# ASIIN Seal

# Accreditation Report

**Bachelor's Degree Programmes**
***Agrotechnology***
***Animal Science***
***Food Technology***
***Aquaculture***
***Forestry***

Provided by
**Universitas Muhammadiyah Malang**

Version: 12.07.2024

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# A About the Accreditation Process

| Name of the degree programme (in original language) | (Official) English translation of the name | Labels applied for [1] | Previous accreditation (issuing agency, validity) | Involved Technical Committees (TC)[2] |
|---|---|---|---|---|
| Agroteknologi | Agrotechnology | ASIIN | Accreditation Board for Higher Education (BAN-PT), 19.10. 2021 – 20.09.2025 | 08 |
| Peternakan | Animal Science | ASIIN | Accreditation Board for Higher Education (BAN-PT), 26.10.2021 - 04.07.2022 | 08 |
| Teknologi Pangan | Food Technology | ASIIN | Accreditation Board for Higher Education (BAN-PT), 24.05.2022 – 21.11.2025 | 08 |
| Akuakultur | Aquaculture | ASIIN | Accreditation Board for Higher Education (BAN-PT), 10.05.2022 – 1.11.2025 | 08 |
| Kehutanan | Forestry | ASIIN | Accreditation Board for Higher Education (BAN-PT), 03.08.2021 – 3.08.2026 | 08 |

[1] ASIIN Seal for degree programmes

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

| | |
|---|---|
| **Date of the contract:** 17.11.2022<br>**Submission of the final version of the self-assessment report:** 30.03.2023<br>**Date of the onsite visit:** 19.-20.02.2024<br>**at: Universitas Muhammadiya Malang** | |
| **Expert panel:**<br>Prof. Dr Peter Braun, Hochschule Geisenheim University<br>Prof. Dr. Tobias Cremer, Eberswalde University of Sustainable Development<br>Prof. Dr. Sutrisno Hadi Purnomo, Universitas Sebelas Maret University<br>Dr. Knut Franke, Leibniz University Hannover<br>Dr. Fittrie Pratiwy, Universitas Padjadjaran<br>Dr. habil. Sonja Kleinertz, Conservation Dive Centre<br>Mashirra Hazelita, University of Jambi | |
| **Representative of the ASIIN headquarter:** Daniel Seegers | |
| **Responsible decision-making committee:** Accreditation Commission for Degree Programmes | |
| **Criteria used:**<br>European Standards and Guidelines as of May 15, 2015<br>ASIIN General Criteria, as of December 07, 2021<br>Subject-Specific Criteria of Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture as of March 27, 2015 | |

# B Characteristics of the Degree Programmes

| a) Name | Final degree (original/English translation) | b) Areas of Specialization | c) Corresponding level of the EQF[3] | d) Mode of Study | e) Double/Joint Degree | f) Duration | g) Credit points/unit | h) Intake rhythm & First time of offer |
|---|---|---|---|---|---|---|---|---|
| Agrotechnology | S.P. (Bachelor of Agriculture | | 6 | Full time | no | 8 Semester | 144 SKS | Annually |
| Animal Science | S.Pt. (Bachelor of Animal Science) | | 6 | Full time | no | 8 Semester | 144 SKS | Annually |
| Food Technology | S.TP (Bachelor of Agriculture Technology) | | 6 | Full time | no | 8 Semester | 144 SKS | Annually |
| Aquaculture | S.Pi (Bachelor of Fisheries) | | 6 | Full time | no | 8 Semester | 144 SKS | Annually |
| Forestry | S.Hut (Bachelor of Forestry) | | 6 | Full time | no | 8 Semester | 144 SKS | Annually |

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

For the Bachelor's degree programme Agrotechnology the institution has presented the following profile on its website:

**"VISION**

**"Building an Agrotechnology Department with an international reputation in the development and application of agrotechnology that supports sustainable agriculture based on Islamic values by 2030"**

**MISSION**

1. Organizing Agrotechnology Education and Teaching that supports sustainable agriculture and is in line with the needs of stakeholders and national development
2. Carrying out science and technology research and development in the field of horticulture that supports sustainable and environmentally friendly agriculture based on Islamic value
3. Organizing community service in the field of agrotechnology that supports sustainable agriculture based on science and technology and local ecosystems
4. Carrying out and collaborating with national and ASEAN institutions to strengthen the implementation of education, research and community service

**AIM**

1. Producing graduates in the field of agrotechnology professionally and adaptively according to the needs of the industrial, business and work world.
2. Producing research in the field of agrotechnology based on integrated, environmentally friendly and sustainable agriculture which is published globally
3. Producing community service to disseminate applied technology in the field of agrotechnology based on integrated, environmentally friendly and sustainable agriculture to improve community welfare
4. Carrying out collaboration with various related parties at national, regional and international levels
5. Realizing governance of the Agrotechnology study program that is transparent, accountable and Islamic."

For the Bachelor's degree programme Animal Science the institution has presented the following profile on its website:

**"VISION**

In 2030, it will become a leading department at the international level in the study and implementation of tropical livestock based on local potential based on Islamic values.

**Scientific Vision:**

Studying and implementing science and technology in the field of Tropical Livestock based on local potential that supports integrated, environmentally friendly, and sustainable agriculture to produce graduates who are superior, professional, Islamic, and adaptive to the latest science and technology.

**MISSION**

1. Organizing education and learning in the field of tropical livestock based on local potential that is professional based on research, Islamic values and Muhammadiyah.
2. Organizing research activities in the field of tropical livestock based on local potential that contributes to the development of science and technology.
3. Organizing community service activities in the context of implementing science and technology in the field of tropical livestock.
4. Organizing national and international networks to improve the quality of education, research, and community service.
5. Carrying out professional Department Management based on Islamic values.

For the Bachelor's degree programme Food Technology the institution has presented the following profile on its website:

"**Vision**

Becoming a leading institution in providing education, development of safe and halal food technology, and management of community service based on Islamic values for social and environmental welfare

**Mission**

1. Providing high quality education to produce bachelors in the field of Food Technology who are religious, professional, and independent

2. Increasing research in the field of Food Technology that is safe and halal to support the implementation of quality higher education
3. Increasing community service activities in order to disseminate safe and halal Food Technology
4. Increasing and developing cooperation with various parties, both on regional and international level

## Objectives

1. Producing Islamic, reliable and competitive graduates who are able to communicate with all levels of society
2. Developing research in the field of Food Technology that is safe and halal.
3. Producing and disseminate knowledge of science and technology for safe and halal food to improve people's lives
4. Realizing and developing cooperation with other parties in the regional, national and international scope

For the Bachelor's degree programme Aquaculture the institution has presented the following profile on its website:

**"VISION**

**"In 2030, it will become a reputable study program in ASEAN in the development and application of science and technology in the field of aquaculture that is sustainable based on islamic values".**

**MISSION**

1. Organizing a quality education and teaching system to produce human resources (undergraduate strata 1) who have a reputation and high competence both knowledge, skill and attitude competencies in the field of aquaculture (aquaculture) that are sustainable based on Islamic values.
2. Conducting research in order to develop science and technology in the field of aquaculture (aquaculture) that is sustainable based on Islamic values.
3. Organizing community service activities in order to apply science and technology in the field of sustainable aquaculture (aquaculture) based on Islamic values.
4. Establish and enhance cooperation with various parties, both with government agencies, private sector or other related institutions, on a regional, national and international scale in order to improve the competence and reputation of graduates.

**GOALS**

**Each mission has objectives that guide the implementation of the vision and missions, namely:**

1. Producing human resources who have a high reputation and competence, have good morals in every action and have independence in applying science and technology in the field of sustainable integrated agricultural science based on Islamic values.
2. Producing reputable scientific work as an effort to apply science and technology in the field of sustainable integrated agricultural science.
3. Producing and disseminating science and technology in the field of sustainable integrated agricultural science based on Islamic values to the public, government agencies and other stakeholders.
4. Carry out collaboration with government agencies and other relevant stakeholders, on a local, regional and global scale, in order to facilitate students and lecturers for internships/field work practices, research and community service, as an effort to increase graduate competency and provide information and job opportunities for graduates."

For the Bachelor's degree programme Forestry the institution has presented the following profile on its website:

"**VISION**

**Become a leading and qualify study program in science and technology in forestry development sector which is capable to produce competent human resources in managing forest and environmental resources with Islamic values for human welfare. This vision is expected to be achieved by 2025.**

**MISSION**

1. 1. Organizing the teaching and learning process according to the latest study program curriculum.
2. 2. To produce human resources who are devout, professional, independent and have an entrepreneurial spirit in implementing and developing science and technology in forestry sector.
3. 3. Creating a positive image according to capacity and professionalism.
4. 4. Building institutional cooperation with stakeholders.

**GOALS**

1. 1. To produce forestry graduates who have an Islamic competitive in developing and implementing science and technology in forestry sector.

2. 2. Producing scientific studies in to develop science and technology that sustainable and based on local potential.
3. 3. Disseminating science and technology in the field of sustainable forestry for the welfare of society.
4. 4. The creation of good collaborative relationships (networking) with government agencies, the private sector or other related institutions, on a regional, national and international scale, to facilitate students and lecturers for internships/field work practices, research and community service, as an effort to improve the quality of graduates as well as providing information and job opportunities for graduates."

# C Expert Report for the ASIIN Seal

## 1. The Degree Programmes: Concept, Content & Implementation

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

**Evidence:**

- Self-Assessment Report
- Study plan of the degree programmes
- Module descriptions
- Objective-Module Matrices
- Webpage of the study programmes
- Curriculum Handbooks
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

The objectives of the Bachelor's Degree Programmes in Agrotechnology, Animal Science, Food Technology, Aquaculture and Forestry at Universitas Muhammadiyah Malang (UMM) have been formulated in accordance with the institution's vision, mission and goals as outlined in its Strategic Plans for 2019 to 2022 and Vision 2030. They are also in line with the Presidential Decree of 2012, the Ministry of Education and Culture Decree of 2013 and subsequent national decrees. Workshops conducted by the University in 2017 and 2021 at the faculty (Faculty of Agriculture and Animal Science), department and study programme levels were instrumental in shaping these objectives:

The Agrotechnology Department builds an internationally reputable programme developing and applying agrotechnology for sustainable agriculture based on Islamic values. Its mission encompasses education, research, community service, and collaborations advancing environmentally friendly practices. Graduates are prepared as practitioners, entrepreneurs, researchers, and scholars combining theoretical knowledge, practical skills, and ethical principles aligned with sustainable agriculture and Islamic values.

The educational objectives emphasize producing capable human resources developing horticulture-focused agrotechnology, publishing research, disseminating technologies, and collaborating regionally. The Learning outcomes ensure graduates apply scientific concepts to integrated sustainable agriculture with commitment to values and norms. They demonstrate critical and innovative thinking, effective communication, strategic decision-making, and adaptability across environments. Analyzing data, exploring issues, and integrating knowledge allow them to uphold sustainable agriculture principles. This integration of expertise, sustainable practices, and Islamic values prepares graduates to innovate and contribute regionally and globally.

The Department of Animal Science aims to become a leading Southeast Asian programme in education management, science and technology development, and community service in integrated agriculture based on Islamic values by 2030. Its mission focuses on providing higher education in integrated animal science, conducting extensive research, fostering entrepreneurial spirit, implementing science and technology through research and community service, and developing collaborations to enhance education, research and community engagement.

