ASIIN Seal
Accreditation Report

Bachelor's Degree Programmes
Forestry
Agricultural Product Technology
Agroecotechnology

Master's Degree Programme
Forestry

PhD Programme
Forestry

Provided by
Universitas Mulawarman

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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]
Program Studi Kehutanan Program Sarjana	Bachelor Program in Forestry	ASIIN	-	08
Program Studi Teknologi Hasil Pertanian Program Sarjana	Bachelor Program in Agricultural Product Technology	ASIIN	-	08
Program Studi Agroekoteknologi Program Sarjana	Bachelor Program in Agroecotechnology	ASIIN	-	08
Program Studi Kehutanan Program Magister	Master Program in Forestry	ASIIN	-	08
Program Studi Kehutanan Program Doktor	Doctoral Program in Forestry	ASIIN	-	08
Date of the contract: 17.11.2023 **Submission of the final version of the self-assessment report:** 05.04.2024 **Date of the onsite visit:** 06.11.2024 **at:** Gunung Kelua campus				
Expert panel: Prof. Dr. Jürgen Pretzsch, Dresden University of Technology Prof. Dr. Hans-Peter Piorr, Eberswalde University for Sustainable Development Dr. Forst. Bambang Irawan, S.P., M.Sc. IPU, Universitas Jambi				

[1] ASIIN Seal for degree programmes.

[2] TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 03 - Civil Engineering, Geodesy and Architecture; TC 04 - Informatics/Computer Science; TC 05 - Materials Science, Physical Technologies; TC 06 - Engineering and Management, Economics; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Forestry, Food Sciences, and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics; TC 14 - Medicine.

Almansyah Sinatrya, Universal PT Tempu Rejo (Leaf Tobacco Company) Andini Maya Sari, Student at Universitas Muhammadiyah Malang	
Representative of the ASIIN headquarter: Dr. Natalia Vega	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture as of March 27, 2015 ASIIN Additional Criteria for Structured Doctoral Programmes as of March 15, 2021	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corres-ponding level of the EQF[3]	d) Mode of Study	e) Dou-ble/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor Program in Forestry	Sarjana Kehutanan / Bachelor of Forestry (S.Hut.)	Forestry	6	Full time	-	8 Semester	144 SKS / 230 ECTS	2023
Bachelor Program in Agricultural Product Technology	Sarjana Teknologi Pertanian / Bachelor of Agricultural Technology (S.T.P.)	Agriculture	6	Full time	-	8 Semester	144 SKS / 230 ECTS	2023
Bachelor Program in Agroecotech-nology	Sarjana Pertanian / Bachelor of Agriculture (S.P.)	Agriculture	6	Full time	-	8 semester	144 SKS / 230 ECTS	2023
Master Program in Forestry	Magister Kehutanan / Master of Forestry (M.Hut.)	Forestry	7	Full time	-	4 semester	36 SKS / 58 ECTS	2023
Doctoral Program in Forestry	Doktor Kehutanan / Doctor of Forestry (Dr.Hut.)	Forestry	8	Full time	-	6 semester	42 SKS / 67 ECTS	2023

Universitas Mulawarman (UNMUL) is a state university located in Samarinda, a city in the eastern part of the Indonesian island of Kalimantan. It is the oldest and largest higher education institution in East Kalimantan, having been established on 7 June 1962. Its main campus is located in Gunung Kelua. Other campuses are located in Pahlawan Road, Banggeris Street and Flores Street in Samarinda. At present, UNMUL has 13 faculties offering 92 programmes of study. It has approximately 35,000 enrolled students.

The Faculty of Agriculture is one of the first faculties established in 1962. Initially, it was merged with Faculty of Forestry. In 1967, two independent faculties were developed. The Faculty of Agriculture has, currently, five study programmes: the undergraduate

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

programmes Agroecotechnology, Agricultural product Technology, Animal Husbandry and Agribusiness, the Masters study Program in Wet Tropical Agriculture and the Doctoral Study Program in Agricultural Sciences.

The Faculty of Forestry was established at Mulawarman University to respond to the abundant forest resources found in East Kalimantan Province, including North Kalimantan Province. With more than 12 million hectares of forest in both provinces, human resources capable of managing and utilising the various forest potentials, both timber and non-timber, are needed. The faculty offers three programmes in Forestry, respectively one on undergraduate, masters and PhD level.

For the **Bachelor's degree programme in Forestry (BPF)** the institution has presented the following profile in its website:

Vision

"To become a leading study program to produce professional graduates who play an active role in the management of tropical humid forest environments and national development.

Mission

1. Organizing quality higher education by continuously improving and developing research and community service;
2. Realizing good governance in higher education;
3. Producing graduates who have high competence and integrity in the field of forestry and the environment;
4. Carrying out active cooperation with all parties in the management of humid tropical forest environments;
5. Improving the quality of academic community resources;
6. Providing professional services in forestry and environmental development".

For the **Master's degree programme in Forestry (MPF)** the institution has presented the following profile in its website:

Vision of Science

"Developing quality and highly competitive knowledge and research in the forestry sector through research and community service to support the maximization and preservation of the benefits of tropical rainforests".

Mission

1. Implementing education with a curriculum that is in accordance with the development of tropical forestry.
2. Educating experts at the master's level in forestry.
3. Developing new knowledge from tropical forestry research results.
4. Conducting cooperation in the field of education and tropical forest research with other parties in order to support the development of the forestry sector".

For the **PhD programme in Forestry (DPF)** the institution has presented the following profile in its website:

Vision

"To become a study program that has competitive advantages in the development of science and sustainable management of humid tropical forests.

The Vision Statement above can be explained in more detail as follows:

Competitive advantage: Advantage obtained through superior characteristics and resources so that it can produce better performance and be able to compete with other institutions.

Sustainable management of humid tropical forests: sustainable management of humid tropical forests with support for ecological systems, balanced and fair opportunities for all people and distribution and efficiency in resource allocation to achieve better quality.

Mission

1. Organizing higher education based on research to produce graduates with superior character and understanding of science and technology in the field of forestry, especially humid tropical forests and their environment;
2. Produce, develop and apply new knowledge based on research results in order to support sustainable forestry development;
3. Improving academic and research collaboration with various parties, both domestic and international".

For the **Bachelor's degree programme in Agricultural Product Technology (BPAPT)** the institution has presented the following profile in its website:

VISION

The Bachelor programme Agricultural Product Technology (BPAPT) is a "Center for Resource Management and Development of Science in the Field of Superior Agricultural Product Technology with Characteristics of the Humid Tropics.

MISSION

1. Managing Institutional, Human, and Facility Resources to Improve the Quality of Students, Graduates, Lecturers, and Expand Partnerships
2. Conducting Research and Community Service to Develop Agricultural Science and Technology that is Beneficial to the Community and Supports Curriculum Development
3. Increasing Output Productivity and Impact in the Field of Agricultural Product Technology that Has Competitive Advantages Referring to the Thematic Characteristics of the Humid Tropics".

For the **Bachelor's degree programme in Agroecotechnology (BPA)** the institution has presented the following profile in its website:

"The Agroecotechnology study program is a combination of three study programs, namely Agronomy, Soil Science, and Plant Pest and Disease Science".

Vision

"The vision of the Agroecotechnology Department/Study Program is to be a center for education and development of science and technology (IPTEK) that excels in the field of sustainable agriculture with the characteristics of wet tropics".

Mission

1. Organizing higher education in the field of sustainable agriculture with tropical wet characteristics.
2. Developing science and technology in the field of sustainable agriculture through relevant and quality research.
3. Carrying out community service and devotion in the agricultural sector based on the utilization of research results and the application of appropriate technology".

C Expert Report for the ASIIN Seal

1. The Degree Programme: Concept, Content & Implementation

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

Evidence:

- Self-Assessment Report (SAR)
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Relationship Matrix between ASIIN SSC-08 and Expected Learning Outcomes for each degree programme
- Relationship between Expected Learning Outcomes and Courses
- Curriculum document
- Module Handbook for each programme
- Documentation of Socialization and Meetings for the Formulation of Strategic Goals and Learning Outcomes
- Material for Periodic Meetings at the Beginning of the Semester between Lecturers and Staff
- Study Program Communication with Lecturers
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The experts refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committee 8 (Agriculture, Forestry, Food Sciences and Landscape Architecture), the learning-module-matrices, and the module handbook for each degree programme as a basis for judging whether the intended learning outcomes of the degree programmes under review correspond with the competences as outlined by the SSC.

The Learning Outcomes for each programme are described in the SAR (see below Appendix) as well as in the University's Website and for each module in the module handbooks.

According to the SAR, graduates of the Bachelor's Degree Programme in Forestry (BPF) will be able to enter various fields of work, such as technical personnel, e.g. involved in improving the role and function of forests, analysts, extension officers, e.g. assisting communities in conserving forests, and in the field of forestry entrepreneurship. They also have the opportunity to continue with the Master's and PhD programmes in Forestry. The Master's Degree Programme in Forestry (MPF) is designed to produce lecturers or instructors in forestry and environmental education and training institutions, or teachers in forestry and environmental vocational schools, as well as researchers in forestry and environmental fields. In addition, graduates of this programme will be able to become key forestry and environmental technical staff, forestry and environmental professionals (entrepreneurs, managers and consultants) and policy makers in the forestry and environmental sector. Holders of a PhD in Forestry are qualified to work in research and teaching at university or research centres. They can also become consultants and entrepreneurs, developing various innovations and diversification of forest-based products and creating jobs for the community. Doctoral graduates can also work as policy-makers in the field of forestry and the environment at national and international level.

The Bachelor's Degree Programme in Agricultural Product Technology (BPAPT) aims to produce graduates who are strengthened in research and development of humid tropical natural resources. They are qualified to become academics, educators and researchers, bureaucrats, industrial practitioners and entrepreneurs in the field of Agricultural Product Technology.

The Bachelor's Degree in Agroecotechnology (BPA) prepares students to become farmers, industrialists, entrepreneurs, extension workers and consultants with the ability to apply science and technology in a holistic way to humid tropical agriculture. They will also be future laboratory officers, laboratory assistants, high school teachers, or could continue on to an MSc. They have the opportunity to become researchers in government and private institutions who can think analytically in identifying and formulating problems and finding solutions based on agricultural science.

As stated by the University, the objectives and learning outcomes of all programmes are developed in accordance with the vision and mission of Mulawarman University and the respective faculties. In addition, input from both internal (academic staff, lecturers and students) and external stakeholders (alumni and stakeholder partners as graduate users) was taken into account in formulating them. The programme coordinators and lecturers explain that the PLOs are regularly updated at the same time as the curricula are updated, through which the achievement of the learning outcomes is assessed. There are regular meetings for all faculty members, annual management review meetings and faculty discussion groups. Industry representatives also confirm their involvement in programme

development. The profile for each programme is reviewed by industry representatives and there is a questionnaire for industry partners on the quality of the programmes.

The Program objectives in the curriculum are regularly evaluated by program studies. This evaluation is conducted every year through tracer studies under coordination of the Study Program Coordinator. The tracer study aims to track graduates. It is carried out 2 years after graduation and aims to determine educational outcomes in the form of transition from higher education to the work environment.

For instance, based on the results of tracer studies carried out by UNMUL, 73% of the graduates of **BPF** get a job within a waiting period of less than 6 months. Those with a waiting period between 6 to 10 months are 20% and those with a waiting period exceeding 18 months are 6%. The suitability of the job field obtained by graduates obtained over the three years from 2016 to 2018 was also assessed. The data shows that the results of job placements that match the background of forestry science and have a high relationship reach 35%, those with moderate relevance are 57% and only 7% for those with low relevance.

For the **BPA**, the results of the graduate tracer study show that the profile of graduates is 59% as practitioners, 8% as academics and 4% as researchers, and 29% have a job that does not match the profile of the programme graduates. Furthermore, the waiting time for graduates to get their first job is 42.2% 0 months, 42.2% less than 6 months, 8.1% 6-12 months, 3% 12-18 months and 4.4% 18-24 months after graduation. The amount of alumni's monthly income in 2024, as much as 26% earn over 5 million rupiah, 37% earn 3.3-5 million rupiah and another 37% earn less than 3.3 million rupiah. In 2024, the regional minimum wage for the province of East Kalimantan is set at 3.3 million rupiah.

During the site visit, the rectorate representatives and programme coordinators emphasised that the study and research in forestry and agriculture are very important for East Kalimantan, especially topics related to tropical forest and agriculture in humid tropics. Scientific research in this area should be improved. They explain that Kalimantan focuses on palm oil production. The experts ask if the programmes focus on traditional or modern farming methods and/or digitalisation of agriculture/forestry. The programme coordinators explain that there is a combination of traditional and modern agriculture/forestry. Some courses support high technology skills for students, such as drones, GIS, biotechnology. They emphasise that the aim is also to help local farmers improve their farming methods, for example by improving fertilisation, as part of the students' projects.

The representatives from the industry respond favourably to the experts' suggestion to establish an advisory board consisting of external parties, especially from industry and

other stakeholders. They perceive the establishment of a fixed advisory group that provides feedback to the university from an industry perspective as well as from small scale farmers or medium-sized enterprises to be a valuable contribution to the advancement of the programmes.

The experts reached the conclusion, based on the documents provided by the university and discussions held with various stakeholders, that all of the programmes under review are relevant for regional development in East Kalimantan. Furthermore, the team expressed appreciation for the close relation and exchange between the programmes and the industry as well as external stakeholders.

However, the experts are of the opinion that the PLOs of all programmes are formulated in a too general manner and thus require a review and a more specific formulation in accordance with the contents of each programme. Furthermore, the PLOs must be standardised in all documents (website, diploma supplement, curriculum document etc.). Additionally, the learning outcomes formulated for each module must be reviewed and have a consistent structure. It would also be beneficial, according to the experts, to establish an advisory board consisting of external parties, especially from industry and other stakeholders such as small scale farmers or medium-sized enterprises. They should meet regularly to discuss the needs of the job market, how the degree programmes can be further developed and what subjects are of special importance for the necessary future transformation of rural development of Kalimantan, taking in account the rapid destruction and site degradation in many places.

