enable AEC graduates to pursue careers in agricultural development, community empowerment, research institutions, government agencies, and non-governmental organizations focused on rural development and sustainable agriculture.

The curricula for both programmes undergo regular evaluation and updating processes to ensure they remain relevant and aligned with industry needs and academic standards.

For both programmes, curriculum updates, including revisions to Programme Educational Objectives (PEOs) and Programme Learning Outcomes (PLOs), are conducted through a comprehensive and inclusive process. This process typically involves the following steps:

1. Annual evaluations are carried out to assess the current curriculum's effectiveness.

- 2. A major curriculum review is conducted every four years.
- 3. The review process involves a wide range of stakeholders, including:
 - Faculty and programme leaders
 - Teaching staff
 - o Current students
 - o Alumni
 - o Industry representatives and graduate employers
 - Professional associations (e.g., PATPI for FST, APP-KPPMI for AEC)
 - o Representatives from similar programmes at other institutions
- 4. Data for the review is gathered through various means, including:
 - Surveys of student satisfaction
 - o Questionnaires distributed to graduate employers
 - Tracer studies of alumni
 - Analysis of industry trends and developments in the field
- 5. Focus Group Discussions (FGDs) or workshops are organized to bring stakeholders together and discuss potential updates.
- 6. The curriculum updates take into account:
 - Feedback from all stakeholders
 - Developments in the respective fields
 - Changes in national education standards and regulations
 - Alignment with international standards (e.g., IFT for FST)
- 7. Proposed changes to PEOs and PLOs are formulated based on the review outcomes.
- 8. The updated curriculum, including revised PEOs and PLOs, is then proposed for official enactment.
- 9. Once approved, the new curriculum is formalized through a UNS Rector's Decision.

10. The updated curriculum is then disseminated to all academic staff and students through various channels, including the Academic Handbook and programme websites.

The curriculum development and revision process for the FST and AEC programmes at UNS demonstrates a robust and comprehensive approach to ensuring educational relevance and quality. This process, which includes regular evaluations and a major review every four years, involves a diverse group of stakeholders including faculty, students, alumni, industry representatives, and professional associations. The approach is particularly noteworthy for its emphasis on aligning academic outcomes with industry needs, national education standards, and international benchmarks.

This cooperation between UNS and, in particular, its industrial partners results in good chances for the graduates on the national job markets, as well as the opportunity to transfer to other academic programmes to complete a Master's or maybe even a PhD programme. Although the programmes are mainly aimed at the national market, the auditors noted that the students participating in both programmes had a very high level of proficiency in English, which was very impressive.

The employers confirm during the audit discussions that there is a high demand for Food Technology graduates as well as communication experts in the agricultural field. Furthermore, they emphasise that UNS graduates are a most welcome choice because they are "quick learners", and able to adapt very quickly to the specific situations, bring new ideas and energy, are able to solve problems and could be a motor for SMEs. Nevertheless, the industry representatives also underline that there is room for improvement regarding entrepreneurial skills of the students, especially for basic financing knowledge. The experts recommend strengthening these competences within the both programmes to better prepare graduates for the dynamic and innovative challenges of the agriculture and food industry.

In summary, the auditors are of the opinion that the objectives and intended learning outcomes of both programmes are reasonable and well founded and correspond to level 6 of the European Qualification Framework. They are convinced that the intended qualification of the undergraduate programmes will enable students to take up a job appropriate to their qualification.

Overall, the both programmes aim to produce well-rounded professionals who are prepared to contribute to various sectors of the food industry while also having the flexibility to explore career opportunities outside of it.

Criterion 1.2 Name of the degree programmes

Evidence:

- Self-Assessment Report
- Diploma Supplements
- Discussions during the audit
- List of laboratory equipment

Preliminary assessment and analysis of the experts:

The auditors confirm that the English translation and the original Indonesian names of the Bachelor's degree programme Food Technology and Agricultural Extension and Communication correspond with the intended aims and learning outcomes as well as the main course language.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plan of the degree programme
- Curriculum handbook
- Academic guidelines
- Module descriptions
- Objective-module matrices
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The curricula of the degree programmes are designed to implement the programme objectives and learning outcomes and they are subject to constant revision processes. As such, the curricula are reviewed regularly and commented on by students and teachers as well as by external stakeholders such as alumni or partners from the private sector, and other universities. Regular changes are made to ensure that the curricula are up to modern standards.

The programmes under review are offered by the Faculty of Agriculture. They are designed for eight semesters or four years, in which the students have to achieve at least 144 credit points (SKS), which is equivalent to approximately 216 ECTS points (see chapter 1.5 for

more details). The maximum period of study is 14 semesters. Each semester is equivalent to 16 weeks of learning activities including one week for midterm exams and one week for final exams. The odd semester starts in August and ends in January of the following year, while the even semester lasts from February to July.

The curricula of both programmes consist of university requirements and compulsory and elective courses determined by UNS and the respective faculties and departments. University requirements are courses that need to be attended by all undergraduate students at UNS, some of which rely on national regulations. There are eight university requirements: Bahasa Indonesia, Religious Education, Civic Education, Entrepreneurship, Pancasila, Community Service, an internship and a final project. These courses run in parallel to the subject-specific courses over the entire course of the programmes.

At the beginning of the FST study programme, students are introduced to a range of foundational subjects that provide a comprehensive base for their future studies. These include general education courses like Pancasila, civics, and language courses, as well as fundamental sciences such as biology, physics, calculus, and chemistry. This initial phase establishes a solid foundation in both national values and the basic sciences crucial for food science and technology.

In the middle phase of the programme, the curriculum becomes more focused on food science and technology. Students delve into specialized subjects such as microbiology, food chemistry, biochemistry, and food industry operations. They also begin to engage in practical laboratory work, combining theoretical knowledge with hands-on experience. This phase helps students develop a deeper understanding of food science principles and their practical applications.

As students progress further, the curriculum narrows its focus to advanced areas of food science and technology. This phase includes specialized subjects like food safety, sensory analysis, food processing technology, and nutrition evaluation. Students also learn about food regulation, quality control, and HACCP (Hazard Analysis Critical Control Point). There's a strong emphasis on practical skills and industry relevance, with courses on food process engineering, product development, and factory design.

In the final phase of the programme, students apply their knowledge in real-world settings through internships and community service. They also undertake a final project or undergraduate thesis, allowing them to conduct independent research. Throughout the programme, elective courses offer flexibility, enabling students to explore specialized topics based on their interests. Judging from the documents presented and the discussions with the programme coordinators, the experts suggest incorporating the following updates to the curriculum in order to ensure students develop a comprehensive understanding of the key subject areas.

In the area of **Statistics**, the experts recommend expanding the coverage to include nested designs (to calculate contributions of process steps to variability), multiple comparisons, factorial designs, and mixture designs. This will provide students with a stronger analytical toolkit to tackle complex data analysis challenges.

Regarding **Food Analysis**, the experts note that the curriculum is currently lacking coverage of important physical properties such as colour, mechanical properties (firmness, elasticity), rheology (viscoelasticity), and water activity. Integrating these topics will give students a more well-rounded skillset for evaluating food products.

On the topic of **Hygienic Design**, the experts suggest incorporating content on factory design, sanitation, water, and waste management. This will equip students with a deeper understanding of the critical considerations around maintaining hygienic production environments.

In the realm of **Quality Control**, the experts advise including material on food quality and safety management systems (e.g. BRC, FSS2200), as well as key quality management tools like control charts, process capability analysis, auditing, test equipment management, and method validation. This will ensure students are prepared to implement robust quality assurance practices.

Lastly, the experts recommend that the curriculum cover **Laboratory Safety and Management**, including modules on safety protocols and laboratory management systems. This will promote safe working habits and proper laboratory governance among students.

Incorporating these suggested enhancements would strengthen the curriculum and help produce graduates who are comprehensively prepared for the demands of the field.

The AEC programme is structured to provide a comprehensive and progressively specialized education in agricultural development and communication:

In the initial phase of the programme, students are introduced to a broad range of foundational subjects. These include general education courses such as Indonesian Philosophy (Pancasila), Civics, and Religious Education, which establish a strong sense of national and ethical values. Simultaneously, students begin their agricultural studies with courses in Introduction to Agricultural Science, Botany, Agricultural Economics, Soil Science, and Rural Sociology. This phase establishes a solid foundation in both societal values and the basic principles of agriculture and rural development. As the programme progresses, the curriculum becomes more focused on agricultural extension and communication. Students delve into specialized subjects such as Agricultural Extension, Extension Methods and Techniques, Community Development, and Information Technology and Multimedia. They also begin to engage with more advanced agricultural topics like Agrotechnology, Agroclimatology, and Farm Management. This phase helps students develop a deeper understanding of agricultural communication principles and their practical applications in rural development.

In the later stages of the programme, the curriculum narrows its focus to advanced areas of agricultural extension and communication. Students study specialized subjects like Social Science Research Methods, Mass Communication, Training Management, and Innovation Communication. There's a strong emphasis on understanding rural dynamics and development, with courses on Rural Development Dynamics, Agricultural Development, and Social Changes. Students also learn about Business Communication and Community Participation Development, preparing them for the practical aspects of agricultural extension work.

In the final phase of the programme, students apply their knowledge in real-world settings through internships and community service. They also undertake a final project or undergraduate thesis, allowing them to conduct independent research. Throughout the programme, a wide range of elective courses offers flexibility, enabling students to explore specialized topics based on their interests, such as Agricultural Journalism, Social Forestry, or Agro-ecotourism.