Graduates will be prepared for roles as entrepreneurs, managers, educators, researchers and government officials. The programme aims to produce graduates capable of addressing sustainable development challenges in the complex global landscape of animal science. The Learning outcomes emphasise the application of basic scientific knowledge to animal production, the formulation and execution of experiments, problem solving, and the competent analysis and presentation of data. Graduates design integrated animal business systems that meet halal, health, safety, economic, environmental, social, ethical and sustainability criteria. They demonstrate professional development, ethical responsibility, lifelong learning, interpersonal skills, teamwork, planning, time management, computer literacy and the attitudes required in the world of work. This integration of technical expertise, entrepreneurial spirit and commitment to Islamic values prepares graduates to excel in integrated animal science regionally.

The Food Technology Programme strives to become a leading institution in providing education, developing safe and halal food technology, and managing community service based on Islamic values for social and environmental welfare. Its mission is to provide quality education to produce religious, professional and independent food technology graduates, to increase research in safe and halal food technology to support quality education, to increase community service activities to disseminate safe and halal food technology, and to develop regional and international collaborations.

Graduates will be prepared for roles as food industry practitioners, managers, entrepreneurs, researchers and academics. The objectives of the programme are to produce Islamic, reliable and competitive graduates who are able to communicate at all levels of society, to develop research in safe and halal food technology, to produce and disseminate knowledge to improve livelihoods, and to develop regional, national and international collaborations. The Learning outcomes ensure mastery of integrated food science principles on an industrial scale to produce safe, quality food products, effective oral and written communication, critical thinking, problem solving, responsibility, decision making, team working, intercultural interaction, leadership and a commitment to professional ethics in the food sector. This integration of food technology expertise with Islamic values prepares graduates to contribute to social and environmental well-being.

The Department of Aquaculture aims to establish an internationally renowned programme in the development and application of science and technology for sustainable aquaculture based on Islamic values by 2030. Its mission focuses on providing quality education to produce competent aquaculture graduates, conducting research to develop sustainable aquaculture technology, providing community services to apply this technology based on Islamic values, and enhancing regional and international cooperation to enhance the competencies and reputation of its graduates.

Graduates will be prepared for roles as managers, entrepreneurs, researchers, teachers and government officials. The objectives of the programme include producing reputable human resources who are competent in applying sustainable aquaculture technology based on Islamic values, publishing research in sustainable aquaculture, and producing/disseminating applied aquaculture technology to communities and institutions.

The Learning outcomes ensure that graduates can apply basic aquaculture knowledge, design experiments, solve problems, analyse/present data in Indonesian and English. They create aquaculture business systems that meet halal, health, safety, economic, environmental, social, ethical and sustainability criteria. Graduates demonstrate professional development, ethical responsibility, lifelong learning, interpersonal skills, teamwork, planning, time management, computer skills and attitudes required in the workplace. Crucially, they apply integrated aquaculture principles from domestic to industrial scale to produce high quality commodities. This integration of technical expertise in sustainable aquaculture technology with Islamic values prepares graduates to contribute regionally and globally.

The Forestry programme aims to be a reputable, professional programme that develops and applies environmentally sound, Islamic values-based forestry science and technology by 2030. Its mission encompasses quality education that produces competitive, religiously grounded forestry graduates, sustainable forestry technology research that utilises local

potential, community service that implements this technology, establishing regional/international collaborations to enhance the quality of graduates, and ensuring good governance.

Graduates will be prepared as forestry managers, entrepreneurs, researchers and social activists. Objectives include producing forestry graduates with Islamic value-based competitive advantages in the application of sustainable forestry technology, producing quality research on local sustainable forestry practices published in accredited journals, providing community service outputs disseminated to the public, and facilitating internship, research and career opportunities through robust institutional collaborations. The Learning outcomes will ensure mastery of forestry science, sustainable resource management principles, problem solving, communication, interdisciplinary teamwork, mapping, inventorying, planning, silvicultural applications, sustainable wood/non-wood processing, and data-driven solutions in the forestry sector. This integration of technical forestry expertise with environmental sustainability and Islamic values produces well-rounded graduates.

The five programmes under review ensure the currency of their curricula and respond to stakeholder needs through comprehensive evaluation mechanisms. Regular self-evaluation sessions assess the academic community's understanding of the programmes' vision, mission and objectives, facilitating improvements in communication and teaching materials. In addition, evaluations of learning outcomes by graduates and their peers, as well as assessments of graduates' performance in the labour market, provide invaluable insights into the effectiveness and relevance of the curriculum. These evaluations inform ongoing curriculum updates that incorporate international standards, outcomes-based education principles and innovative teaching methods to enhance graduate competencies. Stakeholder feedback, gathered through surveys and tracer studies, guides targeted interventions to address any competency gaps, ensuring that graduates are well prepared to meet industry demands and excel in their professions. Through continuous improvement initiatives and stakeholder engagement, the reviewed programmes maintain their commitment to providing high quality education and producing graduates who are equipped to succeed in their respective fields.

The collaboration between UMM and its industrial partners offers promising opportunities for graduates in the national labour market, as well as pathways for further academic pursuits, including Masters or even PhD programmes. However, employers express a desire for candidates with enhanced soft skills. Similarly, students are keen to develop their skills in this area. After careful consideration, the experts suggest the possibility of incorporating more oral presentations into the curriculum, given the predominance of paper-based assessments, to foster the development of additional soft skills.

During the review discussions between the experts and UMM, one focus was the assessment of the institution's internationalisation efforts, a key objective for the programmes under review. The aim is to equip graduates with the skills and competences necessary to compete effectively on a global scale. Throughout the review, the experts observed a genuine commitment by all stakeholders to achieving this goal. There is a shared understanding of the importance of internationalisation in preparing graduates for the global workforce. However, it was clear that there is room for improvement in order to achieve this goal consistently.

A recommendation arising from the audit findings is to ensure that the vision and mission are aligned at all levels of the University, including the University itself, faculties and programmes. This alignment will provide a coherent framework for the institution's internationalisation efforts and ensure that all activities and initiatives are directed towards common goals. The experts noted that the university vision has not been fully transferred to the programme level. Ensuring this alignment is therefore crucial to promoting a consistent approach to teaching, research and other activities across the institution.

In the view of the experts, it is therefore necessary for the faculties to determine whether there is a desire in the programmes to raise the national issues addressed in the curriculum to an international standard. While internationalisation is important, it is equally important to ensure that the content taught meets global standards and addresses universal challenges. By elevating national issues to an international standard, UMM can increase the relevance and competitiveness of its programmes on the global stage.

Implementing these recommendations will not only strengthen UMM's internationalisation efforts, but also ensure that graduates are well prepared to navigate the complexities of the global marketplace. Through a concerted effort to align the vision and mission and elevate national issues, UMM can further solidify its position as a leading institution in producing graduates capable of thriving in an international context.

In the context of efforts to internationalise programmes, both staff and students expressed a desire for more opportunities to improve their English language skills. The experts therefore recommend that more opportunities be provided for staff and students to improve their English language skills. To facilitate this, it was suggested that lecturers should be provided with additional opportunities for professional development in English language teaching. By enabling lecturers to improve their qualifications in this area, they would be better equipped to deliver lectures in English and thus better prepare students for the demands of the international market in terms of language skills.

The auditors refer to the Subject-Specific Criteria (SSC) of the Technical Committee Agriculture, and Food Sciences (TC 08) as a basis for judging whether the intended learning outcomes of the five study programmes under review, as defined by UMM, correspond with the competencies as outlined by the SSC. They come to the conclusion that the objectives and intended learning outcomes of the programmes under review are reasonable and well-founded.

### Criterion 1.2 Name of the Degree Programme

**Evidence:**

- Self-Assessment Report
- Webpage of the study programmes
- Curriculum Handbooks
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The auditors confirm that the English translations and the original Indonesian names of the Bachelor's degree programmes 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 programmes
- Module descriptions
- Objective-Module Matrices
- Webpage of the study programmes
- Curriculum Handbooks
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The Faculty of Agriculture and Animal Science adheres to the guidelines outlined in the Indonesian National Qualification Framework, as stipulated by Regulation of the President of the Republic of Indonesia Number 8 of 2012. Additionally, they follow the National Standards of Higher Education set forth by Regulation of the Minister of Research, Tech-

nology, and Higher Education of the Republic of Indonesia Number 44 of 2015. These regulations serve as foundational frameworks in the compilation and development of their curricula, ensuring alignment with national educational standards and requirements.

Graduate profiles serve as a guiding principle in shaping course development, which translates into specific learning outcomes. Courses, as outlined in the Module Handbook and Semester Study Plan (SSP), are meticulously designed to adhere to the Outcome Based Education (OBE) approach. Across all five programmes, students are required to complete a minimum of 144 credits, with the option to extend this through additional courses.

All of the programmes under review include National Courses, University Courses, Faculty Courses and Major Courses, which include both subject-specific and elective courses. However, the documentation provided did not clearly delineate how these categories were distributed across programmes, leading to confusion among the experts. This confusion stemmed from discrepancies in the curriculum outlines received. For example, while it was previously thought that the Agricultural Technology, Food Technology and Forestry programmes did not offer any electives, the updated outlines shed light on the inclusion of electives for students. However, the exact number of credits available to students remains unclear. Nevertheless, the experts are satisfied that all programmes offer elective courses and, as they noted, students have even greater flexibility to exchange courses under the Merdeka Belajar-Kampus Merdeka (MBKM) programme, which is discussed in more detail later in this chapter.

Practical application is integrated into the majority of courses, emphasising hands-on experience, which is essential for students' holistic development and preparation for their future careers in the agricultural and food sector.

All five programmes are designed for a duration of four years. Each semester is equivalent to 16 weeks, including 14 weeks of learning activities and 2 weeks for midterm and final exams. The odd semester starts in August and ends in January, and the even semester lasts from February to June.

The programmes are designed to offer a thorough education spanning eight semesters. In Semester 1, students concentrate on general courses aimed at improving their learning skills, attitudes, and personal development. Semester 2 introduces core courses in Agrotechnology, Animal Science, Food Technology, Aquaculture, and Forestry, laying the groundwork for subsequent study. Additionally, an entrepreneurship course equips students with initial experience in their prospective professional environments. From Semesters 3 to 6, students delve deeper into their subject-specific studies, which will be further detailed in the subsequent paragraphs for each programme.

In semesters 3-6 of the Agroecotechnology programme, students delve into specialized agricultural disciplines through a range of courses. Semester 3 covers foundational subjects like Genetics and Microbiology, alongside specialized topics such as Plant Protection Management. In Semester 4, students deepen their knowledge with courses like Seed Technology and Agricultural Biotechnology. Moving into Semester 5, they explore specialized topics like Post Harvest Management and Industrial Plant Growth Management. In Semester 6, advanced courses focus on areas like Pesticide Production and Agro e-commerce, preparing students with practical skills and theoretical knowledge for diverse roles in agriculture.

In semesters 3-6 of the Animal Science programme, students embark on a journey of specialisation within different aspects of animal science. Semester 3 lays the foundation with courses such as Animal Nutrition Science and Basic Livestock Product Technology, which explore topics such as animal nutrition and reproduction. In Semester 4, students deepen their understanding with courses such as Feed and Feed Technology and Basic Poultry Production, which focus on the practical aspects of animal husbandry. In Semester 5, they explore more specialised areas such as Poultry Production Management and Beef Ruminant Production Management, refining their skills in livestock management. Finally, in semester 6, students take advanced courses such as Livestock Product Processing Technology and Livestock Biotechnology, equipping them with the knowledge and skills needed to excel in various sectors of the animal science industry.