Criterion 1.2 Name of the Degree Programme

Evidence:

- Self-Assessment Report (SAR)
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Decree of the Directorate General of Higher Education, Research, and Technology Number 163/E/KPT/2022 on Study Program Name in Academic and Vocational Education
- Minister of Education and Culture Decree No. 036/U/1993
- Minister of National Education Decree No. 178/U/2001
- Minister of Education, Culture, Research and Technology Decree No. 6/2022

- Module Handbook for each programme
- Discussions during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR provided by UNMUL, the name of the degree programmes is in accordance with the Decree of the Directorate General of Higher Education, Research, and Technology Number 163/E/KPT/2022 on Study Program Name in Academic and Vocational Education and the established terminology used by the subject-specific community.

For BPF is awarded the degree Sarjana Kehutanan / Bachelor of Forestry (S.Hut.), for BPAT Sarjana Teknologi Pertanian / Bachelor of Agricultural Technology (S.T.P.), for BPA Sarjana Pertanian / Bachelor of Agriculture (S.P.), for MPF Magister Kehutanan / Master of Forestry (M.Hut.) and for DPF Doktor Kehutanan / Doctor of Forestry (Dr.Hut.). The nomenclature for each programme at Mulawarman University is officially recorded at the Directorate of Higher Education, regulated in accordance with Minister of Education and Culture Decree No. 036/U/1993, Minister of National Education Decree No. 178/U/2001 and Minister of Education, Culture, Research and Technology Decree No. 6/2022.

The experts believe that the names of the degree programmes under review reflect the intended objectives and learning outcomes as well as the content included in the curriculum of each programme. The designation (both in the original language and in English) is used consistently in all relevant documents.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report (SAR)
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Relationship Matrix between ASIIN SSC-08 and Expected Learning Outcomes for each degree programme
- Relationship between Expected Learning Outcomes and Courses
- Curriculum document
- Guideline For Implementing Student Field Work Practice
- Guideline Of Student Community Service Program And Equivalence Activity Program

- Module Handbook for each programme
- Cooperation Agreements
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Content and structure of the programmes

The undergraduate programmes under review last eight semesters and comprise 230 ECTS (144 SKS), upon completion of which graduates are awarded a Bachelor's degree. All programmes include in the first year national mandatory courses such as “Pancasila”, “Citizenship”, “Religious Education, “Indonesian Language” etc. In addition, all programmes implement the student community service programme (KKN) for fourth year students. It lasts approximately one month. In this programme, students apply the knowledge and skills they have acquired in each course in the previous semester. This programme allows students to improve their interpersonal skills such as communication, leadership, teamwork and their ability to solve real-world problems. During their stay, they are required to solve local community problems using their theoretical background. At the end of the programme, students are required to write a report and undergo a final evaluation of the Community Service Programme.

The “Field practical work” or internship allows students to apply their knowledge to the community, participate in solving real-world problems, and gain experience interacting with their future workplaces. This programme is not compulsory. Students will be supervised by a designated faculty member and a field instructor from the program, institution, or industry. They are assessed and required to report on the outcomes of their internship. Company representatives are also involved in this evaluation process. In order to maintain the quality of the field placement, the programme sets a minimum number of hours of student work equivalent to course credits.

Once the course requirements have been met over approximately 7 terms, the final year project can be undertaken in the final term. Students can select different types of projects for their final year project and report on their projects in the form of a bachelor's thesis.

The **Bachelors Degree Programme in Forestry (BPF)** curriculum was designed in 2019 and is the result of workshops that took into account various aspects, including labour market needs, the Indonesian National Qualifications Framework (KKNI), and the Basic Scientific Pattern (PIP) of Mulawarman University, focusing on tropical moist forests and their environment. In 2020, the Independent Learning Campus (Kampus Merdeka) programme was implemented. The curriculum of **BPF** includes basic forestry courses in the first two

years. From the fifth semester onwards, students choose one of the following four areas of specialisation: Forest Management, Silviculture, Forest Products Technology, and Forest Resource Conservation and Ecotourism. In the fifth and/or sixth semester, depending on the chosen specialisation, there are also included compulsory and specialisation electives. The last year is dedicated to the final research project ("proposal Seminar", "results seminar", "final exam") and to the field work practice (PKL) and KKN (student Community Service Program).

The **Bachelors Programme in Agricultural Product Technology (BPAPT)** courses in agronomy, soil science and plant diseases and pests. According to the curriculum overview, the internship is carried out in the fifth semester, the sixth and seventh semesters include the module Thesis Assistance I and II respectively. The Community Service Programme (KKN) the thesis is included in the seventh semester. MBKM (Free Form 2-20 SKS) can be, apparently, carried out in the sixth and/or seventh semester. However, there is no explanation about that. In addition, the experts could not find information about the modules included in the eight semester. A long list of electives which are offered in odd or even semesters was also provided, but it is not clear how many electives / credits for electives students are allowed to choose per semester and/or how the electives are distributed.

In **Bachelors Programme in Agroecotechnology (BPA)** includes courses to basic knowledge in agriculture, agricultural cultivation, agronomy, soil science and crop protection. The last year comprises internship, community service, one seminar (MBKM) and thesis. The implementation of the Independent Learning Independent Campus (MBKM) policy in the BPAPT is in the form of 1) studying outside the study program at the same university, 2) studying in the same study program outside Mulawarman University, 3) studying in a different study program outside Mulawarman University, and 4) studying outside the university, namely in the business and industrial world or institutions outside the university. Scheme 1 can be done by students in semesters IV, V, and VI, schemes 2 and 3 can only be done by students in semesters V and VI, while scheme 4 can be done by students in semesters VI and VII.

The **Masters Programme in Forestry (MPF)** lasts for four semesters, consists of advanced modules in the field of tropical forestry and offers compulsory elective courses in areas such as forest and nature conservation, tropical silviculture, forest management and forest products technology. In addition, students can also choose specialisation electives. There is a pre-semester ("matriculation") for graduates from other disciplines to learn some basic forestry topics. According to the curriculum overview provided by the university after the audit, the programme consists of two tracks, the regular track and the by research track. The difference between the two programmes is that the by research programme focuses

on research work. For example, the second and third semesters consist entirely of research seminars. Both tracks include in the last semester the courses of scientific publication and thesis examination. The regular programme also includes the module “research result seminar”.

The **Doctoral Programme in Forestry (DPF)** also has two tracks option, the regular and the by research track. The second and third semester of both tracks, include the modules Colloquium I and II, and the last three semesters the modules “Indexed reputable international journal publications”, “closed exam” and dissertation. The by research track includes two modules more for the last three semesters. While the regular track includes in the first semester the module “Science Philosophy” and elective modules permitting specialization in the first year, the by research programme comprises more modules about research methods and publication. There is a pre-semester ("matriculation") for graduates from other disciplines to learn some basic forestry topics. However, the curriculum structure, course organization and the module handbook of **DPF** need to be reviewed and reformulates in a consistent way and conforming to standards, also documenting clearly both tracks (regular or by research). Measurable indicators are not outlined for the two different tracks. Minimum requirements for the thesis and other exam components need to be defined. The modules and workload per semester need to be specified.

The industry representatives express during the discussions their satisfaction with the trainees from the bachelor programmes. In most cases, they invite the trainees to continue working in the companies. However, they feel that soft skills such as management and communication skills need to be improved. In addition, they explain that the internship sometimes lasts a month and sometimes it can be longer. Nevertheless, they consider that the duration of the placement should be at least two months. The students interviewed are very satisfied with the programmes under review and believe that the programmes prepare them for good career opportunities. Nevertheless, they agree that more training of soft skill would be convenient for them.

The internship programme is the final academic activity of undergraduate programmes in UNMUL through collaboration with various institutions such as stakeholders, government and private institutions. Internship is one of the Independent Learning activities as stated in Academic Regulation No. 17/2020 Article 117 Paragraphs 2 to 4. Students who are able to carry out independent learning have at least been in the fourth semester and obtained 60 SKS (96 ECTS). They also have a minimum GPA of 3.0 without a quality letter E.

With regard to the internship, the experts wonder about the organisation of the time between the internship and the community service in the undergraduate programmes studied. The programme coordinators explain that there is a minimum of one month for

community service. It is possible to combine internships and community service, for a maximum total of two months. For the agricultural internship, students can choose between a company and a farm. The university cooperates with various organisations and companies, such as the Association of Palm Oil of Indonesia, the Agriculture Office in Kalimantan. Usually, they are looking for partners who will support most of the students, for example with transport costs or even accommodation. The industry representatives confirm this information. Usually, there is an agreement between the student and the company. They take over the costs for the students as far as possible and give them incentives. After the internship, the representatives from the industry give feedback to the university and each student gives a presentation.

Based on the feedback from the industry representatives during the visit, the experts conclude that more soft skills such as entrepreneurship, leadership, communication and teamwork should be developed in the courses. This could be a project-based subject with measurable soft skill assessments or even sessions led by industry practitioners. The experts are of the opinion that one month is not enough for the internship programme. It was also confirmed by students and users. The duration and structure of the placements need to be better regulated by the university with a clear and appropriate timeframe.

In summary, the experts are satisfied with the contents of the curricula of all the programmes and believe that these enable students to achieve the intended learning outcomes. They also see that the electives offered in both programmes provide opportunities for individual focus and study. Nevertheless, the experts are of the opinion that the curriculum overview for each programme needs to be revised to show clearly the structure (compulsory and elective courses) and the correct workload. .This is best achieved in tabular overviews. Elective options are difficult to follow from the point of view of workflow and systemic module interrelations. The curricular structure for all programmes needs to be reviewed, standardised and presented more clearly. It must also be consistent with the module handbook. The curriculum should make it clear which courses are optional and which are compulsory, and a list of all optional courses offered should be provided. In addition, the curriculum should explain or show how many electives or how many credits for the electives students have to choose. The workload of each module and the total workload required per semester must be specified and presented transparently in all documents. An overall workload scheme for all programmes, including compulsory and elective courses, must be established and clearly documented (see **1.5** below). In addition, the learning outcomes for each module in the module handbook should also be reformulated in a concrete and clear way.

Moreover, the experts note that the curriculum of the programmes under review consists of a long list of modules which usually are very small with mostly 3.2 ECTS. Therefore, they

consider that the large number of modules should be reduced by increasing the module size. In this revision, the interdisciplinary relationships should also be taken into account.

Periodic Review of the Curriculum

According to the SAR, the curriculum is evaluated every five years to ensure consistency and meet stakeholder requirements. This evaluation assesses learning outcomes in line with market needs and expectations. If urgent improvements are needed, evaluations may be more frequent. The curriculum is developed with input from stakeholders and alumni. Modules are assessed for effectiveness and adjusted as necessary to ensure alignment with the programme's objectives. Continuous improvement mechanisms evaluate the programme's effectiveness. Regular data analysis monitors student progress and identifies patterns or challenges. Academic advisors and the curriculum team work together to make improvements. This ensures that the programme supports timely student progression and successful completion.

UNMUL present following data to graduate rate:

Program	**Number of Graduates**		
	2021	**2022**	**2023**
BPF	126	161	204
BPAPT	39	53	107
BPA	62	90	94
MPF	1	1	13
DPF	14	11	4
Program	Average Grade		
	2021	2022	2023
BPF	2.94	3.08	3.16
BPAPT	3.01	3.20	3.32
BPA	3.26	3.41	3.45
MPF	3.89	3.86	3.85
DPF	3.91	3.96	3.85

Program	**Number of Graduates**		
	2021	**2022**	**2023**
Program	Average Study Duration		
	2021	2022	2023
BPF	5 years 9 months	5 years 7 months	5 years 5 months
BPAPT	6 years 1 months	5 years 8 months	5 years 4 months
BPA	5 years 2 months	5 years 6 months	5 years 7 months
MPF	2 years 6 months	2 years 10 months	3 years 6 months
DPF	6 years 5 months	5 years 7 months	6 years 8 months

On the basis of these data, the experts conclude that students need longer than the standard period of study to complete their studies. The study period is extended by about two

years. For the DPF in particular, it is noteworthy that students take more than twice as long to graduate. In addition, the number of doctoral students is very low (see below **1.5**).

The experts appreciate that the curriculum is regularly reviewed. However, they conclude that the programmes under review should analyse the reasons for the increase in the length of study and develop measures to reduce this (see also below **Criterion 5**). Possibly a more intensive and individual supervision of the students during their study period would make sense. As regards the **DPF**, the feasibility of the doctoral programme in terms of the number of doctoral candidates and graduation rates should be examined and a strategy should be developed to ensure the sustainability of the programme.

Student mobility

As stated in the SAR, students can participate in individual mobility windows such as conferences, seminars, workshops, summer schools and internships. The institution offers academic support, flexible scheduling options and personalised guidance to help students overcome obstacles and stay on track. The following tables show the student mobility statistics for each programme, both internationally and nationally:

Program	Student mobility (International) (Appendix 1.3.15. and Appendix 1.3.16.)					
	Inbound			Outbound		
	~2021	2022	2023	~2021	2022	2023
BPF		10	10	9	14	7
BPAPT	6		28			
BPA			28			1
MPF				2	1	5
DPF			2			

Program	Student mobility (National / MBKM) (Appendix 1.3.17. and Appendix 1.3.18.)					
	Inbound			Outbound		
	~2021	2022	2023	~2021	2022	2023
BPF	49	6	29			
BPAPT	21	23	2	7	4	6
BPA			3	4	6	8
MPF						1
DPF						2

The university management emphasises during the visit that internationalisation and student mobility are important objectives of UNMUL. There are also various government scholarship programmes for going abroad, e.g. for Masters and PhD studies. There is also cooperation with international NGOs and some agreements with universities and institutions around the world. The Faculty of Forestry and the Faculty of Agriculture have established research and educational collaborations with various domestic and foreign

universities such as Tokyo University, Twente University, University of Malaysia Sabah, Yamagata University, Chulalongkorn University, Leiden University, Manitoba University and Wageningen University, University of Sabah, University of Okayama etc. to provide opportunities for staff and lecturers to expand international networks and the opportunity to undertake further studies to improve the knowledge they already have.