The experts recognize that the programme effectively aims to bridge the gap between agriculture and the scientific community in Indonesia, promoting science-based farming practices. They appreciate the current curriculum's strong focus on communication and social science aspects, which are crucial for the programme's objectives. The curriculum does address basic agricultural concepts, including elements of crop production, livestock management, and grassland ecology. However, the experts suggest that a slightly stronger emphasis on these foundational agricultural topics could further enhance the programme's effectiveness.

By moderately expanding on these areas, students would develop a more robust knowledge base in agriculture. This enhanced understanding would complement their strong communication skills, allowing them to engage more effectively as informed intermediaries between farmers, scientists, and other agricultural stakeholders. The experts believe this balanced approach would further support the programme's overall goal of bridging scientific knowledge and practical farming in Indonesia.

Both programmes offer a structured progression from foundational knowledge to specialized expertise. The Agricultural Extension and Communication programme focuses on rural development and community empowerment, while the Food Science programme addresses various aspects of the food industry. Each curriculum combines theoretical learning with practical experience, equipping graduates to tackle complex challenges in their respective fields.

Graduates of the AEC programme are prepared to address issues in rural development, agricultural communication, and community empowerment. They develop skills to effectively bridge the gap between scientific advancements and farming practices, fostering sustainable agricultural development.

FST graduates, on the other hand, are equipped to navigate the multifaceted challenges of the food industry. Their expertise spans food processing, safety, quality control, and innovation, enabling them to contribute to advancements in food technology and meet evolving consumer demands.

Both programmes cultivate critical thinking, problem-solving skills, and a deep understanding of their respective domains, preparing graduates to become leaders and innovators in agriculture and food science.

While both programmes provide a strong foundation, the experts have identified two areas for potential enhancement:

- Entrepreneurial skills: The experts recommend strengthening the entrepreneurial components in both curricula. Equipping students with business acumen and innovation skills would prepare them to create their own opportunities in the evolving agricultural and food sectors. This addition could foster a more dynamic and adaptable workforce, capable of driving innovation and economic growth in their respective fields.
- 2. International perspective: Expanding the curriculum to incorporate a broader spectrum of international relevance is suggested. This could include enhancing content on topics like international trade, global food systems, and cross-border agricultural challenges. A more global outlook would better prepare graduates for the increasingly interconnected nature of agriculture and food science, enabling them to address complex issues on a global scale and participate effectively in international markets.

These enhancements would complement the existing strengths of both programmes, further empowering graduates to become versatile professionals capable of navigating both local and global challenges in agriculture, rural development, and the food industry. Since UNS has the goal to become internationally more visible and wants to further internationalise its degree programmes, the experts discuss with the programme coordinators and students if any classes in the programmes are taught in English. The programme coordinators explain that all courses are delivered in Indonesian language, but many of the teaching materials (textbooks, slides) are provided in English. As the experts consider active communication in English particularly important for the students, both for future jobs and to facilitate student mobility, they recommend offering some courses in English to practice this skill.

Overall, the experts gain the impression that the curricula of both programmes are reasonably structured and contribute to the achievement of the intended learning outcomes. In their assessment, graduates are well prepared for entering the labour market and can find adequate jobs in Indonesia.

International Mobility

UNS provides opportunities for students to conduct internships and exchange programmes abroad. The university's International Office supports the students and offers information on their options for student mobility. There are cooperation agreements with many international universities to facilitate exchange and credit transfer. Besides programmes by the Indonesian government, UNS has established its own competitive funding scheme for international mobility that covers travel cost, institutional fees of host universities as well as cost of living. From 2016 to 2021, around 230 students participated in this programme. Moreover, UNS has established a programme for internships in Southeast Asia.

The new policy of the Indonesian government actively supports any activities outside of the university by releasing a regulation on the Merdeka Belajar-Kampus Merdeka (MBKM), which requires the university to promote students who want to take outside their Bachelor's programme for up to three semesters (Minister of Education and Culture Regulation Number 3 Year 2020). UNS recognizes the courses taken by the students outside university based on the equality of the intended learning outcomes. The experts consider this regulation sufficient. However, according to the assessment of the expert group, the academic mobility of the students should be further promoted. The number of students from the two programmes under review who participate in international exchange programmes is still quite low and the stays are mostly quite short, typically up to one month. Furthermore and in contrast to UNS's strategy, there are currently only very few incoming exchange students, which is related to the lack of courses offered in English.

The students confirm during the discussion with the experts that some opportunities for international academic mobility exist. However, they also point out that they wish for better information, more places and better endowed scholarships for long and short-term

stays abroad. The number of available places in the exchange programmes is still limited and there are restrictions due to a lack of sufficient financial support. The lack of financial support is one of the most important factors that hinder students from joining the outgoing programmes.

Based on this feedback, the experts recommend increasing the effort to further internationalise UNS by establishing more international collaborations and exchange programmes both with overseas university and overseas company (with lectures in English for incoming students), providing more information to the students and by offering more and betterendowed scholarships. In summary, the experts appreciate the efforts to foster international mobility and support the university in further pursuing this path.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

According to the self-assessment report, admission of new students to UNS is possible via different modes of entry (national and local modes). The different modes of entry are designed not only to select the top-quality students from high schools, but also to provide opportunities for high school students from all over Indonesia, especially those from rural areas.

There are three different ways by which students can be admitted to a Bachelor's programme at UNS:

1. National Entrance Selection of State Universities (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during the high school (20 % of the students at UNS are admitted through this selection system).

2. Joint Entrance Selection of State Universities (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national selection test is held every year for university candidates. It is a nationwide written test (subjects: mathematics, Bahasa Indonesia, English, physics,

chemistry, biology, economics, history, sociology, and geography). It accounts for 35 % of the admitted students at UNS.

3. Independent Selection (Seleksi Mandiri) students are selected based on a written test (similar to SBMPTN) specifically held by UNS for prospective students that have not been accepted through SNMPTN or SBMPTN (45 % of the students at UNS are admitted through this test).

For each academic year, UNS determines the ratio of students admitted through these three ways. Generally, the number of applications is considerably higher than the number of admitted students. For the academic year 2020/21, the ratio is around 1:28 for FST and 1:10 for AEC.

The tuition fees for the programmes are determined by the Ministry of Finance based on a proposal from UNS. There are different levels for these fees, depending on the parents' income. These range from 475,500 IDR Rp. (around 29 \in) to 10,522,500 IDR. (around 650 \in) per semester. Furthermore, there are various options for scholarships that cover the tuition fees.

The admission website informs potential students in great detail about the requirements and the necessary steps to apply for admission into the programmes. Since the rules are based on decrees by the ministry of education and on the university's written regulations, the experts deem them binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbook
- Survey of student satisfaction related to the workload
- Module descriptions
- Discussions during the audit
- Students handbook

Preliminary assessment and analysis of the experts:

Based on the National Standards for Higher Education of Indonesia (SNPT), both undergraduate programmes under review use a credit point system called SKS. The minimum workload of an undergraduate programme at UNS is 144 SKS, which corresponds to 6.528 academic hours or 216 ECTS (calculating with 30 hours per ECTS). The normal workload of each regular semester is 816 hours, which corresponds to 18 SKS (27 ECTS).

To complete the degree programme in time, Bachelor students need to take on average of 18 SKS per semester. However, the regular schedule usually covers 20-21 SKS per semester, which results in a lower credit load of the last semester (see above). If a student is not satisfied with his/her GPA, she or he can repeat the classes, but this will lead to a prolongation of the study time.

1 SKS of academic load is equivalent to 170 minutes per semester week. For regular courses, this means 50 minutes of face-to-face activity, 60 minutes of structured tasks and 60 minutes of independent learning per semester week. For thesis and internship, 1 SKS equals 170 minutes of the respective activity per semester week.

Students typically need between eight and nine semesters finish their studies. The students confirm that the overall workload is high but manageable. As the lecturers explain, the workload for assignments and individual study in each course is estimated by the lecturers based on their experience and verified by a workload evaluation. The experts consider the workload and the awarded credit points appropriate.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Photos and videos of laboratories
- Self-Assessment Report
- Module descriptions
- Samples of lecturer evaluation by students
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The programmes under review make use of several different educational methods for each course such as interactive lectures, small group discussions, problem-based learning, collaborative learning, laboratory practical work, computer-based assignments, seminars, case-study, literature studies as well as excursions, internships, student community services, and final projects.

During the classes, active and interactive teaching methods (e.g. lectures, discussions, reports, presentations, and group work) are applied. UNS wants to encourage the students to gain knowledge from different scientific areas and wants to introduce them to research

activities. This leads to the transition from a teacher centred to a student centred learning approach. The teaching and learning are supported by a broad range of media, both traditional (books, papers) and online (videos, presentations etc.). In the course of the Covid-19 pandemic, UNS has swiftly switched to online learning with videoconferences, recorded videos and other media. Online learning is conducted by using WhatsApp group chats, Google Classroom, Zoom or Google Meet sessions.

UNS introduced an online-learning platform SPADA (Sistem Pembelajaran Daring Indonesia/ Indonesian Online Learning System) in order to monitor the teaching methodology that is applied and make accessible the various course materials. Therefore, each teacher or professor must upload his or her teaching materials and working procedures on SPADA.

In summary, the experts group judges the teaching methods and instruments to be suitable for supporting the students in achieving the intended learning outcomes.