The Food Technology curriculum provides students with a comprehensive exploration of the subject over semesters 3 to 6. Semester 3 introduces fundamental courses such as Food Analysis, Biochemistry and Food Chemistry, emphasising both theoretical understanding and practical skills. Semester 4 builds on this foundation with courses such as Nutrient Physiology and Metabolism, Food Safety and Industrial Hygiene, and Food Engineering, focusing on advanced topics in food science and engineering. In Semester 5, students delve into specialised areas such as food additives, packaging and storage, and quality assurance systems, developing their knowledge of food safety and regulatory aspects. Finally, Semester 6 offers advanced courses such as Lipid Technology, Plant Products and Polysaccharides Technology and Food Waste Management Technology, allowing students to specialise further and explore emerging trends in the food industry.

In the Aquaculture curriculum, students progress through a wide range of subjects in semesters 3 to 6. Semester 3 includes core courses such as Aquatic Ecology, Aquatic Animal Physiology and Fisheries Agribusiness, which provide students with essential knowledge of aquatic ecosystems and fisheries management. Semester 4 introduces more specialised topics such as Natural Feed Cultivation, Occupational Health & Safety and Ornamental Fish & Aquascape Management & Technology, focusing on practical skills and industry-specific

knowledge. In Semester 5, students explore advanced areas such as Geographic Information Systems for Aquaculture, Fisheries Biotechnology and Environmental Impact Analysis, gaining insight into cutting-edge technologies and environmental management strategies. Finally, Semester 6 offers specialist courses such as Shrimp Cultivation Water Quality Management and Koi Health Management, allowing students to specialise in areas such as shrimp and ornamental fish farming, while developing expertise in water quality management and disease control.

The Forestry curriculum progresses through semesters 3-6, building on the basic knowledge and skills acquired in the previous semester. In Semester 3, students study courses such as Environmental Impact Assessment, Forest Ecology and Soil Fertility and Fertilisation, providing them with a solid understanding of ecological principles and resource management. Semester 4 focuses on more specialised topics such as silviculture, wildlife management and geomatics, equipping students with the tools for effective forest planning and conservation. Semester 5 introduces topics such as agroforestry, forest policy and ecotourism, emphasising the integration of socio-economic factors into sustainable forest management practices. Finally, Semester 6 explores advanced topics such as forest biotechnology, watershed management and business incubation, enabling students to address contemporary challenges in forestry through innovative research and practical solutions. Throughout the curriculum, students engage in project-based learning and hands-on experience, ensuring that they develop both the theoretical knowledge and practical skills essential for careers in forestry and related fields.

Semester 7 is dedicated to Community Service and an internship, preparing students to apply their knowledge in a working environment. Students are usually required to do community service in their final year. The programme coordinators explain that community service is compulsory for all Indonesian students. It lasts a minimum of four weeks and usually takes place in villages or rural areas where students stay and live with the local people. The course is designed to enable students to apply their knowledge in their field of study in order to empower society. During the audit, the experts learn that the students work on concrete tasks/contents in coordination with their supervisors and that they are well supervised in the process. The evaluation of the community service consists of a work plan, the implementation of the programme and an activity report.

The programmes conclude with a final thesis in which students demonstrate their mastery and understanding of the principles learned throughout the programmes. This comprehensive structure ensures that graduates are well equipped with a diverse range of skills to succeed in various aspects of agriculture and related industries.

In addition, students have the opportunity to enhance their practical experience through the MBKM programme, which translates as Freedom to Learn and Independent Campus. Internships are assessed by appointed supervisors and host institutions with cooperation agreements.

Since 2020, the MBKM programme provides students with the opportunity to earn up to 40 SCU (equivalent to 2 semesters) outside the university, and up to 20 SCU (equivalent to 1 semester) outside their field of study. This programme offers various possibilities for students, including internships in industry, research, independent projects, student exchanges, teaching assistance in education units, entrepreneurship, building a village, and humanitarian projects.

The MBKM-programme is optional for students. They are required to consult with their academic supervisor to determine their relevant part of the MBKM programme and fill out a Learning Agreement accordingly. The number of credit points students can earn by participating in one of the activities in the MBKM programme for a single semester depends on their workload.

There are two ways of participating in the MBKM programme: full-time and part-time. Full-time participation means leaving the campus for a semester without attending regular lectures, while part-time participation allows students to use their free time between academic activities on campus. Through discussions, the experts found that the acceptance of this programme is remarkably high. Students appreciate and actively use the opportunity to gain credits outside the campus environment. The experts consider this programme to be an excellent addition to the curriculum, giving students the freedom and opportunity to develop their skills in both practical and academic terms.

In general, the experts gained a positive impression of the new curricula implemented in the study programmes at UMM. They noted that many of their initial concerns and comments have already been addressed in the current versions, indicating a well-functioning quality assurance and curriculum development process within the institution. However, there remain some aspects that could be further improved and taken into account in future curriculum development efforts.

A crucial aspect emphasised by the experts is the significance of internationalisation for the overall programmes. They propose that attaining international standards necessitates a concentrated effort on excellence at the subject level. Consequently, the experts advocate for certain topics, such as climate change, sustainability, and biodiversity, to be more prominently integrated into curricula. Particularly for the Forestry programme, there should be additional emphasis on GIS, especially applied GIS. These subjects ought to be approached from an Indonesian perspective, considering the distinctive attributes of the Malang area.

Moreover, the experts recommend introducing special elective modules to enable students to explore and cultivate their interests in these domains.

Expanding the range of elective modules would provide students with greater flexibility and opportunities for specialisation. The experts also advocate the inclusion of more field trips or similar practical experiences to enhance students' hands-on learning experiences. They also suggest including more oral presentations in the curriculum to improve students' soft skills, such as communication and presentation skills.

By implementing these recommendations, programmes can further enhance the quality of education offered to students and better prepare them for the challenges and opportunities of their future careers.

The curriculum is regularly reviewed and feedback is received from various stakeholders, including students, lecturers, alumni and private sector partners. While minor changes are made on an ongoing basis, the curriculum is revised and reviewed in more detail every four years. It is also aligned with, the Indonesian National Qualifications Framework and industry recommendations. The curricula effectively address the needs of its stakeholders and Indonesian society.

In summary, the experts gain the impression that the choice of modules and the structure of the curricula ensure that the intended learning outcomes of the respective degree programmes can be achieved and that graduates are well prepared for entering the labour market and can find adequate jobs in Indonesia. During the discussion with the experts, UMM’s partner from the industry/public sector confirm that the graduates have a broad scientific education, are very adaptable, and have manifold competences, which allows them to find adequate jobs.

Mobility

Based on the evaluation of the expert group, a major problem identified in the reviewed programmes is the limited academic mobility of UMM students. Despite a high level of student interest in studying abroad, opportunities are limited. Currently, UMM cooperates with the Erasmus+ programme and has relations with 123 universities in 35 countries, but only two students have participated in an Erasmus student exchange to Poland.

Enquiring about UMM's internationalisation strategy, the auditors noted that the Indonesian government's "Freedom to Learn and Independent Campus" (MBKM) policy actively supports external activities. However, despite this policy, the auditors found a lack of concrete steps taken by UMM to implement international programmes. The university lacks substantial partnerships with foreign universities regarding student mobility, and there is a

notable absence of infrastructure for students seeking information about studying abroad or accessing scholarships.

During the review, the experts found a strong tendency to prepare students for international experiences, including periods abroad, by emphasising English language skills. This is evidenced by the use of English as the medium of instruction and the use of predominantly international literature in coursework, which they found commendable. While lecturers are generally satisfied with teaching in English, not all feel fully equipped to maintain the same level of quality in English teaching. As a result, the experts stress the importance of providing better support for both staff and students in developing their English language skills. This should facilitate the expansion of English-taught courses and ultimately ensure that students are better equipped for international opportunities. They also advocate better dissemination of information to students about available student exchange opportunities, such as summer schools, internships or full semesters abroad. Finally, they stress the importance of better communication regarding funding opportunities for these activities.

**Criterion 1.4 Admission Requirements**

**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Decree of Minister of Research, Technology and Higher Education No. 2, 2015
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The admission process at UMM is conducted through a selection test administered by the Admission Bureau (PMB). Three admission schemes are available: admission for high-achievers, regular tests, and scholarship programs, each with its fixed quota. Information about admission requirements, schedules, and venues is transparently provided on the university website. Basic requirements include high school graduation, uploading necessary documents, payment of admission fees, and completion of a registration form. Admission has been conducted online since 2015, ensuring transparency and accessibility to results. The university ensures objectivity and strictness in the admission process, with results communicated by early August. Efforts are made to address challenges in student admission, including obtaining accreditations, promotions, and expanding cooperation with various sectors.

In summary, the auditors find the terms of admission to be 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 plan of the degree programmes
- Module descriptions
- Curriculum Handbooks
- Statistical data on study progress and failure rate
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The workload of students and lecturers is determined by the number of credits assigned to each course. In 2020/2021, the Rector issued an academic guideline to regulate this workload, in accordance with Regulation 03/2020 of the Minister of Education and Culture. According to these regulations, one credit corresponds to 50 minutes of classroom activities, 60 minutes of structured activities outside the classroom led by lecturers, and 60 minutes of self-directed student activities. This equates to a total workload of 170 minutes per credit for both students and lecturers each week. Additionally, for practical work, one credit is equivalent to 170 minutes of laboratory or fieldwork. UMM defines one ECTS credit as equivalent to 30 hours of student work.

During the evaluation, the experts noted that several courses at in the Animal Science programme were assigned a higher number of credits compared to standard curricula in Indonesia. Specific courses included Agroneurship (8 SKS), Poultry Production Management (8 SKS), Feed Technology (6 SKS), Beef Ruminant Management (8 SKS), and Dairy Ruminant Management (8 SKS). UMM clarified that the increased credit allocation allows for a deeper exploration of complex topics within each course and enhances the development of contextual knowledge in specialized subjects.

Students, when consulted, expressed satisfaction with the current workload and reported that they do not feel overwhelmed by the cumulative demands of the semester. Consequently, the accreditation experts commend UMM’s initiative to integrate more comprehensive and challenging courses, a strategy reminiscent of European curricula, which typically feature more extensive and intensive course structures.

The statistical analysis of the self-assessment report over the years indicated that students of all five programmes needed one more semester than the standard study duration. During the audit, the experts looked into the causes that contribute to this prolonged duration.

The university cited several factors potentially responsible for the extended study period, including challenges associated with finding suitable supervisors and thesis topics, disruptions stemming from the Covid pandemic, and the inherent complexities of research involving living materials.

Feedback from students suggests that the workload associated with the thesis doesn't match the credits allocated for it. While a possible solution could be to re-evaluate the standards of the thesis, the experts advocate a more practical approach. They suggest adjusting the credits allocated and the workload envisaged, which seems inadequate with the current allocation of 9 ECTS credits, equivalent to around 270 hours of work.

In order to address this discrepancy without violating national regulations, the experts suggest that an additional thesis proposal seminar be included in the curriculum. This seminar would allow students to start their thesis work under the guidance of the faculty. By starting their research early, students can gradually progress through the thesis process, thereby reducing the burden of completing the thesis within a limited timeframe.

Integrating the Thesis Proposal Seminar into the curriculum not only provides students with early guidance, but also introduces a structured framework for initiating their research. This seminar can be credited, ensuring compliance with national regulations while effectively addressing workload imbalances. This approach enables students to manage their workload more effectively, leading to a more rewarding dissertation experience and ultimately improving the quality of their academic output.