The university management believes that a barrier to student mobility is the students' English language skills. The experts learn that some measures were already taken by UNMUL to improve international student exchange, for example, students in student bodies as ambassadors for internationalization, Forestry English club, “French corner”, English day etc. The university would also like to increase the number of lecturers from international universities.

In terms of incoming students, UNMUL reports that ten students from Timor-Leste were admitted to the BPF through a collaboration between the Faculty of Forestry and the Timor-Leste Embassy. In addition, one student from Ethiopia was admitted to the PhD programme in 2023.

However, based on the data, the experts conclude that the academic mobility of students and teachers is rather low and should be better promoted and supported, including financially. The number of international collaborations and scholarships should be increased and students should be encouraged to spend some time abroad. Additional courses in English should be provided.

Criterion 1.4 Admission Requirements

Evidence:

- Self-Assessment Report (SAR)
- Module Handbooks
- Admission regulations
- Academic Guidance
- Documents containing provisions for the recognition of externally acquired academic achievements
- University website: https://unmul.ac.id
- Discussions during the audit

Preliminary assessment and analysis of the experts:

General requirements for prospective UNMUL students are regulated according to the Regulation of Rector of UNMUL No. 17 of 2020. University Admission requirements for national students involve meeting academic qualification criteria and taking standardized national exams. According to the Self-Assessment Report, admission procedures and policies for new students follow the national regulations in Indonesia. The requirements, schedule, registration venue, and selection test are announced on UNMUL's webpage and thus accessible for all stakeholders.

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

1. National Entrance Selection of State Universities (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during the high school with a minimum quota of 20%.
2. Joint Entrance Selection of State Universities (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national computer-based selection written test is held every year for university candidates. It is a nationwide online test. It has a minimum quota of 40%.
3. Independent Selection for State University Admission (SMMPTN), students are selected based on a test specifically held by UNMUL (with a maximum quota of 30%).for prospective students that haven not been accepted through SNMPTN or SBMPTN
4. Special and Merit-Based Admission Selection, through this programme, gifted and talented students (e.g. by winning national competitions in sports or arts) can be admitted.
5. Transfer Programme for students that have begun their studies at another university and now want to transfer o UNMUL.

The entrance requirements are prepared by the universities and then forwarded to the National Testing Agency for State Universities to be accessible to all SNMPTN and SBMPTN applicants.

For postgraduate students, interviews are also conducted. In addition, candidates for the undergraduate programmes have to take the TOEFL exam whose schedule is determined by the UNMUL LANGUAGE UPT, with a minimum score of 475 for Master and 525 for PhD. The admission of international students is also regulated in the Academic Regulations in Paragraph 8 Articles 30 - 32.

The average starting cohort size for the undergraduate programmes under review is 325 students for Forestry, 75 students for Agricultural Product Technology and 110 students for Agroecotechnology. For the post-graduate programmes, the average number is 9 students.

Foreign students are admitted online by the International Service Technical Implementation Unit. They are selected according to the chosen programme.

Regarding credit transfer, transfer of credits is allowed for students who have completed the third semester (≥ 36 credits with a GPA ≥ 3.00) or the fifth semester (≥ 72 credits with a GPA ≥ 3.00). Credits will be awarded for the courses taken in the original degree programme. Accepted transfer students are required to follow the curriculum requirements.

During the on-site interviews, the experts ask about the possible reasons why candidates were not accepted or excluded from the programmes. The programme coordinators explain that the programmes are open to all candidates who meet the academic requirements. In some cases, they give more time (about 6 months) to students who do not have a good command of English to prepare and retake the TOEFL test. With regard to disabled candidates, the university and teachers integrate them into the courses and consider their needs.

The Admission Rules for all programmes under review are published on the university's website and provide potential students with detailed information on the requirements and steps necessary to apply for admission to the programmes. As they are based on official regulations, the assessors consider them to be binding and transparent. They confirm that the entry requirements support students in achieving the intended learning outcomes. However, the experts note that the number of applicants and accepted students is decreasing in all programmes. Consequently, they consider that measures should be taken to reverse the decline in student applications and admissions in recent years. If this is recognized as a serious problem for the future of the study programs, it would make sense, for example, to establish a working group to find solutions (marketing, support of start up´s, innovative teaching and learning methods, introduction of alternative topics).

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report (SAR)
- Module Handbooks
- University website: https://unmul.ac.id

- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Conversion national SKS to Europe Credits (ECTS)
- Workload Survey for BPA Students 2024
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Based on Permendikbudristek No. 53 of 2023, the calculation of credit scores in one learning week is as follows: 1 credit consists of 170 minutes/week with details of 50 minutes of face-to-face learning, 60 minutes of structured assignments, and 60 minutes/week of independent learning that students must do. If calculated in time (hours/semester), a value of 1 credit equals 13.3 hours of face-to-face learning, 16.0 hours of structured assignments, and 16.0 hours/semester of independent learning, so a total of 45.3 hours/semester of learning is obtained.

The total details of the calculation of credits in one semester can be seen in the table below:

Credit	Minutes/Week (Semester)			Total Minutes/Week	Hour/Semester			Total Hour/Semester
	Meeting Class	Assignment	Self Learning		Meeting Class	Assignment	Self Learning	
1	50	60	60	**170**	13,3	16,0	16,0	**45,3**
2	100	120	120	**340**	26,7	32,0	32,0	**90,7**
3	150	180	180	**510**	40,0	48,0	48,0	**136,0**

The conversion from credits to ECTS follows the Academic Regulations of the Rector of Mulawarman University, Number 3908 of the year 2020, stipulating **one credit = 1.59 ECTS** / 28 hours / semester. That way, one credit consists of 0.48 ECTS for face-to-face learning, 0.57 structured assignments, and 0.57 independent learning, so a total of 1.59 ECTS/semester learning is obtained following the applicable regulations at Mulawarman University. The total details of the conversion of credits to ECTS can be seen in the table below:

SKS	Hour/Semester			Total Hour/Semester	ECTS			Total
	Meeting Class	Assignment	Self Learning		Meeting Class	Assignment	Self Learning	
1	13,3	16,0	16,0	**45,3**	0,48	0,57	0,57	**1,6**
2	26,7	32,0	32,0	**90,7**	0,95	1,14	1,14	**3,2**
3	40,0	48,0	48,0	**136,0**	1,43	1,71	1,71	**4,8**

Credits are awarded for each module according to its workload. This allocation is determined by the expected workload and learning outcomes associated with each module. Credits are normally awarded for all compulsory parts of the programme, including work placements. The undergraduate programmes require a minimum total student workload of 230 ECTS credits, while the master's programme requires a minimum total student workload of 58 ECTS credits. The DPF requires 67 ECTS.

According to the SAR, the process of validating student workload involves a systematic assessment that takes into account both contact hours and self-study time. This comprehensive assessment is carried out through regular monitoring and feedback mechanisms involving input from faculties and relevant stakeholders to ensure an accurate reflection of the actual workload experienced by students. Any problems or challenges identified through this process are addressed with appropriate measures. This may involve curriculum adjustments, additional support mechanisms, or modifications to ensure a balanced and manageable workload for students.

However, the experts note that 288 ECTS credits are earned by the time the **MSc in Forestry** is awarded, which seems low since a minimum of 300 ECTS credits is usually expected. The workload of the **MPF** needs to be reviewed. It needs to be monitored whether the credits awarded for each module correspond to the actual workload of the students. Furthermore, there is no difference in the number of credits awarded for the different tracks in the MPF, i.e. regular and research, although the research track seems to require more work and time. According to the overview provided by the university, both tracks have 46-48 SKS (73.6-76.8 ECTS), which contradicts the information provided in the SAR for the MPF (36 SKS / 58 ECTS). The same applies to the doctoral programme, whose two tracks have 42-44 SKS (67.2-70.4 ECTS). In addition, the credit requirements for the elective courses are not explained in a clear manner.

During the on-site interviews, the experts ask about the calculation of the workload and the duration of studies. On the basis of these data, as mentioned above (see 1.3), the experts conclude that students take longer than the standard period of study to complete their studies. The length of study is extended by about two years. For the DPF in particular, students take more than twice as long to graduate. In addition, the number of doctoral students is very low (see **1.5** below). The experts ask why the length of study is longer than the norm for all programmes and what measures have been taken by the programmes. They wonder whether the long duration of study might be caused by an inadequate workload, even though the credit volume of the MSc Forestry programme is low. A contradiction is possible here. On the other hand, as the compulsory journal publication in the MPF is ambitious and time-consuming, they wonder if this could be a reason for the long duration of the programme. The programme coordinators suggest that in the case of

the Masters and PhD programmes, the reason could be that most students work full-time alongside their studies. As a result, they need more time to complete the final project and hence more time to study. Nevertheless, the experts consider that the programmes under review should analyse the reasons for the increase in the length of study and develop measures to reduce it.

Furthermore, it is not clear from the evidence provided how workload is monitored in all programmes except the BPA programme, which provides a workload survey of BPA students carried out in 2024 and the corresponding results. The experts conclude that the ECTS credits awarded must correspond to the total workload of students and must be verified for each course under review. To this end, a method of monitoring student workload should be implemented and the structured collection of student feedback on course workload should be ensured, e.g. by including appropriate questions in the summative course evaluation surveys or separate workload survey as in BPA. A total workload scheme for all programmes, including compulsory and elective courses, needs to be established and clearly documented. This should be done in the form of a tabular overview.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report (SAR)
- Module Handbooks
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Conversion national SKS to Europe Credits (ECTS)
- Discussions during the audit

Preliminary assessment and analysis of the experts:

As stated in the SAR, all programmes under review use different teaching methods and didactic tools, as the module handbook shows. Following teaching methods are implemented:

Teaching Method	BPF	BPAPT	BPA	MPF	DPF
Lecture	v	v	v	v	v
Student Center Learning	v	v	v	v	v
Problem Based Learning	v	v	v	v	v
Project Based Learning	v	v	v	v	v
Practical Work	v	v	v	v	v
Field Observation	v	v	v	v	v
Seminar	v	v	v	v	v
Presentation	v	v	v	v	v
Group Discussion	v	v	v	v	v
Paper Writing	v	v	v	v	v
Assignment	v	v	v	v	v
Simulation	-	-	-	-	-
Case Study	v	v	v	v	v

Interactive and digital tools are frequently used in modules. The Faculty of Forestry and the Faculty of Agriculture have a digital teaching infrastructure. In order to optimise the learning experience, the programme maintains a balance between face-to-face teaching and self-study. Introduction to independent scientific work is integrated into the programme, emphasising development of critical thinking and research skills. In order to ensure sustainable effectiveness, regular evaluations are carried out to assess whether the teaching and learning methods used are consistent with and supportive of the achievement of the objectives of the programme.

The expert asks about innovative teaching methods. They use a student-centred approach and encourage discussion. It depends on the semester and the subject. In higher semesters, students write papers and make presentations on their dissertations. Most lecturers believe students should be active in class, participate, and give presentations. Some use videos from YouTube or similar platforms for practical subjects. Teachers collaborate on didactics and methods.

The experts commend the diversity of teaching methods and the extensive range of practical courses in the study programmes under review. They are of the opinion that these ensure the achievement of the course objectives and the overall intended learning outcomes.

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

With regard to programme objectives and learning outcomes, UNMUL provides revised and updated PLOs. In all documents, including the Diploma Supplement, the PLOs are harmonised. The learning outcomes for the modules have also been revised. According to

the experts, the PLOS are formulated better and documented. The experts are satisfies with this. However, the wording of the PLOs and the presentation on the module should be improved. In general, all documents should be written in English. This is also important for academic international exchanges.

In terms of the curriculum review for each programme, the University provides a new overview that includes the total workload. A list of electives is also given. For **BPF, BPA and BPAPT**, the experts are of the opinion that the curriculum overview is now clear and contains all the necessary information. For the **MPF and DPF**, there is now a distinction between the two tracks offered (by course and by research). Nevertheless, a specific and transparent overview of the two tracks) for **MPF and DPF** is still missing. A better transparency of the choice between research and course-based programmes is still required.

In addition, UNMUL's response states that structured student feedback on course workload is collected through summative course evaluation surveys and separate workload surveys. The results are analysed and published on the university's website to ensure transparency and continuous improvement. The University provides a sample of the workload surveys and states that student workload is monitored annually. The University provides the results of the workload surveys and the resulting statistics and/or a workload assessment report for each programme. Moreover, the university states that the final review of the MPF workload results in 56 SCU (89.6 ECTS) for both courses instead of the 288 ECTS previously assigned based on previous regulations. For the doctoral programme, the student workload has also been adjusted to 70 SCU (112 ECTS) for both tracks, regular and research programme. The University states that the credits awarded for each module correspond to the actual workload of the students and are consistent in all legal documents, such as the website and curriculum documents. In summary, the experts conclude that the actual student workload is systematically monitored and that the requirements are met. However, they consider that it is necessary to use the results of the workload surveys to adjust the workload accordingly and to provide evidence of the follow-up of the workload monitoring, especially for the two tracks in the **MPF and DPF**, since the research track, as stated by the university, requires more work and time.

Furthermore, the experts appreciate that their recommendation to set up an advisory board consisting of external parties was taken into account and immediately implemented and established.

With regard to soft skills, the university provides examples and evidence of modules that include soft skills (entrepreneurship, leadership, communication and teamwork). The

experts consider that all programmes provide sufficient training in soft skills and that there was no further need for this recommendation.

In addition, concerning the internship, UNMUL provides a table which shows a comparison of Practical Work (PKL), Community Service (KKN), and MBKM Internship Program at the university. The university explains that the activities involve 8–10 hours of weekly fieldwork, amounting to 128–160 hours over a semester which means a minimum of 16 working days (approximately 3 weeks) and 20 working days (around 1 month), with potential extensions due to company orientation or evaluation periods. The experts appreciate this explanation and are of the opinion that the duration of the internship should be further regulated and structured.