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

Criterion 1.3

Curriculum Alignment and Foundational Topics

The experts commend UNS for their clarification regarding the alignment of requested subjects/topics with the FST curriculum. However, after reviewing the updated module descriptions, the experts consider that, unlike the other topics mentioned in the report, laboratory management could still be strengthened.

The experts also appreciate UNS's acknowledgment of the importance of foundational agricultural topics in the AEC programme. The experts are satisfied with UNS's commitment to providing a robust scientific agricultural foundation, preparing students for agricultural extension and communication tasks. They note UNS's promise to continually monitor the adequacy of foundational content in meeting the overall needs of the study programme.

Entrepreneurial Skills Development

While acknowledging UNS's existing courses aimed at fostering entrepreneurial thinking and mindset, the experts suggest that these efforts may not have fully manifested their intended outcomes yet. They recommend exploring additional approaches to enhance students' entrepreneurial abilities. Nevertheless, the experts express satisfaction with UNS's efforts and appreciate the comprehensive list of courses designed to develop entrepreneurial skills.

International Perspective and Language Skills

The experts positively note UNS's enthusiasm for developing their curricula to incorporate a more international perspective. They also commend the institution's efforts to increase the use of English language at the course level and to enhance students' overall international exposure. The experts anticipate positive outcomes from these initiatives and look forward to the implementation of these changes in the future.

The experts consider criterion 1 to be **fulfilled**.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, concept and organisation

Evidence:

- Self-Assessment Report
- Module descriptions
- Examination regulations
- Curriculum handbooks
- Samples of student's work (projects, exams and thesis)
- Statistical data
- Websites
- Academic Calendar

Preliminary assessment and analysis of the experts:

Each course has to determine objectives, which support the achievement of the Programme Learning Outcomes of the respective programme. Accordingly, each course must assess whether all defined learning outcomes stated in the module description have been achieved.

According to the self-assessment report, quizzes, tests, practical performances, assignments, small projects, reports and presentations are employed to assess the students' achievement of the learning outcomes. At the first meeting of a course, the students are informed about what exactly is required to pass the module. The form and length of each exam is mentioned in the course descriptions that are available to the students via UNS' homepage. It is common to hold small quizzes every two or three weeks, but there are generally no unscheduled tests. The students are informed about mid-term and final exams via the Academic Calendar. The final grade of each module is calculated based on the score of these individual kinds of assessment. The exact formula is given in the module handbook. UNS uses a grading system with the grades A, A-, B+, B, C+, C, D and E, where a C (equivalent to a Grade Point of 2) is necessary to pass a module.

Based on the academic regulation to be eligible to take final exam, students must attend at least 75% of the total course sessions. On the other hand, students must attend all lab work activities in order to get a practice examination permit. Students who have not yet reached the minimum achievement criteria have to join the remedial programme which is an additional programme that should help them improve their unsatisfactory results. The lecturers will provide several alternatives such as a second trial of exams, additional assignments, remedial learning or a peer tutor to accommodate this programme. In some instances, lectures may not allocate specific times for remedy and provide direct feedback on students' work to improve the assignment instead. The remedial program allows students to fix their shortcomings and finish the course on time with satisfactory results and is meant to shorten the study period.

The experts discuss with the students how many and what kind of exams they have to take each semester as both study programmes are divided into a large number of small modules. They learn that for each course there is one mid-term exam and one final exam in every semester. Usually, there are additional practical assignments or quizzes. The final grade is the sum of the sub exams. The students appreciate that there are several short exams instead of one big exam as this forces them to continuously study during the entire semester and not having to solely work for one final exam at the end of the semester. The students also confirm that they are well informed about the examination schedule, the examination form and the rules for grading.

Every student is required to do a final thesis in the fourth year of studies. Prior to the actual research work, the students are required to write a research proposal and present it in a seminar attended by lecturers and other students who form a research group. The research proposal has to be accepted by the Dean and the supervisor committee who will then appoint the research supervisors. Usually, there are 2 to 3 research supervisors for each student. One will act as the principal supervisor and the others act as co-supervisors. In case the student writes her or his thesis in collaboration with the industry, she or he is also assigned a supervisor from the industry. After completing the work on the Bachelor's thesis, the student has to present and defend the results in front of teachers and fellow students.

During the audit, the experts discovered an additional regulation concerning the bachelor's thesis. Currently, students must go through an application process to write their thesis in English. Since there are no restrictions from the staff on supervising a thesis in English, the experts do not understand why UNS imposes this bureaucratic hurdle on students. This is

particularly puzzling given the university's overall goal of internationalization. Therefore, the experts recommend removing this obstacle and, on the contrary, encouraging students to write their thesis in English.

Overall, the experts are satisfied with the regulation of exams in the degree programmes. They also inspect a sample of examination papers and Bachelor's theses and are satisfied with their general quality.

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

The experts acknowledge the national regulation mandating theses to be written in the Indonesian language. However, they commend UNS for its proactive approach in encouraging and facilitating students to compose their theses in English, despite this legislative constraint. In light of UNS's efforts to promote bilingual academic writing, the experts have decided to retract their previous recommendation regarding the language of thesis composition.

This development demonstrates UNS's commitment to fostering international academic standards while navigating national educational policies. The experts recognize the institution's initiative in preparing students for global academic and professional environments through this balanced approach to thesis writing.

The experts consider criterion 2 to be fulfilled.

3. Resources

Criterion 3.1 Staff and Staff Development

Evidence:

- Self-Assessment Report
- Staff Handbooks
- Samples of lecturer evaluation by students
- Study plans of the degree programmes
- Module descriptions
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The staff situation at the FST and AEC study programmes governed by various regulations, including the National Standards of Higher Education and UNS Rector's regulations. The qualifications and workload of teaching and administrative staff are strictly regulated. Lecturers in Bachelor's Degree Programmes must have at least a master's degree, and some are certified with qualifications at level 8 of the Indonesian Qualifications Framework.

- Teaching Staff:
 - FST has 25 lecturers (14 male, 11 female) with 68% holding Master's degrees and 32% holding Doctorate degrees.
 - AEC has 16 lecturers (7 male, 9 female) with 68.75% holding Doctorate degrees and 31.25% holding Master's degrees.
 - Lecturers are distributed across various laboratories based on their competencies and are involved in teaching, research, and community service.
- Administrative Staff:
 - FST has 1 administration staff and 3 laboratory assistants.
 - AEC has 1 administration staff.
 - Administrative staff must meet specific qualification standards and may require competency certificates.

• Recruitment and Workload:

- Recruitment follows government regulations, considering factors such as lecturer-student ratios and projected program development.
- The average workload for FST lecturers is 15.9 credits per semester (about 45 working hours per week), while for AEC lecturers it is 20.7 credits per semester (about 58 working hours per week).

The university ensures that the number and quality of lecturers are maintained through periodic monitoring and evaluation. The ratio of lecturers to students in FST is 1:17.7, which meets the standard, whereas in AEC it is 1:27, which is above the ideal ratio. Efforts are being made to improve this ratio by 2026. Student satisfaction with academic services is high, with average satisfaction scores of 3.65 and 3.5 out of 4 for FST and AEC, respectively.

While the experts are generally satisfied with the staffing situation and qualifications, and are confident that the composition, academic orientation and qualifications of the teaching staff are appropriate for the successful implementation and sustainability of the degree

programme, they have identified some areas of concern, particularly in the AEC programme.

The experts note that the AEC programme currently does not meet national regulations regarding staff-to-student ratios. This situation requires careful monitoring and attention. To address this issue and alleviate the excessive workload currently placed on existing staff members, the experts strongly recommend recruiting additional suitable staff for the AEC programme.

By increasing the number of qualified staff members, the university can ensure compliance with national standards, improve the quality of education, and create a more balanced and sustainable work environment for faculty. This recommendation aims to enhance the overall effectiveness of the programme and maintain high academic

Staff Development

UNS provides numerous opportunities for staff development, including financial support and administrative assistance for further studies, competency certification, seminars, and training. The development programs are designed to enhance the qualifications and competencies of both teaching and administrative staff.

- Further Studies:
 - Lecturers with Master's degrees are encouraged and supported to pursue Doctorate programs. Currently, five FST lecturers and three AEC lecturers are enrolled in Doctorate programs both nationally and internationally.
 - The university offers scholarships for further studies, and the study schedules are arranged to not interfere with student learning.

• Professional Development:

- Lecturers are encouraged to participate in professional organizations and attend various scientific meetings, training, and workshops.
- The university facilitates the submission of research and community service proposals for various grants.
- Lecturers can obtain professional educator certificates through the Pekerti-AA programme (Training of Improving Skills in Instructional Techniques), which supports teaching and learning processes.

• Training and Certification:

• Staff can participate in training for writing scientific articles, intellectual property applications, and other relevant skills.

- UNS Language Centre offers programs to improve English and other foreign language skills, which are essential for further studies and international collaborations.
- Lecturers are also given opportunities for internships and training at relevant institutions to enhance their professional skills.
- Internal and External Collaboration:
 - The university collaborates with various national and international institutions for guest lectures, research, and community service activities.
 - Junior staff receive mentorship from senior staff, including involvement in research and community service teams.

UNS is committed to continuous staff development through various programmes and initiatives, ensuring that staff members are well-equipped to contribute to the academic and research excellence of the university.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UNS, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars.