Despite these challenges, it's worth noting that some students successfully complete their studies before the standard time limit. This suggests that while improvements in the process of allocating credits to theses are warranted, the overall structure of programmes may not be the primary concern. Rather, facilitating students with an appropriate number of credits for their thesis workload could lead to more timely graduation. Finally, the experts urge UMMs to ensure that all students are able to complete their studies within the normal timeframe.

When asked about the overall workload of the students, they expressed satisfaction, stating that they are currently content and still able to engage in out-of-class activities or part-time work.

In summary, the reviewers found from student feedback that they generally found the workload satisfactory, with the exception of the thesis. However, the experts underscore

the importance of ongoing monitoring to track the evolution of average study durations over time.

**Criterion 1.6 Didactic and Teaching Methodology**

**Evidence:**

- Self-Assessment Report
- Information on procedures of seminars, field practices and theses writing
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The Faculty of Agriculture and Animal Science is committed to fostering students' competencies in communication, teamwork, social/environmental responsibility, independence, and problem-solving. To achieve this objective, the curriculum is designed to focus on learning outcomes with a global perspective. Each course is meticulously planned, including detailed lesson plans and semester lesson plans, ensuring clarity and transparency for students. The predominant teaching methods involve lecturing followed by discussions, supplemented by student-centred and problem-based learning approaches.

Various learning methods are employed to ensure a comprehensive development of students' knowledge, skills, and competencies, including discussions, presentations, practicums, field practices, and small-scale research. Classroom instructions are conducted using relevant methods tailored to the learning outcomes of each course. The learning environment is equipped with modern facilities to support interactive and collaborative learning experiences.

During the pandemic, the faculty seamlessly transitioned to online learning platforms, ensuring continuity in education. Online practicums were conducted through video tutorials, allowing students to participate remotely and submit practical assignments from their homes. The Learning Management System (LMS) facilitated effective communication and collaboration between students and teaching staff, enhancing the online learning experience.

To further support the achievement of Graduate Learning Outcomes (GLOs), the faculty conducts training sessions for teaching staff on instructional techniques. Additionally, the Internal Quality Assurance System (SPMI) ensures that teaching and learning activities meet predetermined standards. The faculty encourages independent scientific projects among students, providing policy, facility, and advisory support to facilitate scientific activities.

In summary, the expert group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concept of the programmes comprise a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning). However, during the audit, the students expressed their desire to participate more in practical experiences, such as through field trips. The experts support this idea, as they consider visiting a real-life working environment under the guidance of an academic to be highly valuable for integrating both perspectives within the study programmes.

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

**Criterion 1.1**

UMM explains the different stages of the programmes and the universities development plan regarding the programmes vision and mission. As it seems the programme level and the university level are developed in a strong connection. The experts consider this approach to be sound concept.

**Criterion 1.3**

The university has addressed the topic of elective courses in its statement, outlining the balance between elective and compulsory courses for each study programme and presenting the new curricula that include lists of elective courses. The experts are pleased with the clarity provided and are supportive of the direction UMM has taken with the new curricula.

UMM has provided a detailed explanation on how its study programmes address contemporary issues such as climate change, biodiversity, and sustainability. From the updated curricula and supplementary information provided, the experts believe that UMM and its programmes are well-informed about these critical topics and have integrated them into the curricula effectively. However, they suggest that these issues could be more prominently featured within the programmes to enhance their impact and visibility.

The FSD study programme reports that it has been offering GIS-based courses since 2016, incorporating GIS-based spatial analysis into several courses. These interlinkages and incorporation could be made more clear in the module handbook, where it is not obvious. The experts appreciate this clarification and express satisfaction, recognizing GIS as an integral component of the programme.

The study programmes have responded to the experts' recommendation to increase field trips and enhance students' soft skills, such as through more frequent oral presentations. These activities are already well-integrated into the programmes and are regularly practiced. The experts are pleased with this progress and encourage UMM to continue its efforts, particularly in facilitating industry visits.

UMM has described the competitive landscape concerning scholarships for international mobility and expressed its commitment to enhancing opportunities for student exchanges. The experts commend these efforts and continue to recommend that UMM further expand and facilitate international mobility to make it more accessible to more students from the faculty.

**Criterion 1.5**

Given the brief response from UMM, the experts are unable to ascertain how the reported changes impact the overall workload for students. Consequently, they request that UMM provide more detailed information on how it ensures that thesis credits accurately reflect the students' workload and clarify the role that the mentioned courses play in this assessment.

The experts consider criterion 1 to be **not fulfilled.**

# 2. Exams: System, Concept and Organisation

| **Criterion 2 Exams: System, Concept and Organisation** |
|---|

**Evidence:**

- Self-Assessment Report
- Module descriptions
- Academic Guidelines
- Academic Calendar
- Sample exams and theses
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
According to the Self-Assessment Report, the students’ academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, presentations, mid-term exam, and the final exam at the end of each semester.

The types of examinations in the five programmes under review include written examinations for taught courses, practical fieldwork examinations, work placements, research proposal seminars, research results seminars and dissertation examinations. The written examination is used to assess the achievement of learning outcomes for all taught courses, while the defence examination is used for seminars and the dissertation examination. Information on the grading system will be provided in the Lecture Contract at the first class meeting.

If a student fails, he must repeat the entire module in the following semesters; it is not possible to retake just parts of the course or to just retake the final exam. The further details are described the Academic Guidelines.

The experts discuss with the students how many and what kind of exams they have to take each semester. 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 oral tests. The final grade is the sum of the sub-exams.

As per the Academic Guidelines, each student is required to undertake a final thesis. This involves a scholarly pursuit comprising design, research, case studies, and scientific problem-solving, under the guidance of academic staff. Students are responsible for identifying a suitable topic through discussions with lecturers, developing their own ideas, or participating in a lecturer's research project. Once a topic is chosen, students may propose a supervisor for their thesis and submit a formal proposal to the lecturer. The lecturer will then evaluate the proposal and appoint an appropriate supervisor for the project. Additionally, students have the opportunity to have their thesis work published in national and international journals based on its quality and language. The experts view this as a valuable opportunity for students to gain insight into publication matters and are pleased to learn that the university provides strong support for students in these pursuits.

During the audit, the experts raised queries regarding provisions for disadvantaged or disabled students to request modified exam formats, schedules, and other accommodations tailored to their specific needs. UMM clarified that students have the opportunity to apply for such adjustments, and following an evaluation of their circumstances, suitable accommodations will be granted. The experts are reassured that UMM prioritises these concerns and endeavours to devise personalised solutions for each applicable case.

The experts also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples.

In conclusion, the experts note that all relevant examination regulations are in place and well communicated in a transparent way. The forms of exams are oriented toward the envisaged learning outcomes of the respective courses, and the workload is distributed in an acceptable way.

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

UMM does not comment on this criterion.

The experts consider criterion 2 to be **fulfilled.**

# 3. Resources

**Criterion 3.1 Staff and Staff Development**

**Evidence:**

- Self-Assessment Report
- Staff Handbook
- Study Plans
- Module descriptions
- Sample of lecturer workload report
- Rector regulation on selection and dismissal of lecturers and administrative staff
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
At UMM, the staff members have different academic positions. There are professors, associate professors, assistant professors and instructors. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, a full professor needs to hold a PhD degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position.

The number of lecturers involved in the programmes is documented in the following way in the Self-Assessment Report:

| Qualification* | AGD | | ASD | | FTD | | AQD | | FSD | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | % | Total | % | Total | % | Total | % | Total | % |
| Professor | 1 | 4.35 | 5 | 20.83 | 2 | 14.29 | 0 | 0 | 0 | 0 |
| Associate Professor | 9 | 39.13 | 10 | 41.67 | 3 | 21.43 | 1 | 9.09 | 3 | 27.27 |
| Assistant Professor | 11 | 47.83 | 6 | 25 | 8 | 57.14 | 8 | 72.73 | 7 | 63.64 |
| Instructor* | 2 | 8.69 | 3 | 12.5 | 1 | 7.14 | 2 | 18.18 | 1 | 9.09 |
| Pre-qualified | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 23 | 100 | 24 | 100 | 14 | 100 | 11 | 100 | 11 | 100 |

The teaching staff at the Faculty of Agriculture and Animal Science, University of Muhammadiyah Malang, predominantly hold master's degrees (S2) or doctoral degrees (S3) from reputable state universities such as Gadjah Mada University (UGM), Institut Pertanian Bogor University (IPB), Bandung Institute of Technology (ITB), Airlangga University (Unair), and Brawijaya University (UB). Additionally, some staff members have obtained their degrees from international universities including The University of Queensland (Australia), Kasetsart University (Thailand), National Pingtung University of Science and Technology (Taiwan), and Hiroshima University (Japan).

Currently, all programmes except the Food Technology programme meet the national criteria for staff-to-student ratio. However, the Food Technology Department is addressing this issue through collaboration with teaching staff from other departments. Various courses in the Food Technology Department are taught by faculty from other departments, including Islamic Studies, Indonesian Language, Foreign Language, Computer Applications, Entrepreneurship, Operational Research, and Livestock & Fishery Product, among others. Nevertheless, subject-specific courses in food technology are taught by specialists in the field. Since UMM has devised a strategy to manage this challenge, the experts are satisfied. Additionally, based on the staff development plan, UMM aims to further improve this situation in the future.

Furthermore, the university presents comprehensive data detailing the expertise, academic backgrounds, and highest degrees of its lecturers. Additionally, UMM furnishes an

extensive list of guest lecturers. The experts commend the inclusion of both international guest lecturers and industry representatives in this list, recognizing their significant contribution to the teaching roster.

A principal concern raised during the audit was the apparently low number of full professors at UMM, as evidenced by the provided data. UMM reported that the situation has since improved, with several faculty positions recently being filled by new staff members. The expert panel was pleased to learn that UMM had proactively identified and addressed these staffing issues. Nevertheless, they recommend that UMM develop a comprehensive staff development plan. This would enable a more systematic approach to faculty enhancement and facilitate external reviews to ensure sustained improvements.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes.

Support and Assistance:

Support and assistance for the five programmes under review is provided at both programme and university level.

During the course of their studies, each student is assigned at least three, and usually four, advisors. The first is an academic supervisor, who guides the student throughout their studies and provides support in both academic and non-academic matters. The second is the designated dissertation supervisor, whose primary role is to assist and support the student in planning, conducting research and writing the dissertation. The third supervisor oversees field placements and compulsory internships.

At the university level, a student development body has been established to provide assistance and support, empowering students and alumni through job application training. The University also provides counselling services for students facing personal problems or other challenges.

In addition, UMM hosts various student organisations, including activity clubs focused on the arts, sports, religion and other extracurricular pursuits. The experts observed a strong and trusting relationship between students and staff. A wealth of resources are available to provide individual help, guidance and support to all students. This robust support system facilitates the achievement of intended learning outcomes and enables students to successfully complete their studies without unnecessary delay. Students are well informed about the range of services available to them.

Development:

The Faculty of Agriculture and Animal Science at UMM places significant emphasis on the development of teaching staff, which is overseen by the Vice-Rector for Institutional, Human Resources, and Collaborations Affairs. This development encompasses education, research, and community services, supported by national competency training such as PEKERTI and Applied Approach (AA). Additionally, annual block grants and institutional grants are allocated for research and community service initiatives. External grants are accessible through national competitions, further enhancing development opportunities. Monitoring and evaluation of teaching staff performance are conducted through an integrated online system, ensuring regular assessments and feedback.