Regarding the improvement of the international mobility of students and the internationalisation strategy, no new information or convincing strategy is provided by UNMUL. Therefore, the recommendations in this regard are maintained for the future. For example, according to the experts, the following issues could be addressed International summer schools with invitation and exchange of Indonesian and European students, creation of an international exchange research and teaching module (e.g. development of value chains for production and marketing of tropical fruits for the European organic market).

The university also presents several strategies to increase student interest in the Bachelor's, Master's and Doctoral programmes in Forestry. The experts appreciate these strategies and believe that they will help to address the decline in student applications and enrolments in recent years. However, a specific strategy should be developed for the **DPF** (see below **Criterion 5 and D7**).

Criterion is not fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Self-Assessment Report (SAR)
- Academic Guidance
- Documents containing provisions for the recognition of externally acquired academic achievements
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Curriculum document
- Guideline For Implementing Student Field Work Practice
- Guideline Of Student Community Service Program And Equivalence Activity Program
- Module Handbook for each programme
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The type of examination, timetable and assessment methods are regulated by Mulawarman University's Academic Regulations. It states that all students will be assessed, including academic and non-academic assessment. Academic assessment is carried out using diagnostic, formative and summative methods. For example, in undergraduate courses, such as clinical courses, there is a pre-test as a diagnostic assessment at the first session. This pre-test is used to identify gaps in skills or misconceptions in previous learning. Assessment of soft skills is integrated into the learning process, including being active, disciplined, having communication skills, teamwork and self-confidence. All assessments will be processed using the determination achievement of quality grades, letter grades and weight grades, namely A (≥80); B (70 - 80); C (60-69); D (40 - 59); and E (<40) based on Academic Regulation Number 17 of 2020 Article 45 and Article 46. Evaluation of student assessment methods is carried out after the learning process through lecturer meetings at the end of each semester and student satisfaction with exam results.

A semester is usually divided into 16 sessions, consisting of 14 teaching and 2 examining sessions. The mid-term exam is held in the 8th or 9th week of the semester, while the final exam is held in the 16th week of the semester. Examination dates and times are announced on the notice board and/or online. One week before the examination, students are given a period of time known as "Reading Week", which is a scheduled break in the academic calendar where students are given time off from regular teaching to allow them to focus on studying in preparation for the examination. Within a week of the final examination, final grades are uploaded to the Academic Integrated System (AIS) portal. After the evaluation period in the Academic Information System, a Study Results Card (SRC) will be issued showing the Cumulative Grade Index which determines the number of credits the student can take in the following semester. If a student receives an E, he or she must repeat the course. There is an option to repeat or not repeat courses with a D grade.

Students can access the results of any examination paper corrections or grade information. Students may complete an appeal form and discuss it with the course coordinator. If errors are found in marking, they may be re-marked. The course coordinator will give incomplete status to students who have not completed all assessments.

The conversion of grades or quality scores into letter grades is as follows A = 80 ≤ AM ≤ 100 (pass); B = 70 ≤ AM < 80 (pass); C = 60 ≤ AM < 70 (pass); D = 40 ≤ AM < 60 (pass); E = 0 ≤ AM < 40 (fail). Letter grades do not always have the same weight. The value or quality of the numbers 72 and 78 both get the letter B, but in the calculation of the Grade Point Average (GPA) these values have different weights. The weights are as follows: a.00 ≤ AM <40, has a weight of 0.0; b. 40 ≤ AM <50, has a weight of 1.0; c. 50 ≤ AM <60, has a weight of 1.5; d. 60 ≤ AM <65, has a weight of 2.0; e. 65 ≤ AM<70, has a weight value of 2.5; f. 70 ≤ AM<75, has a weight value of 3.0; g. 75 ≤ AM<80, has a weight value of 3.5; h. 80 ≤ AM ≤ 100, has a weight value of 4.0.

In order to be eligible for the examination, students must have a minimum attendance of 80% for lectures and 100% for practical sessions. If there are students who are unable to take the exam as scheduled for valid reasons and can provide a valid certificate (such as a doctor's note if they are ill), students will be allowed to reschedule the exam.

Students' academic performance is evaluated periodically at the end of the second, fourth and seventh semesters. At the end of the second year, the student's performance is evaluated to determine whether the student is allowed to continue their studies. Students are allowed to continue their studies if they have successfully obtained a minimum of 40 SKS (64 ECTS) with a minimum GPA of 2.00 at the end of the second year. At the end of the fourth year, students must have a minimum of 80 SKS (128 ECTS) with a minimum GPA of 2.00. Then, at the end of the seventh year, students who are unable to complete 144 SKS

(230 ECTS) and maintain a minimum GPA of 2.00 will not be allowed to continue their studies.

Thesis

With regard to the thesis, there is a closed scientific session or meeting attended only by the supervisor, the examiner and the students being examined. The thesis examination is held to assess the students' ability to defend their thesis and to cover other sciences related to their field in a comprehensive manner and is attended by a minimum of three examiners, consisting of one supervisor and two examiners. The weighting of the assessment for the thesis examination is 60 per cent by the supervisor and 40 per cent by the examining lecturer. The assessment of the dissertation includes writing skills, presentation, scientific understanding, and understanding of the dissertation and related knowledge. Students who do not achieve and meet the minimum standard criteria will be given one opportunity to re-sit the dissertation examination.

For the Master's thesis, the examination of the thesis takes place behind closed doors and can only be carried out in the presence of at least four supervisors, all three of whom must be present. The role of supervisors and examiners is the same, namely to check the research and opinions that students have written in their thesis. The main supervisor acts as the chairman of the examination board and moderates the examination, while the co-supervisor acts as the secretary of the examination.

The doctoral defence is divided into a closed defence examination and an open defence examination. After a DPF student has passed a closed examination and has been declared passed by the supervising and examining teams, he or she may proceed to an open defence. The open defence examination is open to faculty, students, and guests from government and private institutions or companies.

The experts confirm that the types of examinations for each module are clearly and transparently specified in the module handbook. They also consider that the organisation and follow-up of examinations is appropriate.

The experts examine samples of examinations, final projects, thesis and doctoral theses as well as internships reports submitted by the programmes under review. According to them, the dissertations and final projects show that the level of students' academic performance and the content of the modules are sufficient for the programme concerned. However, they consider that the forms of examination in the programmes under review should be diversified and adapted to the level and content of the courses. Multiple-choice examinations need only be offered in the first year. Minimum grading criteria for MSc and

PhD theses should be documented transparently for quality assurance including the publication quality especially for PhD Degree.

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

In its response, the university states that multiple-choice examinations will be used exclusively during the first year of study. In subsequent years, the majority of courses utilise open-ended questionnaires to assess students' comprehension of course materials. At BPAPT, fundamental courses such as Chemistry, Biochemistry, Physics, and Biology continue to employ a combination of multiple-choice and essay questions to evaluate the material covered comprehensively. This mixed-question format is designed to assess different aspects of students' understanding. This position has been met with approval by the experts.

Criterion is fulfilled.

3. Resources

Criterion 3.1 Staff and Development

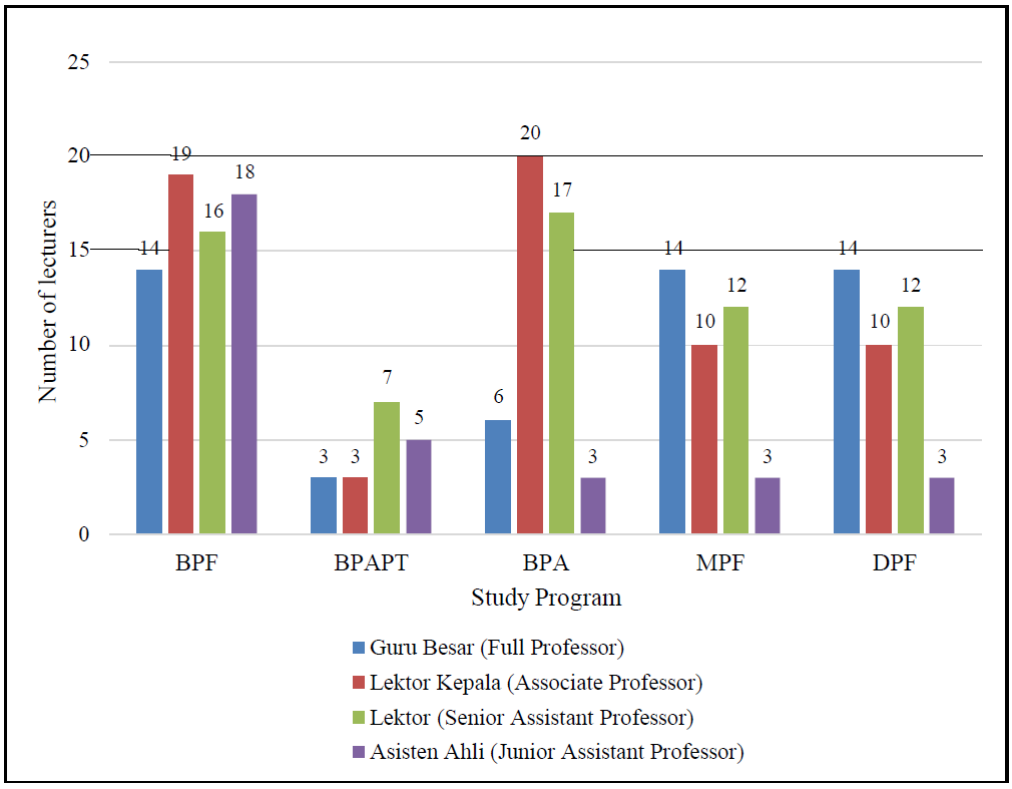
Evidence:

- Self-Assessment Report (SAR)
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Staff Handbook
- Module Handbook for each programme
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The Faculty of Forestry (BPF, MPF and DPF) has 67 teachers, of which 14 are professors, 26 doctors, 27 master teachers and 43 non-academic staff members. The Faculty of Agriculture consists of 46 permanent lecturers for BPA, including 6 professors, 28 PhDs, 5 doctoral candidates and 13 master's degree holders, while the BPAPT has 3 professors, 11 PhDs, 3 doctoral candidates and 4 master's degree holders.

Following graphic shows the distribution of lecturers' academic positions:



The lecturer-student ratio per academic year for the programmes under review is, according to the SAR, as follows:

Study Program	Number of Lecturer				Number of Students				LSR
	2020	2021	2022	Mean	2020	2021	2022	Mean	
BPF	69	67	70	70	305	332	265	301	1:4
BPAPT	17	18	18	18	426	443	464	444	1:24
BPA	43	44	46	44	634	656	699	663	1:15
MPF	29	32	35	35	56	68	67	64	1:2
DPF	9	17	20	20	20	17	14	17	1:1

The experts wonder how the difference in the number of teaching staff and the resulting student-lecturer ratio of the three BSc programmes can be explained. During the evaluation, the university points out that there is an error in the data provided in the SAR. They provided the correct figures. According to the University, the student/teacher ratio is in line with the provisions of Act No. 12 of 2012 and Regulation of the Minister of Education and Culture No. 49 of 2014 on the National Education System (1:20 for science groups).

Promotion to higher levels requires certain credit points obtained from teaching, research (publication-innovation) and community service activities. Higher credit points can be obtained by lecturers with more output activities. Based on their classification, each lecturer has rights and obligations as stipulated in the Decree of the Minister of Administrative Reform and Bureaucratic Reform Number 17/2013 concerning Functional Position and Lecturer Credit Score.

There are several programmes conducted at the Faculty and University level in the form of workshops, training and seminars, both national and international, in which staff and lecturers participate. The Faculty also invites national and international speakers as guest lecturers to conduct seminars. In terms of staff development, the faculties/departments have programmes to enhance the capacity of each staff member. Lecturers are given the opportunity to participate in training to enhance their academic capacity. Both BPA and BPAPT lecturers have certificate training to support their ability to conduct the learning process, such as Basic Instructional Technique Skill Improvement Training and Apply Approach Training.

The Faculty of Forestry and the Faculty of Agriculture provide financial support to encourage lecturers to engage in research and scholarships for lecturers' professional development. Support for research and scholarship for lecturers in the Faculty of Forestry

is based on the Decree of the Dean of the Faculty of Forestry, Mulawarman University number 045/SK/2020 through research grants, further study for lecturer assistance, study programme lecturer research, training, scientific publications, books and intellectual property.

The Faculty of Forestry also gives annual awards to outstanding lecturers in teaching, research and service. Meanwhile, teaching staff are also rewarded for their performance.

During the audit, the teachers confirm that they have several opportunities for pedagogical training and further qualification. Most of them attended these events and were given time by the university for this. All lecturers are required to have a teaching certificate. There are opportunities to go abroad for conferences or research. Young lecturers can join the senior lecturers' classes to learn from them. They are also given the opportunity to participate in research and take time off for it. They can also apply for funds from the ministry. There is also support from the Ministry to attend international conferences. Teachers are satisfied with their workload and feel that there is a balance between teaching and research.

In conclusion, the experts confirm that the composition and academic orientation of the teaching staff are appropriate for the successful implementation and sustainability of all programmes under review. The University and the Faculties support their staff and provide adequate opportunities for the development of professional and teaching skills. However, the experts conclude that the correct student-lecturer ratio of the three BSc-Programmes needs to be provided and a staff development plan for the last 5 years. As done for the students' workload the university should start to develop an evaluation program for the analysis of tasks and workload of the teaching staff Essential is also a staff development plan to provide capacity for new upcoming subjects and increase respective flexibility for transformations in teaching subjects. A comprehensive staff development plan is vital for building capacity in innovative subjects.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report (SAR)
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the discussion on-site, UNMUL provide students with comprehensive support, guidance and resources to ensure their academic success, personal development and well-being. Non-academic personnel are divided into two, i.e. laboratory assistants and administrative personnel. For instance, BPA and BPAPT are each supported by two administrative staff whose job is to provide services to students according to their main duties and responsibilities.