While there are sufficient opportunities for teachers to develop their skills, the experts recommend that in order to pursue UNS's path to internationalization, lecturers should receive better support in the grant writing process. This includes assistance with the procedural aspects of budgeting and related tasks, which are crucial for acquiring international funds. Enhanced support in these areas will not only facilitate the acquisition of international grants but also contribute to the overall development and global competitiveness of the university's academic staff.

In summary, the auditors confirm that UNS offers sufficient support mechanisms and opportunities for members of the teaching staff who wish to further develop their professional and teaching skills.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report
- Curriculum handbooks
- Students handbooks

• Discussions during the audit

Preliminary assessment and analysis of the experts:

In order to support students in completing their studies on time with good achievements, the university and the faculty provide academic and personal support and assistance through various means. The offers can be divided into two types: academic support and non-academic support. Academic advice includes the academic advisors, the Counselling Guidance Centre, the International Office, the programme coordinators, the Dean and the supervisors for the Bachelor's thesis. Non-academic supports comprises the Medical Centre, the Sports Centre, the Disability Study Centre, the Language Centre, the Career Development Centre, the Central Library, computer laboratories, Student Creativity Program and student dormitories.

The main contact person for every student is their academic advisor, which is assigned to them in their first semester. An academic advisor shall help them develop an adequate schedule for their studies, choose electives according to their skills and interests and support them in case of academic and non-academic problems. Each student has the opportunity to meet their academic advisor, who is also responsible for monitoring their study progress, on a regular basis. Furthermore, there are supervisors for the thesis, the fieldwork practice or teaching internship, and the community service, who give advice on specific issues related to these aspects. In UNS, this mentoring process is supported by the presence of the academic administration information system (SIAKAD) that helps to monitor the academic progress and to approve semester plans as well as the final undergraduate thesis.

The Disability study Centre helps and guides students who have individual problems, such as anxiety, depression or other personal or psychological issues. The Career Development Centre offers scholarships, entrepreneurship programmes, student creativity programmes and other similar activities. There are many scholarships offered to students, (e.g. from private companies, the government or other foundations). This includes scholarship for students from low-income families and for those with high academic achievements. New students can attend classes to develop their effective learning and soft skills.

In addition, every student who enrols for the Bachelor's thesis course will be assigned two to three thesis supervisors. The role of the thesis supervisors is to help students to complete their thesis research; they also monitor the progress of the thesis in order to ensure the completion of the thesis in the intended amount of time.

The students confirm towards the experts that they are supervised in the research group during their work on the Bachelor's thesis. There are regular meetings where the students present their results and receive feedback from the other members.

All students at UNS have access to the online-learning platform SPADA. By using SPADA, lecturers can upload their syllabus and learning materials or modules as well as assignment for students. Through SPADA, students can also interact with other students and lecturers.

The experts notice the good and trustful relationship between the students and the teaching staff; there are enough resources available to provide individual assistance, advice and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well informed about the services available to them.

While student support at UNS is already strong, with a range of resources available to assist students in their academic and career paths, the experts have identified areas for further improvement based on student feedback. They recommend implementing faculty-specific job fairs to boost student employability and strengthen industry connections. These targeted events would align students with employers in their field, enhancing job placement rates and providing valuable industry insights. For employers, this approach streamlines recruitment and fosters long-term partnerships with UNS. The initiative not only supports graduate success and curriculum development but also aligns with UNS's mission to produce high-quality, industry-ready graduates, contributing to regional economic growth.

Overall, the experts judge the extensive support system to be one of the strong points of UNS.

Criterion 3.3 Funds and equipment

Evidence:

- List of laboratories and equipment
- Photos and videos of the facilities
- Partnership agreements
- Recapitulation of budget
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The university and the faculty are mainly funded by the Indonesian government, through the tuition fees and through grants for research projects. The figures presented by the university show that the faculty's income is stable and the funding of the degree programmes is secured. The academic staff emphasise that from their point of view, both undergraduate programmes under review receive sufficient funding for teaching and learning activities.

Students and staff can use UNS's central library, which is open from Monday to Saturday from 8 am to 9 pm. Besides regular books and journals, it provides many e-books (for example through SpringerLink, Gale, Emerald and ProQuest) as well as access to electronic journals (through EBSCO, ProQuest, Cambridge, IGI Global, Science Direct, SCOPUS, Emerald, National Library of Indonesia).

During the audit, the experts toured laboratories with state-of-the art computer equipment, studios for producing podcasts and films, facilities to foster co-working an creative processes for the AEC.

For the FST programme, the laboratories presented were a mix of basic laboratories and equipment that was allocated to the FST programme as well as other programmes. Additionally, the FST programme presented more advanced equipment for chocolate production that has been obtained through a collaboration with Ghent University. The laboratories, maintained and supported by specialized staff, are available for use by research staff and graduate as well as undergraduate students.

The experts appreciate that students can closely engage with research projects since the laboratories serve both teaching and research purposes. However, they acknowledge that this dual use imposes certain logistical constraints on both activities. Research and teaching cannot flourish to their full potential under the current setup.

The experts recommend adding a texture analyser, colour measurement, and viscosimeter for physical properties analysis to further strengthen the laboratory facilities for the FST programme.

If these teaching and research activities could take place in separate laboratories, both could thrive more effectively.

While the realization of this separation would require additional financial resources, the experts believe that the overall capacity of teaching equipment for the FST needs an upgrade regardless. Therefore, the experts recommend separating teaching and research environments and expanding the availability of teaching equipment for FST. They also encourage the UNS to seek international collaborations and explore new funding avenues to support this initiative.

Yet the experts are confident that the teaching and office facilities, libraries and computer labs are adequate for all students and staff. The experts can also assess that safety measures, such as safety policies and protocols, fire extinguishers and emergency showers,

are available and in line with international guidelines. Students are also required to undergo safety training in order to work in the laboratories.

However, the visit also revealed that not all buildings and classrooms are easily accessible for students with disabilities. While UNS addresses this issue by allocating suitable buildings to groups that include students with disabilities, the university is aware of the situation and is actively working on improvements. The experts appreciate UNS's proactive approach but recommend further enhancing the infrastructure to accommodate students with disabilities. This includes implementing necessary modifications and improvements to existing facilities to ensure full accessibility, thereby creating an inclusive environment that supports the academic and social needs of all students.

In summary, the experts confirm that current funding allows standards to be maintained and additional instrumentation to be purchased if required, that UNS University generally has sufficient workspace and laboratories, and that all laboratories are equipped with modern and sophisticated instrumentation.

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

Criterion 3.1

Faculty Recruitment and Student-to-Faculty Ratio

The experts commend UNS for their ongoing efforts to improve the student-to-faculty ratio in the AEC programme. They express optimism regarding UNS's recruitment plan and its potential for successful implementation.

While acknowledging UNS's current investments in publication support, including financial resources, writing guidance, and proofreading services, the reviewers emphasize the need for a more comprehensive support structure. Their recommendation encompasses:

Teaching lecturers how to obtain research grants

Providing guidance on proposal writing

Offering assistance in budgeting and related tasks

In the experts' view, implementing a structured support system would alleviate time constraints on individual lecturers while elevating the institution's research profile internationally.

Criterion 3.2

UNS's current job fair offerings have met with approval from the experts. They commend the institution's commitment to further enhancing these services, recognizing the value these improvements bring to students' career prospects.

Criterion 3.3

Learning that UNS already possesses the necessary equipment to support their academic programmes effectively has pleased the experts. This readiness in infrastructure contributes positively to their overall assessment.

Recognition by UNS of the importance of distinguishing between teaching and learning approaches has impressed the experts. They look forward to seeing this concept implemented in the future, while acknowledging the significant time and resources such restructuring requires.

In conclusion, the experts' feedback underscores UNS's proactive approach to addressing various aspects of academic quality and student support. Existing efforts have been commended, yet constructive suggestions for further enhancements have been provided, particularly in research support and teaching methodologies. The experts appreciate UNS's evident commitment to continuous improvement across multiple facets of its academic offerings.

The experts consider criterion 3 to be fulfilled.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Module descriptions
- Websites

Preliminary assessment and analysis of the experts:

The students, as well as all other stakeholders, have access to the module descriptions via UNS's homepage. The more detailed syllabus is handed out to the students by the lecturers at the beginning of each semester. The syllabus includes a practical guideline and detailed description of the practical parts of each course.

After reviewing the module descriptions, the experts confirmed that they contain all the essential details, including information on the module coordinators, teaching methods,

workload, credit points awarded, intended learning outcomes, content coverage, applicability, admission and examination requirements, as well as assessment methods and a comprehensive explanation of how the final grade is calculated.

However, the experts express dissatisfaction with the current module descriptions for several reasons. Firstly, the descriptions often do not align with the titles of the courses, leading to confusion about the course content. Additionally, some courses lack detailed content or have only brief descriptions, making it difficult for students to understand what will be covered. Essential content that should be included is often missing. Furthermore, the literature cited in the module descriptions is frequently outdated, failing to provide students with the most current and relevant information in the field. Therefore, the experts ask UNS to revise the module handbooks for both programmes accordingly.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Sample Transcript of Records
- Sample Diploma certificates
- Sample Diploma Supplements

Preliminary assessment and analysis of the experts:

The experts confirm that FST and AEC students receive a diploma and a diploma supplement upon graduation. The diploma consists of a diploma certificate and a transcript of records. The transcript of records lists all the courses taken by the graduate, the credits earned, the grades and the cumulative GPA. The Diploma Supplement contains information about the degree programme, including soft skills acquired and awards (extracurricular and co-curricular activities). However, it does not currently provide information on the grade distribution within the student cohort and the ECTS credits earned, which is necessary for potential employers to be able to properly assess a student's performance. Therefore, UNS has to add this statistical information.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Reports
- Curriculum handbooks for all degree programmes

- Academic Guidelines
- Examination regulations
- All relevant regulations as published on the university's website

Preliminary assessment and analysis of the experts:

The auditors confirm that the rights and duties of both UNS and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all relevant stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester.