The experts engage in discussions with teaching staff members regarding opportunities for personal skill development. They learn that teachers express satisfaction with UMM's internal qualification programme, as well as opportunities to enhance their teaching abilities and attend conferences, workshops, or seminars abroad. Overall, the teaching staff are content with the avenues available for career and skill development. Addressing a previously raised concern, they express a desire for more opportunities to improve their English language proficiency. The experts endorse this notion in alignment with UMM's overarching internationalisation strategy.

In summary, the auditors confirm that UMM University 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 Funds and equipment**

**Evidence:**

- Self-Assessment Report
- On-Site Visit
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

According to the self-assessment report, the management of funds and equipment within the Faculty of Agriculture and Animal Science at UMM is governed by the University Act and supervised by the Vice Dean for Academic Affairs. Budget planning and programme proposals are aligned with strategic and operational plans, subject to review by internal controls and the internal quality assurance agency. Approved budgets are disbursed to departments on a quarterly basis. Salary payments are made directly to teaching staff, while operational funds are transferred to the Faculty account three times a year. Funds for research and community services are allocated internally and externally, with proposals for facilities development directed to the University's Finance Department. Each department

maintains specialist laboratories with specific facilities and equipment tailored to their respective fields. Collaborative affairs are overseen by the Vice Rector for Institutional, Human Resources and Collaborative Affairs, who facilitates collaboration between the faculty and external partners for various courses and programmes. To overcome shortages of facilities, the faculty can use shared facilities provided by UMM or collaborate with campus partners or other institutions as required.

During the on-site visit, the auditors comprehensively evaluated the infrastructure and equipment of the university's faculties, encompassing classrooms, laboratories, preparation rooms, administrative facilities, and spaces dedicated to seminars and examinations. The programs are well-equipped to support practical work and research, boasting a range of tools suitable for both laboratory and field activities.

The auditors inspected various facilities across the campus. In the Agrotechnology program, visits were made to field sites, a plastic tunnel, and a traditional greenhouse. These field facilities are actively used by students for experiments, reflecting the practical scenarios faced by growers and farmers.

For Forestry, the labs visited included those for wood species determination, basic analysis of flora and fauna, soil, wood, and related properties. The campus botanical garden is effectively integrated into the teaching curriculum, enhancing educational outcomes.

The Food Technology department features a small bakery where students conduct baking experiments using pilot-scale equipment. Additional facilities include laboratories for microbiology tests and food analysis, which equip students with hands-on experience in their field.

In Aquaculture, the auditors explored the external fish and shrimp ponds, Koi breeding ponds, laboratories, a microscope room, fish health units, co-working spaces, and a library. A Center of Excellence (CoE) augments the aquaculture facilities, which are described as exemplary.

The visit to the Animal Science program revealed comprehensive housing facilities for both ruminant and non-ruminant livestock. This includes cages for beef and dairy cattle, goats, sheep, laying hens, and small-scale broilers, alongside a free-range chicken coop and a medium-scale hatching machine used for genetic research supported by the LPDP government agency. The in-house laboratories, including an animal product laboratory, mini chicken slaughterhouse, microbiology laboratory, and a laboratory for leather, waste, and by-products, are well-equipped, though there is a need for more equipment. Notably, the nutrition laboratory has been accredited by the National Accreditation Committee (KAN) under ISO 17025:2017.

While the existing facilities are considered adequate for teaching at the bachelor's level, the reviewers note a lack of advanced equipment. The experts recognize that the current quality and quantity of teaching equipment might pose a challenge to effective teaching and research. In light of this, the experts recommend that UMM prioritize upgrading existing teaching equipment.

During the visitation of the Forestry Facilities, the experts had the opportunity to explore the Educational Forest, a noteworthy addition to the standard facilities of the programme. In the Educational Forest, facilities for e.g. essential oil or resin production were visited, as well as facilities for bee keeping and craftsmanship. As well, tree harvesting and the protected part of the Educational Forest were demonstrated. They recognised it as a significant asset of the programme, likely to appeal to prospective students. Consequently, the experts advise other departments to cultivate similar Unique Selling Points to enhance the programmes' visibility beyond the Malang area, thereby attracting more students.

Although the Educational Forest serves as a notable feature of the Forestry programme, the experts identified areas for enhancement concerning the laboratory facilities for ecology and silviculture. Presently, these facilities appear to receive less emphasis within the programme, despite being integral components of the Forestry programme. Additional state-of-the art equipment would support build up of the students' competencies but would also foster possibilities for research and international cooperation. Therefore, there is room for improvement in this regard.

During the audit, the experts conducted thorough visits to the administrative buildings and the central library, aiming to evaluate the university's overall infrastructure. These visits provided valuable insights into the accessibility and availability of literature resources. Upon analysing the existing literature and online journal subscriptions, the experts determined that the current access to literature is satisfactory.

In summary, the experts confirm that current funding at the UMM allows for maintaining standards and purchasing additional necessary equipment. UMM generally has sufficient workspace and laboratories equipped with mostly up-to-date instrumentations. However, there is scope for improvement in the quality and quantity of teaching equipment, as well as the potential to provide more advanced and modern teaching and research facilities, possibly through collaborations.

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

**Criterion 3.1**

UMM has enhanced the staff situation in the AQD and FSD departments by enrolling two new lecturers into the professorship acceleration program and by increasing resources for staff professional development. While the experts commend these improvements, they still recommend that UMM develop a comprehensive staff development plan. This plan should address specific subject areas and the overall capacity of the program, as well as anticipate future developments within the specific study programs.

**Criterion 3.2**

All programs demonstrate a strong commitment to improving their equipment and facilities. The experts are pleased with this commitment and recognize that upgrading equipment is a time-intensive and financially demanding process, requiring funds to be sourced in various ways.

The experts consider criterion 3 to be **fulfilled.**

# 4. Transparency and Documentation

**Criterion 4.1 Module Descriptions**

**Evidence:**

- Module Handbooks

**Preliminary assessment and analysis of the experts:**
The students, as all other stakeholders, have access to the module descriptions via UMM's homepage. After studying the module descriptions, the experts confirm that they include all necessary information about the persons responsible for each module, the teaching methods and work load, the awarded credit points, the intended learning outcomes, the content, the applicability, the admission and examination requirements, and the forms of assessment and details explaining how the final grade is calculated.

However, as it became apparent that the submitted module handbooks were drafted for the previous curriculum, the experts urge UMM to submit new module handbooks based on the new curricula. The descriptions should be also updated with regards to the depth of the description of the content which seemed to be superficial in the ones presented for the old curricula.

**Criterion 4.2 Diploma and Diploma Supplement**

**Evidence:**

- Exemplary diploma per programme

- Exemplary diploma supplement per programme
- Exemplary transcript of records per programme

**Preliminary assessment and analysis of the experts:**
The peers confirm that the students of all five degree programmes are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Diploma Supplement contains all necessary information but is lacking statistical data as set forth in the ECTS User's Guide to categorise the individual result/degree in comparison to the students cohort. This needs to be added for future usage.

**Criterion 4.3 Relevant Rules**

**Evidence:**

- Self-Assessment Report
- All relevant regulations as published on the university's webpage

**Preliminary assessment and analysis of the experts:**
The auditors confirm that the rights and duties of both UMM 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.

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

**Criterion 4.1**

UMM has updated the module descriptions for all courses, aligning them more closely with the current curriculum. The experts are pleased with these updates but suggest that UMM consider consolidating these descriptions into a single document, ideally a Module Handbook. This would provide students and other stakeholders with easy access to all relevant information in one comprehensive file. As well, there are still some mistakes in the handbook, such as the similar description of "module objectives" and "module content" in the FSD modules "Forest harvesting", "Forest policy" and "Forest resource conservation"

**Criterion 4.2**

UMM has introduced updated Diploma Supplements that now facilitate the assessment of individual students' skills.

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
- Quality standards of the university
- Results of the Tracer Studies
- Samples of teaching evaluations and surveys
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The Faculty of Agriculture and Animal Science at the UMM has an established internal quality assurance system (IQAS/SPMI), which is implemented in a progressive, systematic and strategic manner under the guidance of the Internal Quality Assurance Office (IQAO/BPMI) and the Faculty-level Quality Assurance Committees (QAC/GPMI).

The IQAS policy is formally documented in the University's Statutes, Development Master Plan and Rector's Decrees. The IQAS process follows a cycle of establishing, implementing, evaluating, monitoring and improving quality standards. These standards are designed to be in line with Indonesia's National Standards for Higher Education, as well as UMM's own standards on identity, Islamic development, governance, student development and collaboration.

Student feedback on the teaching-learning process is collected through end-of-semester surveys that assess aspects such as lecturer reliability, competence, responsiveness, trust, empathy and adequacy of support facilities. In addition, internal audits are regularly carried out to provide a comprehensive assessment of academic management.

Achievement of intended learning outcomes is tracked through student grade point averages across the five faculties. Analyses show the distribution of courses aligned to the learning outcomes of each programme. While there is some variation from year to year, the achievement of learning outcomes generally peaked in 2019/2020 for most departments.

The robust quality assurance processes include well-defined policies, extensive documentation, regular assessments, internal audits and continuous improvement efforts. This enables the Faculty to maintain and improve the quality of its teaching, research and community service provision in line with stakeholder expectations.

The auditors engaged in comprehensive discussions on the quality management practices at UMM with both the programme coordinators and the students. The Academic Quality Assurance Units at the faculty level focus on assessing teaching, research, community service, infrastructure quality, faculty governance, academic processes, and study programme achievements. Additionally, the Higher Education National Accreditation Body (BAN-PT) serves as an external quality assurance organization established by the Indonesian government.

In collaboration with the Academic Quality Assurance Unit, all five programmes have developed systematic assessment tools to evaluate the learning outcomes of the programmes and to assess the performance of graduates in the labour market. The results, presented in the self-evaluation report and its annexes, indicate a general satisfaction with the quality of the programmes.

Internal evaluation of degree programs primarily relies on student surveys. These questionnaires, distributed each semester before final exams, play a crucial role in monitoring and evaluating learning processes. The summarised feedback is then shared with respective lecturers, who, based on the results, may reassess courses and implement changes if necessary. In the event of negative outcomes, the Head of Department engages with the concerned teacher to discuss teaching methods, with the expectation of performance enhancement in subsequent instances. During the audit, the students were asked about their perception of the feedback system's effectiveness and whether they were informed about the changes implemented based on their feedback. The students expressed satisfaction with the responsiveness of the feedback system and the subsequent changes initiated.

In summary, the expert group acknowledges that the quality management system at UMM is effective in identifying weaknesses and enhancing degree programmes.

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

UMM did not comment on this criterion.

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

# D Additional Documents

No additional documents are needed.

# E Comment of the Higher Education Institution (20.05.2024)

The institution provided a extensive statement as well as the following additional documents:

- Curricula Overviews
- Diploma Supplements
- Module Descriptions

# F Summary: Expert recommendations (27.05.2024)

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

| Degree Programme | ASIIN Seal | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Agrotechnology | With requirements for one year | 30.09.2029 | | |
| Ba Animal Science | With requirements for one year | 30.09.2029 | | |
| Ba Food Technology | With requirements for one year | 30.09.2029 | | |
| Ba Aquaculture | With requirements for one year | 30.09.2029 | | |
| Ba Forestry | With requirements for one year | 30.09.2029 | | |

## Requirement

**For all programmes**

A 1. (ASIIN 1.5) It has to be ensured that the thesis credits accurately reflect the workload of the students.