The Dean appoints an academic supervisor for each student as an academic advisor so that students who experience problems or difficulties during the implementation of learning can consult with their respective academic advisors.

During the on-site visit, the experts ask whether the university provides psychological counselling services for students. The university management confirms that counselling services are available to support students' emotional and psychological needs. In addition, students are encouraged to participate in co-curricular activities through a large number of student organisations, clubs and societies covering various interests, including academic, cultural, sporting and social activities.

In summary, students generally have a very good relationship with their teachers and alumni still maintain contact with the institution and staff and are very proud of the institution. Both students and staff confirm that there is always an academic advisor available to work with students on any questions or problems. The students interviewed feel supported by the teaching staff and by their academic advisors and counsellors. The experts note the good and trusting relationship between students and staff. The online learning platform in use enables communication between teachers and students. The experts believe that the support system helps students to achieve the intended learning outcomes and to complete their studies successfully and without delay. Students are well informed about the services available to them. The experts consider that the guidance and mentoring system in place is very good. It is essential to investigate why study periods are excessively long.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Report (SAR)
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home

- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Sources of Annual Funding for the Faculty of Agriculture and Forestry 2020-2022
- Allocation of Funds for the Faculty of Agriculture and Forestry 2020-2022
- Cooperation Agreements 2020-2024
- Discussions during the audit

Preliminary assessment and analysis of the experts:
As stated in the SAR, the Faculty of Forestry is financed by the State University's operating funds (BOPTN), non-tax income (PNBP), and cooperation with agencies and the private sector. The study programme budget is divided into study programme operating costs and laboratory operating costs. Apart from operational funds, study programmes also receive funding from faculties, universities, the Ministry of Education and Culture, research and community service institutions and others. UNMUL provides an overview of the allocation of funds for both faculties from 2020 to 2022.

The Faculty of Forestry and the Faculty of Agriculture have several classrooms, student service rooms, equipment rooms, seminar buildings as well as one educational forest, library, places of worship, sports facilities, parking area and canteen. In addition, the Faculty of Forestry has eight laboratories and manages two Education and Research Forest: (1) Bukit Soeharto, Kutai Kartanegara Regency covering an area of 20,271 ha; and (2) Tanah Merah, Samarinda City, covering an area of 299.03 ha. These two forest areas are used for practicum and research activities for students both undergraduate and postgraduate levels.

In the Faculty of Agriculture, seven laboratories are used in BPA (e.g. Agronomy Laboratory, Plant Pest and Disease Laboratory, Soil Laboratory, Tissue Culture Laboratory, Biotechnology Laboratory), while four laboratories are used in BPAPT (e.g. Agricultural Product Chemistry and Biochemistry Laboratory, Agricultural Microbiology Laboratory, Post-harvest and Packaging of Agricultural Products Laboratory, and Processing and Quality Control of Agricultural Products Laboratory). Other facilities include student dormitories, guesthouses, clean water supply facilities, water treatment plant and integrated laboratory building.

The experts are able to obtain a clear understanding of the facilities during the guided tour on-site. They visit the Biotechnology Laboratory, Plant Pest and Disease Laboratory, Soil Laboratory, Agricultural Product Chemistry and Biochemistry Laboratory, Post-harvest and Packaging of Agricultural Products Laboratory. The forestry laboratories visited included the Socio-Economic Policy Laboratory, Forest Products Technology Laboratory, Silviculture Laboratory, Soil Laboratory, and Conservation of Forest Resources Laboratory. These

laboratories serve as practical learning spaces for students, facilitating hands-on experiments, discussions, and research.

During the visit, they can observe the students working in groups with the assistance of the teachers. However, the outdated equipment necessitates upgrades to modern facilities, supporting undergraduate to doctoral students' research and experimental needs. However, equipment is partly old fashioned and in all laboratories modernisation is urgently necessary, especially to facilitate high-level doctoral research.

The group of students and staff interviewed express satisfaction with the equipment available to them and the infrastructure in place. However, some students want more specialist laboratory equipment. Some alumni are of the opinion that new software would be desirable.

Moreover, the university provides some agreements with international universities for students' and teaching exchange and research collaboration such as the 2023 Student Exchange Program in collaboration with three universities in Japan, i.e. Kyushu University, Kyoto University and MIE University.

Overall, the experts conclude that UNMUL's campus and infrastructure are adequate and sufficient for undergraduate teaching. They also consider that the university has sufficient space, classrooms and facilities. The laboratories are equipped for undergraduate teaching and the laboratory staff are generally well trained and dedicated. However, there is a need to modernise the laboratory equipment, especially for the postgraduate programmes, and in particular to improve the software equipment. For future planning, it would be helpful to make a list of existing laboratory equipment and a list of needs. The same applies to the field laboratory equipment for training students in the field.

Additionally, the experts request a detailed financial report for the last five years (including sources of funding and expenditure) to determine whether the programmes have secure funding and reliable financial planning. As noted above in **1.3** on student mobility, the number of international collaborations should be increased and extended to other countries.

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

UNMUL provides corrected data on the student-to-lecturer ratio, which is as follows: **1:20 for BPF, 1:2 for MPF, and 1:1 for DPF; 1:22 for BPA, and 1:26 for BPAPT**. The experts appreciate this information.

In addition, a staff development plan is provided for **BPA** and **BPAPT** including a development plan of academic positions of lecturers at the Faculty of Agriculture. However, the experts note that the human resources development plan should be improved and include an outlook on future possibilities, e.g. exchange possibilities between similar study programmes with lecturers in order to avoid time-consuming "personnel overlaps", possibilities to reduce personnel requirements.

As regards the Faculty of Forestry, the experts consider that the information on the staff development plan is still rather limited. There is a need for an outlook, with an option for the future of the discipline.

In addition, the university provides a financial report on the budget and sources of funding of both faculties. This detailed information is appreciated by the experts.

With regard to equipment, the laboratories and equipment available in both faculties are described. A proposal for the modernisation of the laboratory equipment in the Faculty of Forestry for the year 2025 is also provided. The experts appreciate the efforts made in recent years to improve the equipment in the laboratories. As the modernisation and purchase of new equipment takes time, they confirm their recommendation and hope that the equipment and software of the laboratories will be improved in the future.

Criterion is partly fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Self-Assessment Report (SAR)
- Module Handbooks
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The module descriptions provided by the university contain following information: name, level and code of the module, courses (if applicable) and semester(s) in which the module is taught, person responsible for the module and lecturer, language, relation to curriculum, teaching method, contact hours, workload and credit points, as well as requirements according to the examination regulations, prerequisites, module objectives/intended learning outcomes, content, study and examination requirements and forms of examination, media employed, and reading list.

The module descriptions for all programmes are published on the relevant website. However, they consider that the module descriptions for all programmes under review need to be reviewed and updated in accordance with the curriculum. The updated versions should be available on the relevant website. In particular, the learning outcomes for each module need to be included and have a consistent structure (e.g. in some cases there are more than 14 learning outcomes). Module handbooks of the DPF need to be completed.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-assessment report
- Samples of diploma supplements and transcript of records
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/

- Discussions during the audit:

Preliminary assessment and analysis of the experts:
As explained in the SAR, graduates receive the Diploma Certificate approximately seven days to one month after the graduation ceremony and the Transcript of Records two days later. The diploma is issued in Indonesian and English (two separate documents). The English version is only available to graduates who have passed the English language proficiency test (TOEFL) and can provide a TOEFL certificate containing the test results.

Only graduates of the Bachelor's programme receive, in addition to the degree certificate and transcript, a Diploma Supplement (SKPI), which describes the records of related extra-curricular activities and achievements during the study. It includes information on personal qualifications and learning outcomes, achievements and awards, organisational experience, participation in personal development, industrial placement and their thesis specification.

The experts conclude that UNMUL needs to issue a Diploma Supplement for the Master's programme in Forestry. It is also suggested to elaborate a respective supplement for the PhD programme, documenting all activities like conference and teaching contributions. This getting common on a global level. In addition, the examples of Diploma Supplements provided for the Bachelor's programme do not include the statistical information required by the ECTS User's Guide to enable the reader to assess each grade, nor information on the Indonesian higher education system. The existing Diploma supplements must provide information about the course character (full-time, part time, distance learning) and the maximum and minimum degree passing grade need to be documented. In general, the Diploma Supplement form should be complemented and updated.

Criterion 4.3 Relevant Rules

Evidence:

- Self-assessment report
- Study regulations: Academic Guidance
- Admissions regulations
- Examination regulation
- Code of Conduct
- Teacher responsibilities
- University website: https://unmul.ac.id

- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Discussions during the audit:

Preliminary assessment and analysis of the experts:
The university's website contains the most important information about programmes and regulations. The rights and responsibilities of students and lecturers are explained in the Statute of Mulawarman University, Chapter VIII, Article 88, pages 61-62. The Faculty has also published an Academic Handbook for each programme, which details the rights and responsibilities of students at the Faculty. The handbook is written in Indonesian and is published annually for students and academic staff.

Lecturers can monitor the progress of students' academic activities through the AIS (Academic Integrated System), which can be also accessed by students.

The expert panel confirms that relevant documents such as the University's Academic Policy, students' and staff's rights and duties or quality management guidelines exist and are published publicly on the university's website.

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

The University provides updated Module Descriptions and Diploma Supplements for each programme. In addition, a Diploma Supplement has been issued for the Master's and Doctoral programmes in Forestry.

The experts review the documents and confirm that they now contain all the necessary information.

Criterion is fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- Study regulations: Academic Guidance
- Report of Quality Management Assurance
- Report Evaluation of Lecturers by Students 2023
- Sample student survey questionnaire
- Result of student survey
- BAN-PT accreditation certificates
- GPA for BPA 2019-2021
- University website: https://unmul.ac.id
- Faculty of Forestry Website: https://fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Discussions during the audit […]

Preliminary assessment and analysis of the experts:

UNMUL has a comprehensive external and internal quality assurance system. In terms of internal quality assessment tools, the Educational Development and Quality Assurance Institution carries out annual internal quality audits (AMI-SPMI) at university level. At the end of each semester, management review meetings are held on the implementation of the quality system. The implementation of internal quality standards is also evaluated and controlled through regular, structured follow-ups and ongoing internal quality audits (AMI). The results of the audits are documented in an internal quality audit report. These are followed up once a year in the Management Review Meeting at Faculty level, where decisions and actions are taken to improve the implementation of the quality assurance system.

The whole academic community (lecturers, staff and students) is involved in quality assurance through various activities such as satisfaction surveys and feedback about educational service quality. At the end of each semester, students are required to complete a questionnaire/survey to collect student opinions on the quality of public services,

facilities and infrastructure. For all study programmes, the questionnaires are distributed online.

Lecturer performance evaluation are also carried out by students online at the end of each semester. Students assess the quality of lecturers on four criteria, namely: teaching readiness, teaching materials, teaching discipline, teaching evaluation, and lecturer personality.

With regard to external quality assessment, the Faculty of Forestry and the Faculty of Agriculture involve external assessors based on BAN-PT standards. The BAN-PT certification system is valid for five years. Meanwhile, the Faculty of Forestry has also implemented ISO 9001:2015 quality assurance with an annual monitoring system.

The involvement of external parties is also accommodated to measure the quality of graduates with a profile survey of graduates accepted by the labour market. The analysis of user satisfaction takes into account several indicators of graduates' abilities, such as self-development, cooperation, communication skills, use of information technology, English language skills and knowledge of science and ethics. In addition, the experts appreciate the strategic decision of the University management to use international accreditation as a central tool of self-improvement.

Furthermore, UPT Perkasa UNMUL conducts the tracer study survey for alumni via the study program website. Measuring the level of satisfaction of BPAPT and BPA students with student services is carried out every year. The Faculty of Agriculture evaluates student satisfaction levels.

Evaluation of PLO learning achievements is also being determined at the faculty level, forming a team to evaluate PLO from the learning system to the weight of achievement of questions following the PLO. Evaluation of students in the learning process from start to finish can be seen with the cumulative achievement index and graduate travel time. Regarding learning outcomes, the main performance indicators in the BPA study programme are shown by students' average cumulative achievement index in the form of average GPA in the last three years (2019, 2020, and 2021). For example, the summarized learning outcomes for 2019-2021 show an average Grade Point Average of 3.29 obtained from 207 graduates.

In the discussions with students, the experts note that students are involved in the evaluation of teaching. The majority of them feel that student evaluation really helps to develop the programme and they have the impression that the feedback is used by the university for improvement. However, the experts note that the results of the surveys on teaching are not communicated to the students. They therefore consider that quality

assurance tools need to be developed and implemented in a consistent way. Students need to be more actively involved in the feedback loops of the university's quality management system. After the teaching evaluation, the teacher of each course evaluated should discuss the results with the students.

In addition, the experts note, on the basis of statistical data provided by the university, that the number of students dropping out of the BPF is relatively high. The coordinators state that they try to encourage students and provide support and guidance. However, they are not sure about the reasons for dropping out. Therefore, the experts believe that the number of drop-outs or withdrawals and the reasons for this should be evaluated for the BSc Forestry programme. A monitoring system should be set up to monitor this and action should be taken based on the results. As mentioned above (see **1.3**) the reasons for the increase in the length of study also need to be analysed and measures need to be developed to reduce this. Furthermore, the experts note that the number of applicants and accepted students is decreasing in all programmes (see above **1.4**). Consequently, they consider that measures should be taken to reverse the decline in student applications and admissions in recent years. Considering this complex field of quality assurance it could be helpful to set up a sample of the main problems concerning study quality and study success to create a ranking list.

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

The university explains that both the Faculty of Agriculture and the Faculty of Forestry's Quality Assurance Group have uploaded the results of the students' evaluation of lecturers (EDOM) on the website in an open and transparent way so that students can access them (Lecturer Evaluation by Student Report of Faculty of Agriculture and Faculty of Forestry). According to the experts, this is a good method to communicate the results of the survey to the students. However, it is still a one-way information and no discussion with the students is foreseen. Introducing such innovative forms of discussion between teachers and students takes some time, but could be part of the ongoing quality improvement process.