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

Criterion 4.1

The experts are satisfied with the new versions of the module handbooks.

Criterion 4.2

The experts acknowledge that UNS will integrate the grade distribution within the student cohort for subsequent cohorts.

The experts consider criterion 4 to be **fulfilled**.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts learn that UNS has implemented a comprehensive quality management system that spans all levels of the institution, from university-wide policies to individual study programs. The system is overseen by the Quality Assurance System Development Centre (PPSMM), which operates under the umbrella of the Educational Quality Assurance and Development Institute (LPPMP - Lembaga Pengembangan dan Penjaminan Mutu Pendidikan). This structure ensures a cohesive approach to quality assurance across the university.

The internal quality assurance system at UNS is rooted in national laws and regulations, following a cyclical process of establishing, implementing, evaluating, controlling, and improving standards. This process applies to both academic areas - including education, research, and community service - and non-academic domains. The effectiveness of this system is assessed through annual Internal Quality Audits (AMI) at both study programme and faculty levels, with results informing quality control measures through Management Review Meetings (RTM).

Complementing the internal system, UNS also undergoes external quality assurance evaluations conducted by the National Accreditation Board of Higher Education (BAN-PT) every five years. These assessments focus on outcome-based accreditation, competitiveness, and international outlook. It's worth noting that both the FST and AEC study programmes have achieved "Very Good" accreditation status. In line with its ambition to establish itself as a "world-class university", UNS actively encourages its study programmes to pursue international accreditation

In 2020, UNS introduced an Outcome-Based Education Quality Assurance (OBE-QA) approach. This system incorporates input-based learning plans, course portfolios, and curriculum design, with a strong emphasis on lifelong learning through student exchange and internship programs.

The university maintains a culture of continuous improvement through regular evaluations of academic services, lecturer performance, and learning effectiveness. Feedback is systematically collected from students, alumni, and industry partners to inform these improvements. Annual Key Performance Indicators (KPIs) are set and monitored to ensure alignment with both national and university standards.

This comprehensive approach to quality management demonstrates UNS's commitment to maintaining high standards in education, research, and community service, while also striving for international recognition and continuous improvement.

During the audit, the experts discuss the quality management system at USN with the rectorate representatives, programme coordinators and the students. They concluded that UNS has established a well-organised system of quality assurance that involves all relevant stakeholders. All programmes and courses are constantly under review for further development. Students learning outcomes throughout the whole student life cycle are monitored through various surveys and the results are used to improve the quality of the degree programmes. In this regard, it is particularly noteworthy that the faculty seems to have succeeded in establishing a remarkably responsive feedback culture between teachers and students.

However, during discussions the experts learned that this feedback culture at UNS is partly informal and relies on individual face-to-face communication. They noted, at the same time, the lack of a systematic process to ensure that all students are consistently informed of course evaluation results and subsequent improvement actions. Some students reported inconsistent communication of evaluation results.

The experts emphasise the importance of establishing a formal, transparent process for disseminating evaluation results and follow-up actions, if such a system is not already in place. This recommendation applies to all quality assurance processes involving both external and internal stakeholders.

To enhance transparency and engagement, UNS needs to implement a structured mechanism for consistently sharing course evaluation results with all students and for communicating actions taken in response to feedback. It is essential that students are systematically informed of the results of their input and the changes that have been made as a result. While this is a necessity for students, it would be highly beneficial to extend this practice to other stakeholders such as faculty, staff and external partners. This approach would promote a more inclusive quality assurance culture and encourage wider participation in improvement efforts.

This formalised approach would complement existing informal channels and create a more robust and comprehensive quality assurance system at UNS, ensuring that all voices are heard, and all stakeholders are kept informed of outcomes and actions.

The experts learned from UNS's partners in public institutions and private companies that regular meetings are held at the faculty level to discuss employer needs and potential curriculum changes. These discussions have led to curriculum adjustments based on employer feedback. While the feedback from industry representatives during the audit was generally positive, the experts noted the absence of representatives from larger global companies. The experts suggest that UNS could strengthen its ties to the international arena, which could yield several benefits. Firstly, it would enable UNS to stay informed about global trends and incorporate this insight into curriculum development. Secondly, it could open up funding opportunities to enhance their facilities with more modern equipment.

In summary, the expert group affirms that the quality management system is effective in identifying weaknesses and enhancing degree programs, with all stakeholders actively involved in the process. However, they emphasize the need for UNS to close the feedback

loop with students to further improve responsiveness and encourage greater participation in the process.

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

The experts appreciate the clarification provided by UNS regarding their course evaluation process, particularly noting that students have direct access to their feedback. UNS has implemented a structured mechanism that not only gathers and analyzes student assessments but also ensures that these results are readily available to the students themselves.

Each semester, students can fill out questionnaires before registering for their courses, and the results of these evaluations are shared through various platforms, including program websites and social media channels. This transparency allows students to access and review the feedback on the teaching and learning process directly.

Moreover, the evaluation results are discussed in regular meetings at the end of each semester, where the Study Program focuses on addressing any middle to low scores. This proactive approach not only emphasizes the importance of student input but also reinforces UNS's commitment to enhancing the quality of education based on the feedback provided. By making this information accessible, UNS empowers students to engage actively in their educational experience.

The experts consider criterion 5 to be **fulfilled**.

D Additional Documents

No additional documents needed.

E Comment of the Higher Education Institution (02.09.2024)

The institution submitted the following statement:

Comment of the UNS (2.09.2024)

We sincerely thank the ASIIN experts for taking the time to thoroughly review our report. UNS is deeply appreciative of the thoughtful feedback, valuable insights, and constructive suggestions provided by expert team. We are grateful for the recognition of our efforts and welcome the recommendations for further enhancement. We are committed to acting on these comments and continuing to make improvements to ensure that our programs align with the highest international standards.

1.3 Curriculum

Food Science and Technology (FST)

The FST SP greatly appreciates the professionals' guidance on the curriculum, including the recommendation to include multiple updates to guarantee that students thoroughly understand the important subject areas. The FST SP aims to offer the following responses based on expert notes and suggestions on **page 14**.

- 1. In the subject area of **Statistics**, the topics of multiple comparisons, factorial designs, mixture designs, and nested design have already been covered in <u>experimental design and</u> research methods subject
- 2. Regarding **Food Analysis**, the topics of physical properties such as color, mechanical properties (firmness, elasticity), rheology (viscoelasticity), texture, and water activity coverage in the subject of <u>Material Science</u>
- 3. Content on factory design, sanitation, water, and waste management, related to the **Hygienic Design**

already covered in the Sanitation, water, and waste management course.

- 4. In the realm of Quality Control, the material on food quality and safety management systems have been covered in the subject of <u>quality control</u> and <u>food safety</u>, respectively. Key quality management tools like control charts, process capability analysis, auditing, test equipment management, and method validation have been included in the course of quality control.
- 5. The experts advise that laboratory safety and management, including modules on safety procedures and laboratory management systems, be covered in the FST program's curriculum. The practical courses include a section on laboratory <u>safety procedures</u>, <u>such as</u> in <u>basic chemistry practicum</u>, and <u>food microbiology analysis</u>. The laboratory safety protocols are given at the start of each practicum course to guarantee that students operate safely.

Agricultural Extension and Communication (AEP)

Regarding the comments on **page 15**, we would like to explain that the Agricultural Extension and Communication program has already integrated foundational agricultural topics into the curriculum, amounting to <u>46 credits</u>. These courses cover essential elements such as crop production, science of farming, and grassland ecology, which align with the objectives of promoting science-based farming practices. While we acknowledge that the curriculum primarily focuses on communication and social science aspects, which are vital for bridging the gap between agriculture and the scientific community, we would like to highlight that the content area for students' research in AEC SP is directly related to agriculture. This is evident from the titles of undergraduate thesis completed by AEC SP students, which can be viewed <u>here</u>. However, we agree with Experts that a slightly stronger emphasis on these foundational agricultural topics to strengthen the foundation of agricultural subjects is highly feasible byelaborating on the inclusion of such topics as mandatory courses to keep up with advancements in science, technology, and societal

developments.

Both FST and AEP

We acknowledge the importance of strengthening entrepreneurial components within our programs (page 16). Currently, our curricula include elements that encourage innovation and entrepreneurship, such as courses on agricultural trade, business communication (AEC SP), and <u>entrepreneurship</u>, agribusiness management, food product development (FST SP). However, we recognize the need to expand these offerings to better equip students with the business acumen and innovation skills required to navigate the evolving agricultural and food sectors. We will explore the possibility of integrating more comprehensive modules on entrepreneurship, including practical experiences, case studies, and collaborations with industry stakeholders, to foster a dynamic and adaptable workforce capable of driving innovation and economic growth.