## Recommendations

**For all programmes**

E 1. (ASIIN 1.3) It is recommended to expand the offering of courses taught in English.

E 2. (ASIIN 1.3) It is recommended to enable and motivate students more to go abroad (e.g. by offering more scholarships, providing information about scholarships, etc.).

E 3. (ASIIN 3.1) It is recommended to provide English language training for lecturers.

E 4. (ASIIN 3.1) It is recommended to create a systematic staff development plan.

E 5. (ASIIN 3.2) It is recommended to improve and increase the quantity and quality of teaching equipment.

**For all Ba Agrotechnology, Ba Animal Science, Ba Food Technology and Ba Aquaculture**

E 6. (ASIIN 3.2) It is recommended that facilities similar to the Educational Forest be established for other programmes and actively promoted to attract prospective students.

**For all Ba Forestry**

E 7. (ASIIN 1.3) It is recommended to introduce additional modules on GIS, such as applied GIS.

E 8. (ASIIN 3.2) It is recommended to enhance the laboratory facilities for ecology and silviculture.

# G Comment of the Technical Committee 08 – Agriculture, Forestry and Food Sciences (04.06.2024)

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee discusses the accreditation procedure and follows the assessment of the experts 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 duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Agrotechnology | With requirements for one year | 30.09.2029 | | |
| Ba Animal Science | With requirements for one year | 30.09.2029 | | |
| Ba Food Technology | With requirements for one year | 30.09.2029 | | |
| Ba Aquaculture | With requirements for one year | 30.09.2029 | | |
| Ba Forestry | With requirements for one year | 30.09.2029 | | |

# H Decision of the Accreditation Commission (28.06.2024)

*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.

The Accreditation Commission decides to award the following seals:

| Degree Programme | ASIIN Seal | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Agrotechnology | With requirements for one year | 30.09.2029 | | |
| Ba Animal Science | With requirements for one year | 30.09.2029 | | |
| Ba Food Technology | With requirements for one year | 30.09.2029 | | |
| Ba Aquaculture | With requirements for one year | 30.09.2029 | | |
| Ba Forestry | With requirements for one year | 30.09.2029 | | |

## Requirement

**For all programmes**

A 1. (ASIIN 1.5) It has to be ensured that the thesis credits accurately reflect the workload of the students.

## Recommendations

**For all programmes**

E 1. (ASIIN 1.3) It is recommended to expand the offering of courses taught in English.

E 2. (ASIIN 1.3) It is recommended to enable and motivate students more to go abroad (e.g. by offering more scholarships, providing information about scholarships, etc.).

E 3. (ASIIN 3.1) It is recommended to provide English language training for lecturers.

E 4. (ASIIN 3.1) It is recommended to create a systematic staff development plan.

E 5. (ASIIN 3.2) It is recommended to improve and increase the quantity and quality of teaching equipment.

**For all Ba Agrotechnology, Ba Animal Science, Ba Food Technology and Ba Aquaculture**

E 6. (ASIIN 3.2) It is recommended that facilities similar to the Educational Forest be established for other programmes and actively promoted to attract prospective students.

**For all Ba Forestry**

E 7. (ASIIN 1.3) It is recommended to introduce additional modules on GIS, such as applied GIS.

E 8. (ASIIN 3.2) It is recommended to enhance the laboratory facilities for ecology and silviculture.

# Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report the following **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programmes:

| Component | AGD | ASD | FTD | AQD | FSD |
|---|---|---|---|---|---|
| Learning Outcomes | 1. Applying theoretical concepts of science and technology to integrated sustainable agriculture, committed to values, ethics and norms as a professional in Agrotechnology (ELO1)<br>2. Capable to study and implement science and technology in the field of integrated | 1. Applying the knowledge of the basic science related to animal production (ELO 1)<br>2. Formulating, designing, conducting experiments and solving problems related to animals as well as analysing, interpreting, and presenting data in written and oral forms using | 1. Mastering and applying the principles of food science (food chemistry and analysis, microbiology, food safety, food engineering and processing, food biochemistry, nutrition and health, and applied food science) in an integrated manner on an industrial scale to produce safe and quality | 1. Utilizing fundamental knowledge regarding aquaculture (ELO 1)<br>2. Establishing, constructing, carry out experiments, and answering animal-related problems, in addition to examining, understanding, and reporting the results in both Indonesian and English. (ELO 2) | 1. Perceiving the concepts of basic science and forestry science in logistics and critical rain forest ecosystem management (ELO1)<br>2. Understanding the principles of sustainable forest resource management in problem solving which is an ef- |

| Component | AGD | ASD | FTD | AQD | FSD |
|---|---|---|---|---|---|
| | sustainable agriculture through logical, critical, systematic, creative and innovative thinking (ELO2)<br>3. Able to communicate effectively, work in a team, make strategic decisions, and be able to adapt to the work environment and society at local, national, regional and international levels on integrated sustainable agriculture by the latest developments in science and technology (ELO3) | both Bahasa and English (ELO 2)<br>3. Designing an animal business system of which components and processes meet halal, health and safety criteria within the constraints in economics, environment, social, politics, ethics and sustainability (ELO 3)<br>4. Applying professional developing skills and ethical responsibility as well as abilities to engage in lifelong learning (ELO 4)<br>5. Applying interpersonal and teamwork skills | food products (ELO1)<br>2. Being able to communicate orally and in written form related to technical and non-technical aspects (ELO2)<br>3. Being able to think critically and analytically, solve problems, be responsible for their work independently, and make appropriate decisions based on information that can be accounted for (ELO3)<br>4. Being able to work in a team, interact with other people from different | 3. Creating a fishing business system with halal, hygiene, and safety components and processes within economical, ecological, social, political, ethical, and sustainable limitations (ELO 3)<br>4. Employing professional development abilities and ethical duties, along with the capacity for lifelong learning (ELO 4)<br>5. Effectively using personal and teamwork skills, defining achievable goals and strategies, and scheduling and assessing work | fective communication and is able to work together through an interdisciplinary approach<br>3. Applying mapping, inventory, and planning for sustainable forest resource management. (ELO3)<br>4. Applying silviculture for natural forest, plantation forest, and agroforestry (ELO4)<br>5. Processing timber and non-timber forest products as an entrepreneurial appli- |

| Component | AGD | ASD | FTD | AQD | FSD |
|---|---|---|---|---|---|
| | 4. Analyzing and interpreting the developments data in science and technology-based principles of integrated sustainable agriculture on an agroindustrial scale (ELO4)<br>5. exploring and integrating factual conditions with knowledge according to current issues regarding integrated sustainable agriculture (ELO5) | effectively, setting realistic targets and plans, allocating and evaluating the work done either individually or in a team (ELO 5)<br>6. Displaying competence, behaviour, time management, organization skills and attitude required in the professional world (ELO 6)<br>7. Demonstrating competences in the use of computers as a means of communication and technology, as well as a source of information effectively (ELO 7) | backgrounds, organize and lead in various situations, and has a commitment to ethical values as a professional in the food sector (ELO4) | accomplished individually and in teams (ELO 5)<br>6. Presenting the professional world-required, such as competency, demeanor, time management, organizational abilities, and attitudes (ELO 6)<br>7. Demonstrating proficiency in using computers as a communication tool and technology as well as an effective source of knowledge (ELO 7)<br>8. Being able to apply the principles of aquaculture in an integrated manner in the | cation in a sustainable manner (ELO5)<br>6. Identifying problems, determining methods, interpreting data and finding solutions in the forestry sector (ELO6) |

| Component | AGD | ASD | FTD | AQD | FSD |
|---|---|---|---|---|---|
| | | | | production process of fish farming on a household scale to an industrial scale to produce high-quality and superior commodities (ELO 8) | |

The following curriculum is presented for the Bachelor's Degree Programme Agrotechnology:

| Semester 1 | |
|---|---|
| 110201159 | Civics |
| 110201729 | Pancasila |
| 110205726 | Faith and Humanity |
| 110205835 | Productive Skills of ESP |
| 210200259 | Agricultural Biology |
| 210201938 | Innovative Agrocomplex |
| 210204833 | Bahasa Indonesia |
| 210205378 | Integrated Natural Sciences: Chemistry, Physics, Agricultural Mathematics |
| 210205729 | Agronomic: Development, Growth, and Propagation |
| **Semester 2** | |
| 120201165 | Entrepreneurship |
| 120205727 | Worship and Mu'amalah |
| 120205836 | Receptive Skill of ESP |
| 210200249 | Plant Biochemistry |
| 210200667 | Plant Physiology |
| 210204268 | Agroclimatology |
| 210204776 | Identification of Pest Organisms |
| 210204780 | Computer Application |
| 310200942 | Soil Science |

| | |
|---|---|
| **Semester 3** | |
| 120201074 | Kemuhammadiyahan |
| 210200678 | Genetics |
| 220201166 | Horticultural Plant Business Incubation |
| 210202727 | Statistics |
| 210204267 | Microbiology and Organic Agriculture |
| 310201262 | In-Vitro Culture |
| 310204777 | Plant Protection Management |
| 310204783 | Horticultural Crop Management |
| **Semester 4** | |
| 110202909 | Seed Technology |
| 120205728 | Islam dan IPTEKS |
| 210201544 | Agricultural Mecanization |
| 210201839 | Plant Breeding |
| 210202483 | Experimental Design |
| 220205092 | Crop Business Incubation |
| 310204784 | Agricultural Biotechnology |
| 310204787 | Analysis of Land Suitability and Soil Fertility |
| 310204788 | Management of Crop Production |
| **Semester 5** | |
| 210204271 | Post Harvest Management |
| 310201271 | Landscape |
| 310201585 | Agronomic Research Method |
| 310204789 | Industrial Plant Growth Management |
| 310204792 | Urban Agriculture |
| 420202360 | Seed Production |
| 420206237 | Smart and Precision Agriculture |

| | Semester 6 |
|---|---|
| 320206239 | Pesticide and Biological Fertilizer Production |
| 420200112 | Plant Growth Analysis |
| 420205620 | Agro e-commerce |
| 420206003 | Applied Plant Breeding ** |
| 420206004 | Product Development and Seed Market ** |
| 420206005 | Seed Processing ** |
| 420206006 | Seed Commerce ** |
| 420206007 | Seed Resource Management ** |
| 420206008 | Seed Production Company Orientation ** |
| 420206009 | Seed Production Technique ** |
| 420206240 | Writing and Publication of Scientific Papers |
| 420206241 | Agricultural Waste Bioconversion |
| 420206242 | Agro-Industry Business |
| 420206243 | Statistics Application |
| 420206244 | Horticultural Crop Management II |

| | |
|---|---|
| 320205610 | Integrated and Sustainable Agriculture * (2Sks) |
| 320205612 | Agricultural Waste Management * (2Sks) |
| 420205611 | Marginal Land Management * (2Sks) |
| 420205613 | Digital Teknik in Agronomy * (2Sks) |
| | **Semester 7** |
| 420206245 | Seed Industry Profession Incubation ** |
| 420206246 | PMM: Seed Industry Colleagues Farmers ** |
| 420206247 | Vegetable Seed Production Business Partner ** |
| 420206248 | Fruit Seed Production Business Partner ** |
| 420206249 | Seed Industry Professional Internship ** |
| 510201260 | Community Service by Students (PMM) |
| 520202255 | Internship |
| | **Colloquium** |
| 510202666 | **Bachelor's Thesis** |
| **total** | |