The University also presents several strategies to increase student interest in the Bachelor's, Master's and Doctoral programmes in Forestry. The experts appreciate these strategies and believe that they will help to reverse the decline in student applications and enrolments in recent years. However, a specific strategy should be developed for the DPF (see **criterion 1** and below **D7**) to address the decline in student applications and enrolments in recent years and to develop measures to reduce the length of study.

UNMUL has established a system to monitor the causes of high dropout rates and length of study through the Academic Integrated System (AIS). This information system contains data on students, academic performance, courses taken in previous semesters, grades for each semester, grade index, etc. The experts appreciate the implementation of this monitoring system. However, the reasons for dropping out need to be identified and measures developed to address them.

Criterion is fulfilled.

D Additional Criteria for Structured Doctoral Programmes

Criterion D 1 Research

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Relationship Matrix between ASIIN SSC-08 and Expected Learning Outcomes for DPF
- Relationship between Expected Learning Outcomes and Courses
- Curriculum document for DPF
- Module Handbook for DPF
- Sample of published dissertations or papers in scientific journals
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Objectives and learning outcomes of DPF are published on the study programme website. According to website of DPF, the PhD programme focus on research in the field of forestry, especially humid tropical forests and their environment. Particularly, following disciplines are addressed: Forest Management Science Field (consisting of sub-fields of Forest Planning, Politics, Social & Economics of Forestry, Forest Biometrics and Forest Product Harvesting); Forestry Cultivation (Guidance) Science Field (consisting of Silviculture, Forest Soil and Forest Protection Sub-fields); Forest Resources Conservation Science Field (consisting of Soil & Water Conservation Science Sub-fields, Forest Ecology and Wildlife Management) and Forest Products Technology Science Field (consisting of Forest Products Industry Science Sub-fields and Wood Properties Science) as well as Socio-Economic and Forestry Environment.

Starting in the 2022/2023 academic year, Mulawarman University's Faculty of Forestry offers a Research-Based Doctoral program. This program aims to produce graduates who have skills gained through independent research experience and produce reputable international journal publications.

As part of the DPF curriculum, there is a requirement for attendance at international seminars and research colloquia, for which credits are awarded. Publish at least one

scientific article in an international scientific journal that is recognized by the Ministry of Research, Technology and Higher Education or in international journals indexed by Thomson Reuters, Web of Science, Clarivate Analytics or Scopus or at least have Q3 (Schimago Journal & Country Rank/SJR) will be given an "A" letter grade. International journals that are not indexed by the three indexes above but are indexed by other official indexes recognized such as DOAJ, Google Scholar etc. will receive a letter grade of "B". Journals that are not indexed will not fulfil the requirements.

The university provides a sample of articles published in scientific journals by doctoral students between 2019 and 2023, as well as summaries of two dissertations. The experts review some of these samples and find the level and structure of the work to be adequate. Nevertheless, they note that no minimum criteria for reaching a PhD are formulated and there is no possibility of cumulative theses. The experts are of the opinion that this option should be part of the doctoral programme.

During the audit, the present PhD students express their satisfaction with university's support and infrastructure for research activities. The most of them participate actively at conferences and research colloquiums as well as in paper publications. Based on that, the experts believe that the focus of the programme enable doctoral candidates to broaden their skills and network for their research activities. In addition, they observe that the university provides good conditions and support for PhD's research projects.

After reviewing the learning outcomes and discussing them with the various stakeholders, the experts conclude that the PLOs for the DPF need to be reviewed and clarified. They also note that the learning outcomes for some modules are not included in the module handbook. The module handbook therefore need to be reviewed, completed and structured in a consistent way.

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

As mentioned above regarding **criterion 1**, UNMUL provides revised and updated PLOs. The PLOs are harmonised across all documents, including the Diploma Supplement. The learning outcomes for the modules have also been revised. According to the experts, the PLOS are formulated better and documented. The experts are satisfies with this. However, the wording of the PLOs and the presentation on the module should be improved. In general, all documents should be written in English. This is also important for academic international exchanges.

Criterion is fulfilled.

Criterion D 2 Duration and Credits

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Curriculum document for DPF
- Module Handbook for DPF
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The doctoral students must complete a minimum of 42 SKS (67 ECTS) with a maximum study duration of seven years. In the curriculum overview for DPF, it is, however, specified that for the regular track are required at least 42-48 SKS (67.2-76.8 ECTS), and for the by research track 42-44 SKS (67.2-70.4 ECTS). The duration of DPF is 6 semester, although the maximal time, according to the university, is 14 semesters under certain conditions.

The university provides following data of graduates in the last six years:

Year of entry	Number of new student	Data of graduates	Length of study (months)	Cumlaude predicate holder
2017	5	3	45	1
2018	4	0	0	0
2019	3	0	0	0
2020	0	0	0	0
2021	3	1	30	1
2022	4	0	0	0

During the on-site visit, the students confirm that the completion of the research project is doable within the allotted timeframe of three years. Although the PhD programme currently does not bring forth a high number of graduates, the experts confirm that the doctoral programmes operate within an appropriate time duration.

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

Criterion is fulfilled.

Criterion D 3 Soft Skills and Mobility

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Curriculum document for DPF
- Module Handbook for DPF
- Discussions during the audit

Preliminary assessment and analysis of the experts:

PhD students report a good preparation for the job market after graduation. The industry representatives appreciate doctoral graduates from the areas under review. However, they are of the opinion that the training of soft skills such as entrepreneurship, leadership, communication as well as additional English modules in the curriculum should be intensified (see above **1.3**).

Regarding international mobility, the university management explains that scholarships are offered by the government for postgraduate students for stays abroad. Doctoral students confirmed that there are several government-funded mobility programmes. Furthermore, the SAR indicates that there are multiple collaborative endeavors with foreign universities and research institutions. The Faculty of Forestry has several agreements with Indonesian and international universities for exchange and research such as the Directorate General of Forestry, Ministry of Agriculture and Fisheries in Timor-Leste, Center for International Forestry Research, as well as Tokyo University, Twente University, University of Malaysia Sabah, Yamagata University, Chulalongkorn University, Leiden University, Manitoba University and Wageningen University.

As mentioned before (see **1.3**), the experts are impressed with the overall satisfaction of PhD students. Nonetheless, the experts find it necessary to improve the opportunities and support for students' international mobility through an appropriate framework. The same holds true for the English language skills of the students. The experts seem room for improvement in this area to ensure employability after graduation and make graduates more competitive for the academic job market.

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

Regarding the improvement of the international mobility of students and the internationalisation strategy, no convincing strategy for the PhD programme in Forestry is provided by UNMUL. Therefore, the recommendations in this regard are maintained for the future.

Criterion is fulfilled.

Criterion D 4 Supervision and Assessment

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to UNMUL, the evaluation rules are clearly formulated and binding. Dissertation research is supervised by a supervisor team consisting of the main supervisor and two co-supervisors. The guidance system refers to UNMUL's 2017 Academic Regulations, which are in the Indonesian language. The university states that according to this regulation, the mechanism for appointing a supervisor is as follows:

1) Students submit a research theme in their proposed research plan.

2) The proposed research plan is then reviewed by the Dissertation Commission Team.

3) Students take a qualification exam, if they pass, students can apply for a promoter team in accordance with the direction of the study program, related to the suitability of the scientific field, academic degree requirements and rank.

4) The promoter and examiner team is submitted by the study program to the faculty, and then the faculty will propose to the Rector to make a Decree on the Determination of the Dissertation Promoter and Examiner Team.

The doctoral examination consists of a closed and an open defence. The requirements for registering for the examination are set out in the Faculty's Academic Regulations and the University's Academic Regulations. When all requirements have been met, the Programme Coordinator will schedule a defence examination for DPF students. Once a DPF student has

passed a closed examination and has been declared successful by the Promoter Team and the Examination Team, he/she may hold an open defence in the presence of lecturers, students, guests from state and private institutions or companies. The revised draft of the dissertation may be submitted for examination by the Dissertation Examination Board if it has been approved by the supervisor and the assistant, as evidenced by their signatures on the cover or title page of the dissertation. The requirements for completion of the DPF are as follows:

1. Complete all courses specified in the relevant Study Program curriculum with a minimum letter grade of B.
2. GPA ≥ 3.25.
3. Pass the Mulawarman University English Proficiency Test (MU-EPT) or TOEFL which is recognized by the Mulawarman University Language UPT with a minimum score of 500.
4. Create a minimum of one scientific article published in a reputable international scientific journal recognized by the Ministry of Research, Technology and Higher Education.
5. Pass the open dissertation examination; and
6. Complete other requirements set by the Faculty/Postgraduate Program

The PhD candidates interviewed express their satisfaction with the support and supervision provided by their supervisors. They receive continuous feedback and advice from them, including on financial support. The professors are always available online or in person. The experts stress that the relationship between students and teachers is very good.

However, they consider that it would be useful to have a separate, specific handbook containing all regulations and guidelines for the doctoral programme in Forestry, where also the assessment rules and minimum requirement for a PhD grade are clearly formulated and binding.

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

The university provides a list of assessment rubrics for the PhD thesis. A handbook containing all the regulations and guidelines for the doctoral programme in Forestry, including the minimum requirements for the doctoral thesis, is still missing. The experts consider such a document to be necessary.

Criterion is fulfilled.

Criterion D 5 Infrastructure

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Academic Regulations UNMUL
- Co-operation agreements
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Regarding library needs, every semester periodically the university library section offers study programs to complement the library needs relevant to the study program. The library has been equipped with an electronic catalogue.

The experts are able to obtain a clear understanding of the facilities during the guided tour on-site. The Faculty of Forestry has eight laboratories and manages, additionally, two Education and Research Forest covering an area of 20,271 ha and of 299.03 ha, respectively. These two forest areas are used for research activities for postgraduate levels.

The group of students and staff interviewed express satisfaction with the equipment available to them and the infrastructure in place. However, some students want more specialist laboratory equipment. The experts see a strong need of modernisation of all laboratory facilities. Especially to assure high level PhD research. Some alumni are of the opinion that new software would be desirable.

As mentioned above, the Faculty of Forestry has established research and educational collaborations with various domestic and foreign universities such as Tokyo University, Twente University, University of Malaysia Sabah, Yamagata University, Chulalongkorn University, Leiden University, Manitoba University and Wageningen University.

Overall, the experts conclude that UNMUL's campus and infrastructure are adequate and sufficient. They also are of the opinion that the university has sufficient space, classrooms and facilities. The laboratories are equipped for teaching and the laboratory staff are generally well trained and dedicated. However, the laboratory equipment needs to be modernised urgently to guarantee a continuously high PhD quality level. In particular, the software equipment needs to be improved. As noted above in 1.3 on student mobility, the number of international collaborations should be increased and extended to other countries.

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

As mentioned above in criterion 3, the University's statement describes the existing equipment in the laboratories of both faculties. However, the modernisation of equipment and software resources is also highly recommended for research projects and to ensure that doctoral students are provided with an adequate research environment that allows them to carry out their research projects appropriately.

Criterion is fulfilled.

Criterion D 6 Funding

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Academic Regulations UNMUL
- Co-operation agreements
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Doctoral students are usually enrolled on a fully-funded scholarship basis. These scholarships are provided by the government to support students financially. They are very satisfied with the financial support and, as reported during the audit, could not otherwise afford to complete a PhD.

In conclusion, the expert group finds that the university and the state grants provide enough financial support for doctoral candidates. However, the experts request a financial report for the last five years (including sources of funding and expenditure) to determine whether the programmes have secure funding and reliable financial planning.

Furthermore, given the low number of doctoral students, the experts consider that the feasibility of the doctoral programme in terms of the number of doctoral students needs to be reviewed. A strategy to ensure sustainability needs to be developed.

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

The University recognises the experts' concerns about the current number of doctoral students and the challenges associated with maintaining the sustainability of the programme. It presents a list of strategies to increase student interest in the Doctoral Programme in Forestry and to ensure its long-term viability. The experts appreciate the efforts of the study programme to address these issues. However, they consider that a convincing strategy to increase the number of doctoral students is not documented. The measures should be more operationalised (e.g. action in time and corresponding funding and responsibilities).

Criterion is not fulfilled.

Criterion D 7 Quality Assurance

Evidence:

- Self-Assessment Report (SAR)
- Doctoral Programme in Forestry Website: https://psdik.fahutan.unmul.ac.id/home
- Faculty of Agriculture Website: https://faperta.unmul.ac.id/web/
- Academic Regulations UNMUL
- Report of Quality Management Assurance
- Statistical data about the progress of studies for DPF
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Regulations and guidelines for structured DPF are provided in Academic Guidelines for the Doctoral Study Program, Faculty of Forestry which are only available in Bahasa Indonesia. The rules for the presentation of the dissertation and for its assessment is clearly defined (see above D 4).

Regarding the Quality Management System at UNMUL see above **Criterion 5**.

The PhD students confirm that they fill the questionnaires regarding teaching each semester. However, feedback related to the results of these surveys are not communicated to them.

The university provides following data of graduates in the last six years:

Year of entry	Number of new student	End of CY-6 (2017/2018)	End of CY-5 (2018/2019)	End of CY-4 (2019/2020)	End of CY-3 (2020/2021)	End of CY-2 (2021/2022)	End of CY-1 (2022/2023)	End of CY (2023/2024)	GPA	Number of graduates till end of CY (2022/2023)	Average of length of study (months)	Additional information
2017	5		0	1	0	2	0	0	3,96	3	45	active = 2 students
2018	4			0	0	0	0	0	0	0	0	active = 4 students
2019	3					0	0	0	0	0	0	active = 3 students
2020	0						0	0	0	0	0	active = 0 students
2021	3							1	3,98	1	30	active = 2 students
2022	4								0	0	0	active = 4 students
2023	7								0	0	0	active = 7 students
Number of graduates		0	0	1	0	2	0					
GPA												

CY = Current Year

STATISTICAL DATA OF GRADUATES IN THE LAST SIX YEARS

Year of entry	Number of new student	Data of graduates	Length of study (months)	Cumlaude predicate holder
2017	5	3	45	1
2018	4	0	0	0
2019	3	0	0	0
2020	0	0	0	0
2021	3	1	30	1
2022	4	0	0	0

The experts appreciate the list of internal improvements for the future and measures for development of the programme mentioned in the SAR. Nevertheless, given the low number of doctoral students, the experts consider that the feasibility of the doctoral programme in terms of the number of doctoral students needs to be reviewed. A strategy to ensure sustainability needs to be developed.