We also fully agree with experts' recommendation to incorporate a broader international perspective into our curricula (**page 16**). Currently, we have addressed some issues of cross-border agricultural challenges, international markets, and global food security in our courses such as <u>introduction to precision agriculture</u>, <u>sustainable agriculture</u> <u>systems</u>, <u>introduction to agricultural technology</u>, <u>food safety</u>, <u>food regulation</u>, and <u>agribusiness management</u>. We will continue working towards enhancing our curriculum to cover more in-depth topics related to those issues. Additionally, we will continuously increase the number of international collaborative projects, guest lectures from international experts, and exchange programs to expose our students to a wider range of global agricultural practices and issues.

We understand the importance of active communication in English for our students' future careers and to promote student mobility (**page 17**). While our courses are currently delivered in Indonesia, we do use English teaching materials, such as textbooks, scientific journals, and slides. Moving forward, we will explore opportunities to introduce selected courses in English. This could include pilot programs, elective courses, or even full modules designed to help students practice their English language skills in a professional and academic context, thereby better preparing them for participation in international markets and facilitating their mobility across borders.

We are committed to further advancing the internationalization of our programs and institutions and we agree with experts' recommendation to establish more international collaborations and exchange programs which is essential for enhancing our global presence. Currently, we already have several partnerships with overseas universities and organizations, and some students have joined the exchange programs by staying overseas for several months (up to 6 months depending on the programs). We aim to develop more new agreements with both academic institutions and companies worldwide to provide diverse opportunities for our students and faculty members.

We acknowledge the need to provide students with more information about opportunities for international exposure and mobility (**page 17**). To address this, we will enhance our communication strategies by developing dedicated online resources and increasing the visibility of global programs and scholarships available to our students. Furthermore, we recognize the importance of offering more and better-endowed scholarships to support our students' participation in international programs. We will more actively seek additional funding opportunities and partnerships to increase the availability and scope of these scholarships, ensuring that more students can benefit from international learning experiences.

Criterion 2 Exams: System, concept, and organization

We appreciate the feedback provided by the experts regarding the process of writing a bachelor's thesis in English at UNS (**page 23**). We would like to clarify that the regulation related to writing a thesis in Indonesia is sourced from presidential regulation <u>no. 63</u>, the year 2019, article <u>31</u> clause <u>1-2</u>. While UNShas rector regulations regarding students' English proficiency, it does not specifically regulate the writing of a thesis in English (<u>rector regulation no.</u> <u>31</u>, the year 2020, articles <u>11</u> and <u>27</u>). Hence, the FST and AEP study programs permit students to write their thesis in English and report them to the undergraduate thesis committee to receive the necessary support for maintaining the quality of their English thesis (UNS has an English Language Center dedicated to assisting students/lectur-ers/staffs in improving their English skills, including writing in English). Further, for students under joint supervision with overseas universities, writing their thesis in English is mandatory as can be seen <u>here</u>, reflecting our commitment to international collaboration and academic excellence. We recognize the importance of encouraging our students to engage in international academic practices, and we will continuously review the process to ensure it supports our goal of internationalization. We will consider ways to further streamline the process and actively encourage students to write their thesis in English.

Criterion 3.1 Staff and Staff Development

To meet the ideal ratio conditions between lecturers and students (page 25), the AEC SP has planned to hold a

lecturer staff recruitment program for over three years (**Table 1**.). The recruitment process is conducted by the human resource development unit of UNS while the criteria of prospective candidates are provided by AEC SP.

2026)		
	Number of recruited lecturers	Total number of lecturers
Year 2024	2 (have been done)	18
Year 2025	2	20
Year 2026	2	22

Table 1. AEC SP lecturer staff recruitment plan per year (2024

To accelerate internationalization (page 26), UNS has provided services such as grants and workshops for writing publications in reputable international journals by universities through the Institute of Research and Community Service (LPPM) and by other units within UNS, such as faculties or study programs. One of the strategies for increasing the lecturers' ability to achieve international research funding is supported by the International Publication Implementation Unit (UPPI) through International Competitive Research Achievement Workshop activities (workshop invitation). The faculty also urges LPPM to conduct training on how to win international research grants more frequently.

Criterion 3.2 Student Support and Student Services

Facilitated by the University through the Career Development Center (CDC), information on industry job opportunities is offered directly to alumni via the website <u>https://cdc.uns.ac.id/</u>. The student employability and industry connections are in the form of (1) companies can offer job vacancies and inform the selection process using CDC website as can be seen in this <u>link</u>, (2) job fairs are held twice a year, and (3) campus hiring, where companies come to UNS to carry out the recruitment process facilitated by CDC (average 4-6 per month). Apart from that, we would like to add some information that the CDC at the faculty level has already initiated several efforts to connect students with potential employers. We have already held campus hiring or on-campus recruitment. Many companies have conducted walk-in job interviews in our faculty such as PT. Sinarmas, PT. Avanta, PT. Mayora, and Taisho Kaneyama Farm Co. Ltd. The interviews are facilitated both online and offline, and information on job vacancies and interview schedules is actively shared through our faculty channels where some can be seen <u>here</u>. However, we fully agree with the experts' recommendations (**page 28**) and will organize more faculty-specific job fairs. We believe that these targeted events will provide additional opportunities for our students to engage directly with employers in their respective fields, thereby enhancing jobplacement rates and fostering valuable industry relationships. We appreciate the experts' feedback and are committed to continuously improving our efforts to support our students' academic and career success

Criterion 3.3 Funds and equipment

The experts recommend adding a texture analyzer, color measurement, and viscometer for physical properties analysis to further strengthen the laboratory facilities for the FST program (**page 29**). Hence, the FST study program had equipped its laboratories with several instruments required for physical properties analysis including a digital colorimeter (Konica Minolta Chroma Meter CR-400), brookfield viscometer (Ametek DV-1 Viscometer) and texture analyzer (AND Force Tester MCT-2150). Pictures of those instruments and their specifications can be seen <u>here</u>. Furthermore, we have been actively pursuing international collaborations to enhance our laboratory facilities. In addition to our ongoing partnership with Ghent University, we have recently established collaborations with the University of Queensland and Universiti Putra Malaysia. These partnerships represent promising avenues for acquiring additional laboratory tools and equipment. We are committed to strengthening these collaborations and exploring additional opportunities to further improve our facilities, as recommended by the experts.

Regarding the suggestion to separate teaching and research laboratories (**page 29**), the FST study program is already planning for this separation with support from the university. We understand the importance of this approach to optimize both teaching and research activities and are committed to making this a reality.

Criterion 4.1 Module descriptions

We highly appreciate the experts' feedback on the module handbooks for both programs (page 31). As a result, we have carefully re-checked and revised the module handbooks of <u>FST SP</u> and <u>AEC SP</u>. These module handbooks can also be accessed through our website (<u>FST</u> and <u>AEP</u>).

Additionally, more detailed content in the handbook module has been updated along with the literature used to provide the latest and relevant information in the field to students (relevant scientific articles (international and

national scientific publications) are also used in the learning process). These revisions are in line with the current <u>FST</u> and <u>AEC</u> RPS (*Rencana Pembelajaran Semester*: Indonesian version of module handbooks) that are currently being accessed by students in the academic administration information system or SIAKAD which cover more detailed information and description regarding the courses.

Criterion 4.2 Diploma and Diploma Supplement

Thank you for your valuable feedback regarding the diploma and diploma supplement for our graduates (page 31). We would like to highlight that, in addition to the diploma and transcript of records, Universitas Sebelas Maret (UNS) issues Diploma Supplement or Surat Keterangan Pendamping Ijazah (SKPI) to provide a more comprehensive overview of a graduate's competencies. The Diploma Supplement is a supplementary document that outlines a graduate's skills, knowledge, and attitudes in a manner more easily understood by employers, both domestically and internationally, than the academic transcript alone. It also confirms that the educational institution operates within a nationally recognized qualification framework, which can be aligned with the qualification frameworks of institutions abroad (The UNS Diploma Supplement Guideline can be seen here). We would also like to note that the procedures for grade distribution and credits (SKS) allocation are already in place at UNS and can be accessed by students and academic advisors through SIAKAD. The sample of statistical information showing the progress of competencies achieved by students during study period based on credits taken can be seen on this link. However, we acknowledge that this information has not yet been included in the current version of the Diploma Supplement as it only shows scores achieved for each outcome. Hence, we will improve it by including the credits (and its ECTS conversion) related to the competencies. It has been discussed and approved by the UNS Vice Rector of Academic and Research. Based on experts' feedback, we will ensure that these details are incorporated into the next Diploma Supplement to provide potential employers with the necessary information to properly assess our graduates' performance. We appreciate experts' suggestions and are committed to making these improvements to enhance the clarity and utility of our graduates' qualifications.

Criterion 5 Quality management: quality assessment and development

UNS has a structured mechanism to utilize the questionnaire for consistently sharing course evaluation results with all stakeholders. Students are given the opportunity to assess lectures. Every semester, students can assess the results of the teaching and learning process. Assessment is carried out to improve the quality of learning, such as administrative management, course lectures, learning evaluation, and student satisfaction.

Firstly, students are asked to fill out a questionnaire before registering for the course selection sheet through the academic information system website (<u>https://siakad.uns.ac.id</u>). The results of questionnaires are analyzed, and then are displayed through the study program **Website** <u>AEC SP</u>, <u>FST SP</u> and social media e.g. **Instagram:** <u>AEC SP</u>,

FST SP.