*L:* *Lecture*
*S:* *Seminar*
*T:* *Tutorial*
*M:* *Mini project*
F: field study and practice
* Elective Course
** COE

The following curriculum is presented for the Bachelor's Degree Programme Animal Science:

| | Semester 1 |
|---|---|
| 120350189 | Bahasa Indonesia |
| 120351729 | Pancasila |
| 120355572 | Faith and Humanity |
| 220355043 | Computer Applications, Internet and Programs |
| 220355835 | Productive Skills of FLSP |
| 220351938 | Innovative Agrocomplex |
| 220354814 | Mathematics |
| 220354811 | Biology |
| 210355286 | Biology Practicum |
| 220354812 | Physics |
| 210355287 | Physics Practicum |
| 220354813 | Chemistry |
| 210355285 | Chemistry Practicum |
| | **Semester 2** |
| 120355573 | Aqidah and Worships |
| 120351159 | Civics |
| 220355836 | English Proficiency Test Preparation Course |
| 220351165 | Entrepreneurship |
| 220351573 | Scientific Method |
| 220352727 | Statistics |
| 120354682 | Livestock Genetics and Breeding |
| 210355289 | Practicum of Livestock Genetics and Breeding |
| 120355291 | Biochemistry |
| 210355292 | Biochemistry Practicum |

| | |
|---|---|
| 220353486 | Microbiology |
| 210355290 | Microbiology Practicum |
| | **Semester 3** |
| 120351074 | Muhammadiyah |
| 120350913 | Animal Nutrition Science |
| 210355295 | Practicum of Animal Nutrition Science |
| 220350332 | Basic Livestock Product Technology |
| 210355300 | Practicum in Basic Livestock Product Technology |
| 220350935 | Animal Reproduction Science |
| 210355293 | Practicum in Animal Reproduction Science |
| 220353487 | Livestock Health |
| 210355294 | Practicum OF Livestock Health |
| 220354691 | Livestock Economics |
| 210355297 | Practicum in Livestock Economics |

| | Semester 4 |
|---|---|
| 120355728 | Islam in Science, Technology, and Art |
| 120355091 | Feed and Feed Technology |
| 210355304 | Feed and Feed Technology Practicum |
| 210355305 | Skill of Feed and Feed Technology |
| | Expert Lecture on Feed and Feed Technology |
| 120354683 | Basic Poultry Production |
| 210355296 | Practicum on Basic Poultry Production |
| 120354684 | Basic of Beef Ruminants Production |
| 210355299 | Practicum in Basic of Beef Ruminants Production |
| 120354685 | Basic of Dairy Ruminant Production |
| 210355298 | Practicum in Basic of Dairy Ruminant Production |

| | Semester 5 |
|---|---|
| 120354686 | Poultry Production Management |
| 210352319 | Practicum in Poultry Production Management |
| 210355302 | Skills of Poultry Production Management |
| 210355303 | Expert Lecture of Poultry Production Management |
| 120354688 | Beef Ruminant Production Management |
| 210355306 | Practicum in Beef Ruminant Production Management |
| 210355307 | Skills of Beef Ruminant Production Management |
| 210355308 | Expert Lecture of Beef Ruminant Production Management |
| 120354689 | Dairy Ruminant Production Management |
| 210355309 | Practicum in Dairy Ruminant Production Management |
| 210355310 | Skills of Dairy Ruminant Production Management |

| | |
|---|---|
| 210355311 | Expert Lecture of DairyRuminant Production Management |
| | **Semester 6** |
| 120354690 | Livestock Product Processing Technology* |
| 210355319 | Practicum of Livestock Product Processing Technology* |
| 210355320 | Skills of Livestock Product Processing Technology* |
| 420356016 | Expert Lecture of Animal Product Processing * |
| 220354875 | Livestock Biotechnology* |
| 420355318 | Practicum ofLivestock Biotechnology* |
| 120354692 | Livestock Bussiness Management* |
| 120353775 | Occupational Health and Safety* |
| 220354817 | Animal Science Research Methodology* |

| | |
|---|---|
| 420355732 | Final Project Methodology** |
| 210355013 | Closed House System Management** |
| 210355314 | Practicum of Closed House System Management** |
| 320355010 | Poultry Feed Technology and Formulation** |
| 210355313 | Practicum OF Poultry Feed Technology and Formulation ** |
| 310355011 | Poultry Health Management** |
| 210355315 | Practicum of Poultry Health Management** |
| 310355012 | Breeding and Hatchery Management** |
| 210355316 | Practicum of Breeding and Hatchery Management** |
| 310355014 | Poultry Business Management** |

| | |
|---|---|
| 420355732 | Final Project Preparation Methodology*** |
| 420355974 | Ruminant Feed Logistics*** |
| 420355975 | Practicum of Ruminant Feed Logistics*** |
| 420356010 | Beef Ruminant Industry*** |
| 420356011 | Practicum of Beef Ruminant Industry*** |
| 420356012 | Dairy Ruminant Industry*** |
| 420356013 | Practicum of Dairy Ruminant Industry*** |
| 420356014 | Ruminant Biotechnology*** |
| 420356015 | Practicum of Ruminant Biotechnology*** |
| 420355982 | Ruminant Business Management*** |

| | Semester 7 |
|---|---|
| 520351260 | Community Service |
| 120355093 | Internship |
| 120354693 | Business Incubation* |
| 220355092 | Business Project* |
| 420355326 | Digital Marketing* |
| 420352925 | Packaging Technology* |
| 420352017 | Quality Control* |
| 420353496 | Livestock Development Regulations and Policies* |
| 420353492 | Livestock Communication and Extension* |
| | |
| 420355983 | Teaching Farm Pullet** |
| 420355984 | Pullet Industry Internship** |
| 420355985 | Teaching Farm Layer** |
| 420355986 | Layer Industry Internship** |
| 420355987 | Teaching Farm Broiler** |
| 420355988 | Broiler Industry Internship** |
| 420355989 | Teaching Farm Breeding** |
| 420355990 | Breeding Farm Industry Internship** |
| 420355991 | Teaching Farm Feed Technology** |
| 420355992 | Feed Technology Industry Internship** |
| | |
| 420355993 | Teaching Farm Ruminant Feed Logistics*** |
| 420355994 | Ruminant Feed Logistics Industry Internship*** |

| | |
|---|---|
| 320355995 | Teaching Farm extensive Feedlot*** |
| 420355996 | Extensive Feedlot Industry Internship*** |
| 420355997 | Teaching Farm intensive Feedlot*** |
| 420355998 | Intensive Feedlot Industry Internship*** |
| 420355999 | Teaching Farm Dairy Science*** |
| 420356000 | Dairy Science Industry Internship*** |
| | **Colloquium** |
| | **Bachelor's Thesis** |

**total**

***L:*** ***Lecture***
***S:*** ***Seminar***
***T:*** ***Tutorial***
***M:*** ***Mini Project***
***F:*** ***Field Study***
***P:*** ***Field Practice***
***C:*** ***Case Study***
***R:*** ***Research***

* Elective Course
** COE Poultry
*** COE Ruminant

The following curriculum is presented for the Bachelor's Degree Programme Food Technology:

| Semester 1 | |
|---|---|
| 320220141 | Computer Application |
| 120220189 | Bahasa Indonesia |
| 220220265 | General Biology |
| 220220641 | Basic Physic |
| 120225835 | Productive Skills of Foreign Languages for Specific Purpose 1 |
| 220223579 | Calculus |
| 120225726 | Faith and Humanity |
| 220221172 | Basic Chemistry |
| 220221729 | Pancasila |
| 220221971 | Innovative Agrocomplex |
| **Semester 2** | |
| 120225573 | Moral and Muamalah |
| 120224975 | Foreign Languages for Specific Purpose 2 |
| 220221171 | Inorganic Chemistry |
| 220221185 | Organic Chemistry |
| 220225426 | Science Communication |
| 220221652 | General Microbiology |
| 220221859 | Civics |
| 320223161 | Food Ingredient Knowledge |
| 420225427 | Entrepreneurship |
| 220222535 | Operation Unit |

| Semester 3 | |
|---|---|
| 320225430 | Food Analysis |
| 120220242 | Biochemistry |
| 120221074 | Kemuhammadiyahan |
| 320221188 | Food Chemistry |
| 220225432 | Scientific Methods |

| | |
|---|---|
| 420225431 | Food Microbiology |
| 220223164 | Introduction to Food Biotechnology |
| 320222748 | Statistics |
| 220225429 | Heat and Mass Transfer |
| **Semester 4** | |
| 120225728 | Islam and SciTech |
| 220225433 | Physiology and Metabolism of Nutrients |
| 220220658 | Postharvest Physiology and Technology |
| 220225734 | Food Safety dan Industrial Sanitation |
| 220225434 | Food Engineering |
| 120225436 | Food Physical Chemistry |
| 320224699 | Processing Machinery and Equipment |
| 420222929 | Food Processing Technology |
| 320225438 | Food Analysis Practicum |
| 320225435 | Food Microbiology Practicum |
| 420225440 | Sensory Analysis |
| **Semester 5** | |
| 320225439 | Food Additives |
| 320221995 | Packaging and Storage |
| 320222483 | Research Design |
| 420225443 | Food Nutrition Evaluation |
| 120221392 | Halal and Safety Food Management |
| 220225444 | Quality Assurance Systems |
| 420225442 | Food Processing Technology Practicum |
| 320222089 | Food Regulation |
| 290655288 | Business Incubation |

| Semester 6 | |
|---|---|
| 320222154 | Processing Unit Planning* |
| 320225441 | Functional Food and Nutraceutical* |
| 420220471 | Engineering Economics* |
| 420224704 | Lipida Technology* |
| 420224702 | Plantation Products and Polysaccharides Technology* (3 credits) |
| 220222913 | Fermentation Technology* |
| 420224701 | Food Crops and Horticulture Technology* |
| 420226097 | Food Toxicology* |
| 420225743 | Food Waste Management Technology* |
| 420225735 | Herbs, Spices, and essential oil Processing Technology* (2 credits) |
| 460555398 | Halal Authentication Analysis* |
| 567843283 | Cacao Bean Post-Harvest Technology** (3 credits) |
| 543928911 | Cocoa Bean Intermediate Product Processing Technology** (3 credits) |
| 555623761 | Cocoa Bean Final Product Processing Technology** (3 credits) |
| 589435210 | Chocolate Formulation Techniques** (3 credits) |
| 523895461 | Cacao By Product Processing** (3 credits) |
| 551908717 | Industrial Management and Branding of Chocolate** (2 credits) |
| 521896572 | Sensory Analysis of Chocolate** (3 credits) |
| **Semester 7** | |
| 420222255 | Internship |
| 589643088 | Chocolate Professional Internship** (6 credits) |
| | **Semester 8** |
| 520221260 | Community Services |
| | **Bachelor's Thesis** |

| | |
|---|---|
| ***L:*** | ***Lecture*** |
| ***S:*** | ***Seminar/Presentation/Discussion*** |
| ***T:*** | ***Tutorial*** |
| ***M:*** | ***Mini Project*** |
| ***F:*** | ***Field Study*** |
| ***P:*** | ***Field Practice*** |
| ***** | ***Elective Course*** |
| ****** | ***COE*** |