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

See above **criterion D6**.

Criterion is not fulfilled.

E Additional Documents

Before preparing their final assessment, the panel ask that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

E 1 Consistent overview on students numbers including gender of the last 5 years
E 2 Financial report for the last five years (including sources of fund and spending funds)
E 3 Staff development plan
E 4 Corrected teacher-student ratio

F Comment of the Higher Education Institution (02.03.2025)

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

- Consistent overview on students numbers including gender of the last 5 years
- Financial report for the last five years (including sources of fund and spending funds)
- Staff development plan
- Corrected teacher-student ratio

The following quotes the comment of the institution:

1. Concept, Content, and Implementation of Degree Programmes

We appreciate and agree with the recommendation of ASIIN experts in the section 1 - The Degree Program: Concept, Content & Implementation. Recommendations from the expert panels have been followed up, especially on several improvements as follows: 1) Development of specific PLOs and standardization of PLOs in all documents including the website; 2) Establishment of Advisory Board in each study program, with representation of industry, small-scale factory, government, non-governmental organization, and research institution; 3) Improvement of curriculum structure by differentiating compulsory and elective courses, with information of the workload; 4) More informative and systematic structure of learning process in DPF (including curricula, course organization, measurable indicators in by course and by research tracks); 5) Development of soft skills (entrepreneurship, leadership, communication, and teamwork) through a project-based approach with measurable assessments, including practitioner involvement in teaching process; 6) Detailed information regarding the duration of internships to a minimum of two months to provide more adequate work experience; 7) Development of a system to analyze the length of study and the strategies to achieve optimum study length; 8) Explanation on the large number of modules should be reduced by increasing the module size; 9) Explanation of a method to monitoring student workload and the structured collection of student feedback on course workload; 10) More informative and systematic information concerning the workload of the MPF including in the by course and by

research tracks; 11) Monitoring system of student study length and strategies to ensure the sustainability of DPF program; 12) Strategies to strengthen student mobility.

1.1. Objectives and Learning Outcomes of Degree Programmes (Intended Qualifications Profiles):

We realize that Program Learning Outcomes (PLO) of BPF, BPA, BPAT, MPF, and DPF are still too general. Therefore, all PLOs have been evaluated and revised more specifically depending on the concept and content of each degree programme. The revised PLOs are also aligned in all legal documents, such as website, diploma supplement and curriculum documents.

Table 1.1. The Revision of Program Learning Outcomes (PLO) for all Degree Programmes in Websites and all Legal Documents

BPF	
Website	https://fahutan.unmul.ac.id/Program Learning Outcomes-BPF
Overview Curriculum	https://fahutan.unmul.ac.id/prodi-s1/ikhtisar_kurikulum
Module Course	https://fahutan.unmul.ac.id/prodi-s1/dokumen_kurikulum
Handbook	https://fahutan.unmul.ac.id/prodi-s1/module_handbook
SKPI	Diploma Suplemen_BPF.pdf
BPA	
Website	https://agt.faperta.unmul.ac.id/program-learning-outcome-plo/
Overview Curriculum	https://agt.faperta.unmul.ac.id/kurikulum/
Module Course	https://agt.faperta.unmul.ac.id/module-handbook/
Handbook	https://agt.faperta.unmul.ac.id/staff-handbook/
SKPI	https://agt.faperta.unmul.ac.id/skpi/
BPAPT	
Website	https://yin.thp.unmul.ac.id/thp/plo/
Overview Curriculum	https://yin.thp.unmul.ac.id/thp/kurikulum-program-sarjana/
Module Course	https://yin.thp.unmul.ac.id/thp/course-module/
Handbook	https://yin.thp.unmul.ac.id/thp/sebaran-mata-kuliah-kurikulum/

SKPI	https://yin.thp.unmul.ac.id/thp/new-draft-skpi/
MPF	
Website	https://psmik.fahutan.unmul.ac.id/Program Learning Outcomes-MPF
Curriculum Document	https://psmik.fahutan.unmul.ac.id/curriculum document-MPF
Overview Curriculum	https://psmik.fahutan.unmul.ac.id/curriculum overview-MPF-regular https://psmik.fahutan.unmul.ac.id/curriculum overview-MPF-by research
Module Courses	https://psmik.fahutan.unmul.ac.id/module courses-MPF-regular https://psmik.fahutan.unmul.ac.id/module courses-MPF-by research
Module Handbook	https://psmik.fahutan.unmul.ac.id/module handbook
SKPI	Diploma Suplemen_MPF.pdf
DPF	
Website	https://psdik.fahutan.unmul.ac.id/Program Learning Outcomes-DPF
Overview Curriculum	https://psdik.fahutan.unmul.ac.id/curriculum overview-DPF-regular https://psdik.fahutan.unmul.ac.id/curriculum overview-DPF-by research
Module Course	https://psdik.fahutan.unmul.ac.id/course modules-DPF
Handbook	https://psdik.fahutan.unmul.ac.id/module_handbook
SKPI	Diploma Suplemen DPF.pdf

The Faculty of Forestry and Faculty of Agriculture have established an External Advisory Board consisting of representatives of Industry, Government and Small and Medium Enterprises. This board will function to give input related to market job needs, transformation on agricultural development, forestry sector development and other strategic issues in Kalimantan.

The members of this advisory board from have been involved in prior cooperation with Forestry faculties, i.e.:

BPF:

1. Dr. Ishak Yassir (Head of Data and Information Center, Indonesian Ministry of Forestry)
2. Dr (HC). Ir. Wahjudi Wardojo, M.Sc. (Terrestrial Program Senior Advisor, YKAN)
3. Dr. Myrna Asnawati Safitri, S.H., M.Si. (Deputy of Environment and Natural Resources, OIKN)

4. Dr. Hasanuddin Mas'ud (Chairman of DPRD of East Kalimantan/Chairman of Advisory Council of Alumni Association of Forestry Faculty UNMUL)
5. Muslim Gunawan, S.Hut. (Superintendent of Community Development and Empowerment PT Multi Harapan Utama)
6. Dr. Ir. Tetra Yanuariadi (Project Manager for Trade and Industry of ITTO)
7. Muhammad Hijrafi, S.T., M.T. (Head of Kendilo Forest Management Unit)
8.

MPF:

9. Niel Makinuddin, M.A (Senior Manager, YKAN)
10. Dr. Tunggul Butar-Butar S.Hut., M.Sc (Project Leader, GIZ)
11. Dr. Ajeng Arum Sari (Director of Talent Management, National Research and Innovation Agency)
12. Dr. Sarkowi V. Zahry, S.Hut, S.H., M.H., M.M., M.Si., M.Ling. (DPRD Member of East Kalimantan/Chairman of Alumni Association of Forestry Faculty UNMUL)
13. Dr. Ir. H. Kasransyah, M.H. (Director of PT. Utama Damai Indah Timber)
14. Dr. Ir. Taufan Tirkaamiana, M.P. (Head of APKINDO Kaltim)

DPF:

15. Dr. Ir. Martua T. Sirait, M.Sc. (Director for Indonesia Operation, The Samdhana Institute)
16. Prof. Dr. Widya Fatriasari (Researcher at the National Research and Innovation Agency)
17. Rizki Maharani, M.Env., Ph.D. (Researcher at the National Research and Innovation Agency)

BPAPT

1. Prof. Dr.oec.troph.Ir. Krishna P. Candra, M.S (Lecturer of the Department of Agricultural Product Technology, UNMUL)
2. Hamka, S.TP., M.Sc., M.P. (Director of Samarinda State Agricultural Polytechnic/Stakeholder)
3. Devi Novitasari, S.TP. (Teacher of the Muara Kaman State Vocational High School/ Alumni)
4. Grace Rosalina Silaen, S.TP. (Industrial Practitioner of PT. Porto Food Indonesia/ Alumni)
5. Candra Kadwa Utama Sutrisno, S.TP. (Industrial Practitioner of PT. Teladan Prima Agro Tbk/ Alumni)
6. Jenri Parlinggoman Hutasoit, S.TP., M.TP. (Lecturer of the Sumbawa University of Technology)
7. Sulistyo Prabowo, S.TP., M.P., MPH., Ph.D (Head of the International Service Office, UNMUL/ Lecturer)
8. Dr. Aswita Emmawati, S.TP., M.Si. (Head of the Chemistry and Biochemistry Laboratory of Agricultural Products / Lecturer)

BPA

1. Prof. Dr. Ir. Hadi Wiyono, M.Si. (*Chairman of the National Indonesian Agroecotechnology Association)*

2. Prof. Dr. Ir. Samanhudi, M.Si. (*Chairman of the National Independent Accreditation Institute for Indonesian Agricultural Universities*)
3. Henri Wiyogo, S.P. (*Secretary of the Faculty of Agriculture Alumni Association*)
4. Ir. M. Yadi Sofyan Noor (*Chairman of the National Outstanding Farmers and Fishermen Association (NOFA)*)
5. Eri Panca Setiawan, SE. (NGO-*GIZ Propeat*)
6. Ir. Hj. Siti Farisyah Yana, M.Si. (*Head of the East Kalimantan Agriculture Service*)
7. Ir. Abdul Fattah, M.Sc. (*Head of HR PT. Teladan Prima (Oil Palm Plantation*)
8. Bambang Ikwan Hidayat, S.P. (*Head of Puri LEISA (Agriculture Practitioner)*)
9. Pradana Iqomatul Haq (*Supervisor Reclamation and Mineclosur PT. Baramulti Suksessarana (Coal Mining)*)
10. Ir. Eny Nurjanah (*Plant Quarantine Expert Analyst of Animal, Fish, and Plant Quarantine Center, East Kalimantan*)

Table 1.2. External Advisory Board

Study Program	Information link
BPF	https://fahutan.unmul.ac.id/dewan_penasehat
BPA	https://agt.faperta.unmul.ac.id/dewan-penasehat/
BPAPT	https://yin.thp.unmul.ac.id/thp/dewan-penasihat/
MPF	https://fahutan.unmul.ac.id/dewan_penasehat
DPF	https://fahutan.unmul.ac.id/dewan_penasehat

1.2. Name of Degree

Clear.

1.3. Curriculum

Curriculum restructuration

In 2024, the Faculty of Forestry revised its curriculum and established an evaluation team to review the Program Learning Outcomes (PLO) and curriculum structure. The revision clearly defines compulsory and elective courses in BPF, MPF, and DPF, while also presenting workload information in a structured format. The revised curriculum is consistently aligned across all official documents, including the website and curriculum documents.

At BPAPT, the curriculum structure has been revised to clearly present the distribution of mandatory and elective courses, including their credit weightings and workloads, in a tabular format. Course mergers will be implemented during the curriculum revision process and will also be

presented in a tabular format. Attached is the plan for merging several courses (course merging plan).

BPA has revised the curriculum structure to clarify the distribution of compulsory and elective courses, including their corresponding credit weightings and workload. Briefly, we can explain that the compulsory courses totaling 98 credits (156.8 ECTS) can be programmed in semesters 1-4, and 7, while the elective courses totaling 46 credits (73.6 ECTS) of the 157 credits (251.2 ECTS) offered, can be programmed in semesters 5 and 6. This information is presented in a table format for easy reference. Additionally, we will consolidate several courses in the next curriculum revision process, which will be displayed in a table (https://drive.google.com/file/d/1l_OrWaTfms-WcEnoCO0j29ovd2NwGfJcM/view?usp=drive_link).

Table 1.3. Recapitulation of Degree Programme Workload which is Restructured in Compulsory and Elective Courses

Study Program	Workload	Compulsory	Elective	Link
BPF (4 Study interests)*				
1. FM	144 SCU / 230 ECTS	132 SCU/ 211 ECTS	12 SCU/ 19 ECTS	https://fahutan.unmul.ac.id/prodi-s1/ikhtisar_kurikulum
2. FPT	144 SCU / 230 ECTS	134 SCU/ 214 ECTS	10 SCU/ 16 ECTS	
3. TS	144 SCU / 230 ECTS	132 SCU/ 211 ECTS	12 SCU/ 19 ECTS	
4. FRCE	144 SCU/ 230 ECTS	129 SCU/ 206 ECTS	15 SCU/ 24 ECTS	
BPA	144 SCU/ 230 ECTS	98 SCU/156.8 ECTS	46 SCU/ 73.6 ECTS	https://agt.faperta.unmul.ac.id/kurikulum/
BPAPT	144 SCU / 230 ECTS	117 SCU / 187.2 ECTS	27 SCU / 43.2 ECTS	https://yin.thp.unmul.ac.id/thp/kurikulum-program-sarjana/
MPF (Regular and By Research Program)				
1. Regular	56 SCU / 89.6 ECTS	48 SCU / 76.8 ECTS	8 SCU / 12.8 ECTS	https://psmik.fahutan.unmul.ac.id/curriculum overview-MPF-regular

2. By Research		50 SCU / 80 ECTS	6 SCU / 9.6 ECTS	https://psmik.fahutan.unmul.ac.id/curriculum overview-MPF-by research
DPF (Regular and By Research Program)				
1. Regular	70 SCU / 112 ECTS	52.0 SCU / 83.2 ECTS	18.0 SCU / 28.8 ECTS	https://psdik.fahutan.unmul.ac.id/curriculum overview-DPF-regular
2. By Research		68.0 SCU / 108.8 ECTS	2.0 SCU / 3.2 ECTS	https://psdik.fahutan.unmul.ac.id/curriculum overview-DPF-by research

* Forest Management (FM), Forest Products Technology (FPT), Silviculture (TS), Forest Resources Conservation and Ecotourism (FRCE)

** *SCU: Semester Credit Unit = SKS in Indonesia*

*** *ECTS: European Credit Transfer System*

Soft skills development

The development of soft skills, including entrepreneurship, leadership, communication, and teamwork—has been implemented by BPF, MPF and DPF through a project-based learning approach with measurable assessments. Practitioners have been invited to teach in several courses, providing students with industry-relevant knowledge and practical insights. Their involvement enhances the learning experience by bridging academic concepts with real-world applications and enhance learning outcomes (e.g. https://fahutan.unmul.ac.id/pkkm/program_praktisi_mengajar_dikampus). In curriculum revision and improvements, a project-based approach with measurable assessments has been implemented to enhance the development of those soft skills, and these are confirmed in specific course modules.