The results are evaluated in the regular meeting at the end of the semester. The Study Program will concern the middle – low score. The meeting will formulate strategies to continuously improve lecturer performance based on the survey results (**Figure 1**)



Figure1. Course feedback cycle

F Summary: Expert recommendations (13.09.2024)

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

Degree Programme	ASIIN Seal	Maximum du- ration of ac- creditation	Subject-spe- cific label	Maximum dura- tion of accredi- tation
Ba Food Science and Technology	Without Re- quirements	30.09.2030	EQAS-FOOD	-30.09.2030
Ba Agricultural Exten- sion and Communica- tion	Without Re- quirements	30.09.2030	-	-

Recommendations

For all programmes

- E 1. (ASIIN 1.3) It is recommended to incorporate a broader spectrum of international relevance into the curriculum, such as enhancing content on topics like international trade.
- E 2. (ASIIN 1.3) It is recommended to strengthen the university's internationalization efforts, for instance by establishing more international collaborations and providing more information, support and funding opportunities for student mobility and by teaching more courses in English.
- E 3. (ASIIN 3.1) It is recommended to support lecturers more in grant writing processes and provide assistance with budgeting and related tasks.
- E 4. (ASIIN 3.3) It is recommended to enhance the accessibility of buildings for disabled students.
- E 5. (ASIIN 3.3, 5) It is recommended to develop stronger links to international companies.

For Ba Agricultural Extension and Communication

E 6. (ASIIN 3.1) It is recommended to monitor the teaching load of the staff.

For Ba Food Science and Technology

- E 7. (ASIIN 1.3) It is recommended to update the curriculum to incorporate expanded coverage of laboratory management.
- E 8. (ASIIN 3.3) It is recommended to expand the availability of teaching equipment especially for physical properties (Texture Analyser, colour measurement, viscosimeter, etc.).
- E 9. (ASIIN 3.3) It is recommended to establish laboratories dedicated solely to teaching or research purposes.

G Comment of the Technical Committee 08 – Agriculture, Forestry and Food Sciences (16.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers without any changes.

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

Degree Programme	ASIIN Seal	Maximum du- ration of ac- creditation	Subject-spe- cific label	Maximum dura- tion of accredi- tation
Ba Food Science and Technology	Without Re- quirements	30.09.2030	EQAS-FOOD	-30.09.2030
Ba Agricultural Exten- sion and Communica- tion	Without Re- quirements	30.09.2030	-	-

Recommendations

For all programmes

- E 1. (ASIIN 1.3) It is recommended to incorporate a broader spectrum of international relevance into the curriculum, such as enhancing content on topics like international trade.
- E 2. (ASIIN 1.3) It is recommended to strengthen the university's internationalization efforts, for instance by establishing more international collaborations and providing more information, support and funding opportunities for student mobility and by teaching more courses in English.
- E 3. (ASIIN 3.1) It is recommended to support lecturers more in grant writing processes and provide assistance with budgeting and related tasks.
- E 4. (ASIIN 3.3) It is recommended to enhance the accessibility of buildings for disabled students.
- E 5. (ASIIN 3.3, 5) It is recommended to develop stronger links to international companies.

For Ba Agricultural Extension and Communication

E 6. (ASIIN 3.1) It is recommended to monitor the teaching load of the staff.

For Ba Food Science and Technology

- E 7. (ASIIN 1.3) It is recommended to update the curriculum to incorporate expanded coverage of laboratory management.
- E 8. (ASIIN 3.3) It is recommended to expand the availability of teaching equipment especially for physical properties (Texture Analyser, colour measurement, viscosimeter, etc.).
- E 9. (ASIIN 3.3) It is recommended to establish laboratories dedicated solely to teaching or research purposes.

H Decision of the Accreditation Commission (23.09.2024)

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

The Accreditation Commission discusses the procedure and follows the assessment of the experts and the Technical Committee without changes.

Degree Programme	ASIIN Seal	Maximum du- ration of ac- creditation	Subject-spe- cific label	Maximum dura- tion of accredi- tation
Ba Food Science and Technology	Without Re- quirements	30.09.2030	EQAS-FOOD	-30.09.2030
Ba Agricultural Exten- sion and Communica- tion	Without Re- quirements	30.09.2030	-	-

The Accreditation Commission decides to award the following seals:

Recommendations

For all programmes

- E 1. (ASIIN 1.3) It is recommended to incorporate a broader spectrum of international relevance into the curriculum, such as enhancing content on topics like international trade.
- E 2. (ASIIN 1.3) It is recommended to strengthen the university's internationalization efforts, for instance by establishing more international collaborations and providing more information, support and funding opportunities for student mobility and by teaching more courses in English.
- E 3. (ASIIN 3.1) It is recommended to support lecturers more in grant writing processes and provide assistance with budgeting and related tasks.
- E 4. (ASIIN 3.3) It is recommended to enhance the accessibility of buildings for disabled students.
- E 5. (ASIIN 3.3, 5) It is recommended to develop stronger links to international companies.

For Ba Agricultural Extension and Communication

E 6. (ASIIN 3.1) It is recommended to monitor the teaching load of the staff.

For Ba Food Science and Technology

- E 7. (ASIIN 1.3) It is recommended to update the curriculum to incorporate expanded coverage of laboratory management.
- E 8. (ASIIN 3.3) It is recommended to expand the availability of teaching equipment especially for physical properties (Texture Analyser, colour measurement, viscosimeter, etc.).
- E 9. (ASIIN 3.3) It is recommended to establish laboratories dedicated solely to teaching or research purposes.

Appendix: Programme Learning Outcomes and Curriculum

According to Self-Assessment Report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Food Science and Technology:

	Programme Learning Outcomes (PLOs)
PLO 1	Master the concept and application of food science and technology which includes aspects of food chemistry and analysis, food microbiology and biotechnology, food process engineering, food biochemistry and nutrition, food sensory analysis, food safety, food regulation and applied food science in an integrated manner to produce safe and quality food products
PLO 2	Master the concept of food science and technology for the development of local food resources and the principles of sustainable development goals in the food sector
PLO 3	Able to communicate orally and in writing related to technical and non- technical aspects for scientific and general circles.
PLO 4	Able to think critically and analytically and solve problems, being responsible for work independently, and being able to make decisions based on data and information.
PLO 5	Able to work in a team, entrepreneur, and interact with other people from different backgrounds, and being skilled in organising and leading in various situations.
PLO 6	Have a commitment to professionalism and ethical values

The following **curriculum** is presented:

A. Semester 1

No.	Code	Compulsory Course	Cr	edit	
1	07063112002	Indonesian Philosophy (Pancasila)	2	0	
2	07063112003	Civics/Citizenship	2	0	
3	07063112004	Indonesian Language	2	0	
4		English for Academic Purposes	0	0	
5	07063143001	Biology	2	1	
6	07063143002	Physics	2	1	
7	07063143003	Calculus	2	1	
8	07063143004	Basic Chemistry I	2	0	
9	07063143005	Organic Chemistry	3	0	
10	07063143006	Introduction to Agricultural Technology	2	0	
	Total				

B. Semester 2

No.	Code	Compulsory Course	Cre	edit
1	07063212001	Islamic Religious Education	2	0
		Catholicism Religious Education		
		Protestantism Religious Education		
		Hinduism Religious Education		

	Total					
	T . 1					
9	07063232001	Introduction to Precision Agriculture	2	0		
8	07063243013	Material Science	2	1		
7	07063242012	Food Industry Operations Unit I	2	0		
6	07063243011	Microbiology	2	1		
5	07063242010	Basic Chemistry Practicum	0	2		
4	07063242009	Basic Chemistry II	2	0		
3	07063243008	Statistics	2	1		
2	07063243007	Scientific Writing and Presentation	3	0		
		Buddhist Religious Education				

C. Semester 3

No.	Code	Compulsory Course	Cr	edit
1	07063142014	Biochemistry	2	0
2	07063143015	Food Chemistry	3	0
3	07063142016	Food Chemistry and Biochemistry Practicum	0	2
4	07063142017	Food Microbiology	2	0
5	07063143018	Food Microbiological Analysis	1	2
6	07063142019	Food Industry Operations Unit II	2	0
7	07063141020	Food Process Engineering Practicum I	0	1
8	07063142021	Analytical Chemistry	1	1
9	07063143022	Economics, Techniques, and Management of Food Industry	2	1

10	07063132002	Sustainable Agricultural System	2	0
			15	7
Total		2	2	

No.	Code	Elective Course	Cr	edit
1	07063152001	Occupational Health and Safety (K3)	2	0
2	07043152001	Industrial Sociology	2	0
3	07053143038	Innovation Management	2	0
4	07053142039	Sociopreneur	2	0

D. Semester 4

No.	Code	Compulsory Course	Cre	dit
1	07063243023	Food and Nutrition	3	0
2	07063243024	Food Analysis	2	1
3	07063242025	Food Safety	2	0
4	07063242026	Food Industry Operations Unit III	2	0
5	07063243027	Sensory Analysis	2	1
6	07063242028	Food Processing Technology	2	0
7	07063242029	Animal Food Processing Technology Practicum	0	2
8	07063242030	Food Regulation	2	0
	Teth			4
	Total			9

No. Code Elective Course Co	redit
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1	07063253002	Post-Harvest Physiology and Technology	2	1
2	07063252003	Plantation Product Technology	2	0
3	07063252004	Halal Food Management	2	0
4	07053243003	Agribusiness Management	2	1