The following curriculum is presented for the Bachelor's Degree Programme Aquaculture:

| | |
|---|---|
| **Semester 1** | |
| 120650189 | Bahasa Indonesia |
| 120650193 | Pancasila |
| 120655572 | Al Islam & Kemuhammadiyahan I |
| 120654974 | Foreign Language for Spesific Purpose 1 |
| 220651489 | Introduction of Fisheries |
| 220651482 | Mathematics |
| 220650258 | Fisheries Biology |
| 220655077 | Physics |
| 220655087 | Innovative Agrocomplex |
| 220655078 | Chemistry |
| **Semester 2** | |
| 310650141 | Computer Application |
| 110655573 | Aqidah and Worship |
| 120650185 | Civics |
| 110654975 | Foreign Language for Spesific Purpose 2 |
| 110650174 | Aquatic Invertebrates |
| 210655573 | Biochemistry |
| 210650847 | Ichtyology |
| 110652517 | Swimming Practice |
| 220654872 | Basic of Aquaculture |
| 510651266 | Entrepreneurship |
| **Semester 3** | |
| 310650660 | Al Islam & Kemuhammadiyahan III |
| 310650409 | Aquatic Ecology |

| | |
|---|---|
| 310650660 | Aquatic Animal Physiology |
| 110654636 | Basic of Capture Fisheries |
| 310650414 | Aquatic Microbiology |
| 310650421 | Planktonology |
| 310650415 | Fisheries Agribusiness |
| 210654873 | Statistics |
| **Semester 4** | |
| 110655574 | Akhlaq dan Mu'amalah |
| 310650263 | Introduction to Oceanography |
| 310650257 | Natural Feed Cultivation |
| 310652483 | Experimental Design |
| 210651143 | Occupational Health and Safety |
| 110653181 | Manag. & Tech. of Ornamental Fish & Aquascape* |
| 310650258 | Nutritional & Feeding Management Fish/Shrimp |
| 210651614 | Research Methodology |
| | Semester 5 |
| 210653179 | Geographic Infor. System for Aquaculture |
| 310650273 | Fishery Biotechnology |
| 410653177 | Manag. of Coastal & Ocean Resources |
| 210650111 | Environmental Impact Analysis |
| 310654796 | Communication. & Public Service for Fishery* |
| 310654797 | Processing Technology of Fishery Products* |
| 110650681 | Fish Genetic |
| | Semester 6 |
| 410651366 | Water Quality Management |
| 310650156 | Fish Feeding Management |
| 310650149 | Aquaculture Engineering |
| 210655465 | Fish Breeding & Reproduction |
| 210654637 | Aquaculture Technology Management |
| 310653174 | Paracites & Diseases of Aquatic Animals |
| 210655463 | Shrimp Cultivation Water Quality Management (3 credits)** |
| 210655464 | Shrimp Aquaculture Engineering (3 credits)** |
| 210655465 | Shrimp Nutrition and Feed Management (3 credits)** |

| | |
|---|---|
| 210655466 | Shrimp Hatchery Management and Technology (3 credits)** |
| 210655467 | Shrimp Rearing Management and Technology (3 credits)** |
| 210655468 | Shrimp Health Management (3 credits)** |
| 420655968 | Koi pond management (3 credits)** |
| 420655969 | Water Quality Management and Koi Cultivation Filtration Systems (3 credits)** |
| 420655970 | Koi Nutrition and Feed Management (3 credits)** |
| 420655971 | Koi Health Management (3 credits)** |
| 420655972 | Koi hatchery management and technology (3 credits)** |
| 420655973 | Koi rearing management and technology (3 credits)** |
| | Semester 7 |
| 510651260 | Community Service Program |
| 510651263 | Business Incubation |
| 510651262 | Business planning and analysis |
| 510651264 | Digital Marketing |
| 510651258 | PKL |
| 420656166 | Internship Biosecurity applications Industry (2 credits)** |
| 420656167 | Internship in land preparation industry and vaname shrimp cultivation media (2 credits)** |
| 420656168 | internship Hatchery industry and quality of fry (3 credits)** |
| 420656171 | Industry internship in vaname shrimp rearing techniques (3 credits)** |
| 420656169 | Feed management technology industry internship (3 credits)** |
| 420656170 | Industrial internship in fry distribution and harvesting techniques (2 credits)** |
| 420656172 | Disease prevention and treatment industry internship (2 credits)** |
| 420656173 | Koi Breeding industry internship (2 credits)** |
| 420656174 | Filtration technology industry internship (2 credits)** |
| 420656175 | Koi rearing industry internship (3 credits)** |
| 420656176 | Koi health and disease management industry internship (2 credits)** |
| 420656177 | Feed management industry internship (2 credits)** |
| 420656178 | Koi quarantine engineering industry internship (2 credits)** |
| 420656179 | Koi marketing strategy (2 credits)** |
| | Semester 8 |
| 310652555 | Seminar |

| | |
|---|---|
| 510652666 | Thesis |
| | Colloquium |
| | Bachelor's Thesis |
| **Semester 5** | |
| 210653179 | Geographic Infor. System for Aquaculture |
| 310650273 | Fishery Biotechnology |
| 410653177 | Manag. of Coastal & Ocean Resources |
| 210650111 | Environmental Impact Analysis |
| 310654796 | Communication. & Public Service for Fishery* |
| 310654797 | Processing Technology of Fishery Products* |
| 110650681 | Fish Genetic |
| **Semester 6** | |
| 410651366 | Water Quality Management |
| 310650156 | Fish Feeding Management |
| 310650149 | Aquaculture Engineering |
| 210655465 | Fish Breeding & Reproduction |
| 210654637 | Aquaculture Technology Management |
| 310653174 | Paracites & Diseases of Aquatic Animals |
| 210655463 | Shrimp Cultivation Water Quality Management (3 credits)** |
| 210655464 | Shrimp Aquaculture Engineering (3 credits)** |
| 210655465 | Shrimp Nutrition and Feed Management (3 credits)** |
| 210655466 | Shrimp Hatchery Management and Technology (3 credits)** |
| 210655467 | Shrimp Rearing Management and Technology (3 credits)** |
| 210655468 | Shrimp Health Management (3 credits)** |
| 420655968 | Koi pond management (3 credits)** |
| 420655969 | Water Quality Management and Koi Cultivation Filtration Systems (3 credits)** |
| 420655970 | Koi Nutrition and Feed Management (3 credits)** |
| 420655971 | Koi Health Management (3 credits)** |
| 420655972 | Koi hatchery management and technology (3 credits)** |
| 420655973 | Koi rearing management and technology (3 credits)** |
| **Semester 7** | |
| 510651260 | Community Service Program |

| | |
|---|---|
| 510651263 | Business Incubation |
| 510651262 | Business planning and analysis |
| 510651264 | Digital Marketing |
| 510651258 | PKL |
| 420656166 | Internship Biosecurity applications Industry (2 credits)** |
| 420656167 | Internship in land preparation industry and vaname shrimp cultivation media (2 credits)** |
| 420656168 | internship Hatchery industry and quality of fry (3 credits)** |
| 420656171 | Industry internship in vaname shrimp rearing techniques (3 credits)** |
| 420656169 | Feed management technology industry internship (3 credits)** |
| 420656170 | Industrial internship in fry distribution and harvesting techniques (2 credits)** |
| 420656172 | Disease prevention and treatment industry internship (2 credits)** |
| 420656173 | Koi Breeding industry internship (2 credits)** |
| 420656174 | Filtration technology industry internship (2 credits)** |
| 420656175 | Koi rearing industry internship (3 credits)** |
| 420656176 | Koi health and disease management industry internship (2 credits)** |
| 420656177 | Feed management industry internship (2 credits)** |
| 420656178 | Koi quarantine engineering industry internship (2 credits)** |
| 420656179 | Koi marketing strategy (2 credits)** |
| | **Semester 8** |
| 310652555 | Seminar |
| 510652666 | Thesis |
| | **Colloquium** |
| | **Bachelor's Thesis** |

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|---|---|
| ***L:*** | ***Lecture*** |
| ***S:*** | ***Seminar/Presentation/Discussion*** |
| ***T:*** | ***Tutorial*** |
| ***M:*** | ***Mini Project*** |
| ***F:*** | ***Field Study*** |
| ***P:*** | ***Field Practice*** |
| ***** | ***Elective Course*** |
| ****** | ***COE*** |

The following curriculum is presented for the Bachelor's Degree Programme Forestry:

| | Semester 1 |
|---|---|
| 110320189 | Indonesian Language |
| 110321159 | Civic |
| 110321729 | Pancasila |
| 120325726 | Faith and Humanity |
| 210320251 | Biology |
| 210320638 | Physics |
| 210321168 | Chemistry |
| 210321482 | Mathematics |
| 210325835 | Productive Skills of FLSP |
| 220326354 | Innovative Agrocomplex |
| | **Semester 2** |
| 120325727 | Aqidah and Worships |
| 110325836 | English Proficiency Test Preparation Course (FLSP 2) |
| 210320367 | Dendrology |
| 210320680 | Forest Genetics |
| 210320943 | Forestry Soil Science |
| 210321162 | Enterpreneurship |
| 210321195 | Climatology |
| 210322607 | Silvology |
| 210324728 | Forestry Statistics |
| | **Semester 3** |

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|---|---|
| 110320101 | Environmental Impact Analysis |
| 210320407 | Forest Ecology |
| 210320467 | Forest Resource Ecomony |
| 210320970 | Forest Inventore |
| 210321151 | Soil Fertility and Fertilization |
| 210322177 | Forest Protection |
| 220323777 | Forestry Counseling |
| 210324726 | Basic Properties of Wood |
| | **Semester 4** |
| 210321642 | Forest Microbiology |
| 210322608 | Silviculture |
| 210324724 | Geomatics and Forestry Geographic Information System |
| 210324725 | Wildlife Management |
| 210324729 | Forest Planning |
| 210325106 | Non-Wood Forest Product |
| 510320666 | Tree Physiology |
| | **Semester 5** |
| 110321074 | Muhammadiyah |
| 210320011 | Agroforestry |
| 210321053 | Forest Policy |
| 210321765 | Forest Product Harvesting |
| 210323776 | Ecotourism |
| 210324731 | Forest Resource Conservation |
| 220325107 | Applied Silviculture Techniques |
| 510321573 | Scientific Research Methodology |

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| | **Semester 6** |
| 110325728 | Islam, Science and Technology |
| 210320271 | Forest Biotechnology |
| 210321332 | Forest Management |
| 210322483 | Experimental Design |
| 210323779 | Watershed Management |
| 210324732 | Forest Product Proccessing |
| 210326382 | Business Incubation |
| 320324733 | Wildlife Research and Management |
| 310322033 | Waste Management* |
| 310326153 | Selection of Seedlings and Seeds of Essential Plants** |
| 310326156 | Oil Distillation Techniques** |
| 310326387 | Essential Plant Harvesting** |
| 310326388 | Essential Plant Treatment** |
| 310326389 | Oil Extraction Technique** |
| 310326390 | Distillery Maintenance** |
| 310326391 | Market and Marketing Potential* |
| 310326392 | Derivative Product Processing* |
| | **Semester 7** |
| 210324734 | Forestry General Practice |
| 310326393 | Nursery, Selection, and Harvesting of Essential Plants Internship** |
| 310326394 | Essential Oil Refining and Extracting Internship** |
| 310326395 | Tool Operation Internship** |
| 310326396 | Essential Oil Marketing and Market Potential Internship** |
| 310326397 | Derivative Product Processing and Waste Treatment Internship** |
| 410321303 | Internship |
| 510321260 | Community Service |
| | **Bachelor's Thesis** |

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