E. Semester 5

No.	Code	Compulsory Course	Cro	edit
1	07063123003	Entrepreneurship	2	1
2	07063143031	Nutrition Evaluation in Food Processing	2	1
3	07063143032	Experimental Design & Data Analysis	2	1
4	07063142033	Food Industry Operations Unit IV	2	0
5	07063141034	Food Process Engineering Practicum I	0	1
6	07063142035	Food Product Development	1	1
7	07063142036	Factory Design I	2	0
8	07063142037	Food Preservation Technology	2	0
	Total			5
				8

No.	Code	Elective Course	Cre	edit
1	07063152005	Meat and Fish Technology	2	0
2	07063153006	Spice and Essential Oil Technology	2	1
3	07063152007	Horticultural Technology	2	0
4	07063153008	Waste Utilisation Technology	2	1
5	07063152009	Bakery and Confectionary Technology	2	0

6	07063153010	Food Industry Microbiology	2	1	
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F. Semester 6

No.	Code	Compulsory Course	Cre	edit
1	07063242038	HACCP	2	0
2	07063243039	Quality Control	3	0
3	07063242040	Factory Design II	0	2
4	07063243041	Sanitation, Waste Management, and Environment	2	1
5	07063243042	Food Packaging Technology	2	1
6	07063243043	Applied Computer in Food Management	2	1
	Total			5
				6

No.	Code	Elective Course	Cr	edit
1	07063152005	Legume, Cereal, and Tuber Technology	2	0
2	07063153006	Dairy Processing Technology	2	0
3	07063152007	Fat and Oil Technology	2	1
4	07063153008	Fermentation Technology	2	1
5	07063152009	Catering Industry	2	0
6	07063153010	Functional Food	2	0

G. Odd/Even Semester

No.	Code	Compulsory Course	Cre	edit
1	07063323003	Internship	0	3

2	07063322001	Community Service	0	2
3	07063341044	Seminar	0	1
4	07063325004	Undergraduate thesis (final project)	0	5
Total			11	

According to Self-Assessment Report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Agricultural Extension and Communication:

	J J J			
Programme Learning Outcomes				
PLO 1	Have commitment to ethics and professional responsibilities, high integrity, being democratic, ethical, able to work together, and willing to have lifelong learning.			

Programme	Learning Outcomes
PLO2	Master knowledge and technology in agriculture in general (technical, economic, and social) and being able to formulate procedural and comprehensive solutions to agricultural development problems.
PLO 3	Master special knowledge and technology in AEC in the framework of community empowerment based on its roles as organiser, innovator, facilitator, motivator, dynamist, creator, and catalyst.
PLO 4	Have the ability to synergise stakeholders and various interests in decision-making to make agricultural extension effective and empowering communities.
PLO 5	Have the ability to plan, implement, and evaluate agricultural development programmes and community empowerment professionally in the context of developing community participation in a sustainable manner.
PLO 6	Master and implementing the theory of communication and information technology in planning and developing innovation efforts.
PLO 7	Have the ability to analyse, manage, and communicate innovation in agriculture to stakeholders as well as develop synergy to build progressive agriculture.
PLO 8	Have the ability to analyse the ecological, social, cultural, and economic conditions of a particular community, initiating its changing prospect based on justice and sustainability by taking into account the local, regional, national and global context.
PLO 9	Have the ability to conduct research in the field of community change, agricultural extension, and communication, as well as community empowerment according to the principles of the scientific methods.

The following **curriculum** is presented:

A. Se	emester 1			
NO	CODE	COMPULSORY COURSE	CRE	DIT
1	07023112002	Civics/Citizenship	2	0
2	07023112001	Indonesian Philosophy (Pancasila)	2	0
3	07023132001	Introduction to Precision Agriculture	2	0
4	07023143003	Introduction to Agricultural Science	2	0
5	070231430007	Botany	2	1
6	07023143004	Agricultural Economics	2	1
7	070231430006	Basics of Soil Science	2	1
8	07023142001	Scientific Methods	2	0
9	07023143005	Rural Sociology	2	1
	TOTAL			4
TOTAL		22		

CURRICULUM AND COURSE

B. Semester 2

NO	CODE	COMPULSORY COURSE	CRE	DIT
	07023212001	Buddhist Religious Education		
	07023212002	Hinduism Religious Education		
	07023212003	Islamic Religious Education		
1	07023212004	Catholicism Religious Education	2	0
	07023212005	Confucianism		
	07023212006	Protestantism Religious Education		
	07023212007	Other Religious Education		
2	07023212010	Indonesian Language	2	0
3	070232430064	Agrotechnology	2	1
4	070232430062	Agroclimatology	2	1
5	07023243003	Agricultural Extension	2	1
6	07023243004	Statistics	2	1
7	07023243005	Demography and Development	2	1
8	07023242006	Agrarian Study	2	0

9	07023242007	KomunikasiPersonal	2	0
	TOTAL		18	5
			23	3

C. Semester 3

NO	CODE	COMPULSORY COURSE	CRE	DIT
1	07023132002	Sustainable Agricultural System	2	0
2	07023143008	Extension Methods and Techniques	2	1
3	07023142009	Community Development	2	0
4	07023142010	Extension Learning Process	2	0
5	07023143011	Information Technology and Multimedia	2	1
6	07023144012	Applied Statistics	3	1
7	07023143013	Planning and Evaluation of Agricultural	2	1
		Extension and Training Programme		
8	07023143009	Farm Management	2	1
	TOTAL		17	5
			22	2

D. Semester 4

NO	CODE	COMPULSORY COURSE	CRE	DIT
1	07023243014	Social Science Research Methods	2	1
2	07023242015	Human Ecology	2	0
3	07023243016	Mass Communication	2	1
4	07043243007	Crop Protection	2	1
5	07023242017	Organisation and Leadership	2	0
6	07023243018	Training Management	2	1
7	07023242019	Cross-cultural Communication	2	0
8	07023242020	Rural Development Dynamics	2	0
9	07023242021	Innovation Communication	2	0
TOTAL			18	4
	IGIAL			2

NO	CODE	ELECTIVE COURSE	CRE	DIT
1	07023252022	Economic Sociology	2	0
2	07023252023	Agricultural Sociology	2	0
3	07053253025	Agricultural Resources Economics	2	1
4	07053242018	Agricultural Commerce	2	0
5	07043252042	Vegetable Crop Production Technology	2	0
6	07023243010	Horticultural Crop Production Technology	2	1
7	07023243023	Food and Nutrition	2	1
8	07023243006	Soil Fertility	2	1
9	07023243015	Macro-economics	2	1

Ε.	Se	mester 5			
ľ	0	CODE	COMPULSORY COURSE	CRE	DIT
	1	07023143026	Business Communication	2	1
	2	07023142027	Agricultural Development	2	0
	3	07023142028	Social Changes	2	0
	4	07023142029	Social Psychology	2	0
	TOTAL			8	1
				9	

NO	CODE	ELECTIVE COURSE	CRE	DIT
1	07023152030	Industrial Sociology	2	0
2	07023152031	Organisational Communication	2	0
3	07023152032	Personality Development	2	0
4	070231430048	Micro-Economics	3	0
5	070231430050	Tissue Culture Technology	2	1
6	070232420055	Plant Breeding Technology	1	1
7	070231430049	Poultry Science	2	1
8	070231420044	Introduction to Animal Science and	2	0
		Industry		

r. 50	mester 0			
NO	CODE	COMPULSORY COURSE	CF	EDIT
1	07023223033	Entrepreneurship	2	1
2	07023243034	Agricultural Communication	2	1
3	07023243035	Community Participation Development	2	1
TOTAL			6	3
	TOTAL			9

NO	CODE	ELECTIVE COURSE	CF	REDIT
1	07023252009	Social Forestry	2	0
2	07023252010	Agricultural Journalistic	2	0
3	07023252011	Empowerment Economics	2	0
4	07023252012	Corporate Social Responsibility (CSR)	2	0
5	07022352005	Plantation Product Technology	2	1
6	07023242028	Food Processing Technology	2	0
7	070232430059	Geographical Information System	2	1
8	070232430060	Agribusiness Investment Feasibility Study	2	1
9	070232600067	Livestock Product Management	2	1
10	07023353001	Digital Literacy	3	0
11	07023353002	Financial Literasi	3	0
12	07023353003	Physical and Mental Health	3	0
13	07023353004	Personal Branding	3	0
14	07023353005	Ecological and Enviromental Literacy	3	0
15	07023353006	Design Thingking	3	0
16	07023353007	Social and Cultural Literacy	3	0
17	07023354008	Archipelagic Module	2	2

G. Semester 7

NO	CODE	COMPULSORY COURSE	CREDIT	
1	07023122001	Community Service Program	0	2
2	07023123002	Internship	0	3
3	07023125004	Skripsi (Final Project)	0	5

	4	07023141028	Seminar	0	1
TOTAL		0	11		
			11		

NO	CODE	ELECTIVE COURSE	CREDIT	
1	07023152008	Agro-ecotourism	2	0
2	07023152004	Change Management and Conflict Resolution	2	0
3	070231430072	Agribusiness Cooperatives and Partnerships	2	1
4	070231430073	Meat and Draft Cattle Science	2	1
5	07023152005	Environmental Sociology	2	0
6	07023152006	Gender and Development	2	0
7	07023152007	Rural Community Local Wisdom	2	0

H. Semester 8

NO	CODE	COMPULSORY COURSE	CREDIT	
1	07023122001	Community Service	0	2
2	07023123002	Internship	0	3
3	07023125004	Skripsi (Final Project)	0	5
4	07023141028	Seminar	0	1
TOTAL			0	11
		11		