The BPAPT and BPA offer various applied courses that focus on developing technical skills in processing and product innovation and are also designed to enhance students' soft skills. In addition, elective courses are available, providing students with opportunities to deepen their entrepreneurial, communication, and problem-solving skills, which are essential in industry and entrepreneurship. Through this combination, graduates are expected to possess holistic competencies, encompassing technical expertise and the interpersonal and intrapersonal skills required in the professional world.

Table 1.4. Examples of Course Modules that Incorporate Soft Skills Development (Entrepreneurship, Leadership, Communication, and Teamwork)

Study Program	Course Modules	Specific Soft Skills	Link
BPF	Pendidikan Agama (*Religion*),	Leadership, Communication	https://fahutan.unmul.ac.id/prodi-s1/kurikulum
	Basic of Management	Leadership, Teamwork, Communication,	
	Forestry Entrepreneurship (Kewirausahaan Kehutanan)	Entrepreneurship, Teamwork, Leadership,	
	Forest Management	Teamwork, Leadership, Communication	
BPA	• Pendidikan Agama (*Religion*), • Pancasila (*Pancasila*), • Bahasa Indonesia (*Indonesian Language*), • Ilmu Sosial dan Budaya Dasar (*Social Science and Basic Culture*), • Kewarganegaraan (*Citizenship*), • Pengantar Ilmu Pertanian Tropika Lembab (*Introduction of Humid Tropical Agriculture Science*), • Kewirausahaan (*Entrepreneurship*) • Bahasa Inggris Pertanian (*Agricultural English*), • Praktik Kerja Lapangan (*Field Work*), • Kuliah Kerja Nyata (*Community Service Program*), • Seminar, • MBKM (*Freedom learning*)	Teamwork, Leadership, Communication, Entrepreneurship	https://agt.faperta.unmul.ac.id/kurikulum/
BPAT	Fisiologi dan Teknologi Pasca Panen *(Post-harvest Physiology and Technology)*	Leadership, communication, teamwork	https://drive.google.com/file/d/1Hysj-1GH6gDMc3MKKdlF-hih3zdIqxa1g/view?usp=drive_link
	Sanitasi dan Keamanan pada Proses Pengolahan *(Sanitation and Safety in the Food Processing Industry)*	Leadership, communication, teamwork	https://drive.google.com/file/d/17gu90A-WoEt2Ne58Q4yckybB1SY

Study Program	Course Modules	Specific Soft Skills	Link
			xT4Rii/view?usp=drive_link
	Kewirausahaan (*Entrepreneurship)*	Leadership, communication, teamwork	https://drive.google.com/file/d/1dHSTS5qo1BKgPuDwld5c6BO-TmzWllK7/view
	Teknologi Proses Pengolahan *(Food Process technology)*	Leadership, communication, teamwork	https://drive.google.com/file/d/1FqWPXVdzz6Mwh-GbWuvxFVCRJgIdL-bw/view?usp=drive_link
	Teknologi Lemak dan Minyak *(Oil and Fat Technology)*	Leadership, communication, teamwork	https://drive.google.com/file/d/1-cVuq-vBfSDvS8IRcwyqvOHERBsOYy8Y/view?usp=drive_link
MPF	Advanced Forest Products Processing	Communication	https://docs.google.com/document/d/1MTB0bWGoz9cgiflp8soaetoPfWRt-gvHe/edit
	Advanced Agroforestry	Leadership, communication, teamwork	https://docs.google.com/document/d/1IBPzC3xj0dmFCSwpiU1Oqq9qPWLo-vWsh/edit
	Planning and Development of Tourist Destination Areas	Leadership, communication, teamwork	https://docs.google.com/document/d/14gPCMxU7_zxS70dweC6mhZSx-HChBbKe/edit
DPF	Research Methodology and International Publication	Leadership, Communication, and Teamwork	https://docs.google.com/document/d/1W_Wqk0-tz4L11LcdL8tWDxCUYicKJMrq/edit
	Technology of Aromatic Plants Processing	Entrepreneurship	https://docs.google.com/document/d/1mu1CGvO

Study Program	Course Modules	Specific Soft Skills	Link
			OXD36vZPM8swyc-MRCpsPFBj2/edit
	Silviculture Decision in Site Level	Leadership, Communication, and Teamwork	https://docs.google.com/document/d/14mx4pIpWj0IQth9xyDbOUbsgi3ppL-NAb/edit

Student project-based assessment scheme

Project-based assessment scheme has been ruled in Rector of Mulawarman University Regulation No. 5 of 2023 on the Implementation of Education and Teaching, Research, and Community Service in Mulawarman University in article 38. (Rector Regulation).

Table 1.5. Learning Methods and Domain

Learnning Methods	Domains		
	Knowledge (Kognitif)	Attitude of Values (Afektif)	Skills (Psikomotor)
Small Group Discussion	√	√	√
Simulasi/Demonstrasi	√	√	√
Studi Kasus/Metode Kasus	√	√	√
Cooperative Learning	√	√	√
Contextual Instruction (CL)	√	√	√
Problem-Based Learning (PBL)	√	√	√
Discovery Learning	√	√	√
Project Based Learning (PjBL)	√	√	√
Production Based Training	√	√	√
Project Based Learning	√	√	√
Inquiry Learning	√	√	√

Collaborative Learning	√	√	√

Duration of internship

The academic regulations of Universitas Mulawarman clearly outline two learning methods: structured and unstructured learning. Structured learning refers to educational activities that follow a predetermined curriculum with specific learning outcomes, often delivered through lectures, laboratory work, or classroom-based courses. In contrast, unstructured learning is based on problem observation and problem-solving using various scientific approaches, whether within a single discipline or through multidisciplinary collaboration. Programs such as Practical Work (PKL), Community Service (Kuliah Kerja Nyata/KKN), and Internships (Magang) are examples of unstructured learning models.

Duration of internship is aligned and socialized through Quality Assurance Center for Learning Development and Quality Assurance (LP3M). The table overviews three academic programs at Universitas Mulawarman: Practical Work (PKL), Community Service (KKN), and the MBKM Internship Program.

Table 1.6. Comparison of Practical Work (PKL), Community Service (KKN), and MBKM Internship Program at Universitas Mulawarman.

Program	Main Focus	Credit Load (SCU)	Student Requirements	Duration	Evaluation
Practical Work (PKL)	Application of theory in real-world practice	2 SCU (3.2 ECTS)	Minimum 75 SCU (170 ECTS), GPA ≥ 2.00, no grade E	16–20 working days (1–1.5 months)	Daily logbook, seminar, written report
Community Service (KKN)	Community engagement based on scientific knowledge	3 SCU (4.8 ECTS)	Minimum 110 SCU (176 ECTS), GPA ≥ 2.00, including current courses	24–30 working days (1–1.5 months)	Daily logbook, seminar, report/publication/product

Internship	Skill development and understanding of the workplace	Up to 20 SCU (per semester)	Minimum 80 SCU (128 ECTS), GPA ≥ 2.00, no grade E	Full semester (approximately 4–6 months)	Activity report, mentor evaluation, certificate, SKPI recognition

PKL

Practical Work (PKL) is designed to bridge the gap between theoretical knowledge acquired in academic settings and real-world practices. PKL focuses primarily on the application of theoretical concepts in practical environments. This program is typically part of the formal curriculum and carries a credit load of 2 SCU. The activities involve 8–10 hours of weekly fieldwork, amounting to 128–160 hours over a semester. When converted into working days, this translates to a minimum of 16 working days (approximately 3 weeks) and 20 working days (around 1 month), with potential extensions due to company orientation or evaluation periods. Evaluation in PKL is conducted through daily logbooks, oral presentations (seminars), and written reports documenting the student's experiences and learning outcomes.

KKN

Community Service (KKN) aims to integrate academic learning with community engagement. The primary focus of KKN is on applying scientific knowledge to support community development. It carries a credit load of 3 SCU and can only be undertaken by students who have completed more than 110 credits with a minimum GPA of 2.00. The program requires 12–15 hours of field activities per week, totaling 192–240 hours in one semester. This corresponds to 24–30 working days or approximately 1- 1.5 months of community-based work. Students are evaluated through daily activity logs, seminars, and comprehensive reports that may include publications or community-based projects.

Internship / MBKM

Internship (Magang) is an experiential learning process designed to allow students to apply the theoretical knowledge they have gained in academic settings to real-world professional environments. The primary goal of an internship is to bridge the gap between classroom learning and practical work experience, enabling students to develop complex and soft skills essential for their future careers. Through internships, students are exposed to workplace dynamics, allowing them to understand industry practices, organizational culture, and professional expectations. Internships can

vary in structure, duration, and focus, depending on the field of study and the needs of the hosting organization. Typically, students engage in various SCU and projects related to their academic background, which helps them gain hands-on experience, build professional networks, and enhance problem-solving abilities. The learning outcomes of an internship include improved technical skills, critical thinking, teamwork, communication, and adaptability—qualities highly valued in today's job market.

In the broader context of experiential learning, the Merdeka Belajar-Kampus Merdeka (MBKM) program at Universitas Mulawarman extends unstructured learning models, offering students greater flexibility to gain real-world experience. Officially recognized as part of internship activities under academic regulations, MBKM provides a structured platform for students to engage in diverse experiential learning opportunities, including Teaching Campus, Certified Internship, Independent Study, Student Exchange, Entrepreneurship Program, Research Program, Humanitarian Project, Village Development, and State Defense Program. While internships can exist independently as part of the academic curriculum, MBKM enhances these opportunities by facilitating hands-on experiences in industries, organizations, and research environments relevant to students' academic and professional development. These programs aim to strengthen students' professional skills, leadership, and problem-solving abilities in real-world settings. Participants receive academic recognition through certificates and/or credit conversion (up to 20 SCU per semester), officially documented in the Diploma Supplement (SKPI). By offering flexible, diverse, and industry-relevant learning experiences, MBKM complements traditional internships and better prepares students for future careers.

Study period

According to Rector of Mulawarman University Regulation No. 5 of 2023 on the Implementation of Education and Teaching, Research, and Community Service in Mulawarman University, undergraduate program takes min. 8 semester and max. 14 semester, magister program takes min. 3 semester and max 8 semester, as well as doctoral program takes min. 6 semester and max. 14 semesters.

However, all study programmes have attempted to shorten the study period by revising the curriculum. For instance, the Faculty of Agriculture has revised the curriculum in 2022 by ruling the end of theory in 6th semester, so final student assignment can be wrapped up in 7th semester. In 2024, the study period is faster than previous year becoming 5 years. In addition, BPAPT has imple-

mented a recognition system for student achievements and innovations at both national and international levels to accelerate student graduation. Furthermore, students in the final project stage are regularly monitored and evaluated.

The Faculty of Forestry also recently revised the curriculum for 2024. According to recent data, study periods still fall within acceptable study periods based on the regulation but tend to be much shorter in the past three years.

Table 1.6. Updated Graduation Data for Each Study Program

Program	**Number of Graduates**		
	2022	**2023**	**2024**
BPF	161	204	203
BPAPT	53	107	64
BPA	90	94	149
MPF	1	13	27
DPF	11	4	5
Program	**Average Grade**		
	2022	2023	2024
BPF	3.08	3.16	3.19
BPAPT	3.20	3.32	3.27
BPA	3.41	3.45	3.55
MPF	3.86	3.85	3.88
DPF	3.96	3.85	3.97
Program	**Average Study Duration**		
	2022	**2023**	**2024**
BPF	5 years 7 months	5 years 5 months	4 years 8 months
BPAPT	5 years 8 months	5 years 4 months	5 years 3 months
BPA	5 years 6 months	5 years 7 months	5 years 1 months
MPF	2 years 10 months	3 years 6 months	3 years 4 months
DPF	5 years 7 months	6 years 8 months	5 years 10 months

The Bachelor Programme of Forestry (BPF) consistently produced the highest number of graduates over the years, with 161 graduates in 2022, increasing to 204 in 2023, and slightly decreasing to 203 in 2024. Across all programs, there was a general improvement in average grades over the years. For BPF, the average grade increased from 3.08 in 2022 to 3.19 in 2024. The average study duration for BPF students decreased slightly in 2023 and decreased 4-year 8 month in 2024.

The Bachelor of Agriculture Product Technology Programme (BPAPT) consistently produced a number of graduates over the years, with 53 graduates in 2022, increasing to 107 in 2023, and decreasing to 64 in 2024. The average grade increased from 3.20 in 2022 to 3.27 in 2024. The average study duration of students decreased slightly in 2023 and decreased 5 years and 3 months in 2024.

The Bachelor Program of Agroecotechnology (BPA) consistently produced a number of graduates over the years, with 90 graduates in 2022, increasing to 94 in 2023, and increasing to 149 in

2024. The average grade from 3,41 in 2022 to 3,55 in 2024. The average study duration of student increases slightly in 2023 and decreased 5-year 1 months in 2024.

For the Master Programme of Forestry (MPF), the number of graduates rose sharply, from just 1 graduate in 2022 to 13 in 2023, and further to 27 in 2024, reflecting a growing completion rate. MPF consistently achieved the highest average grades, rising slightly from 3.86 in 2022 to 3.88 in 2024. MPF had an increase in average study time, from 2 years and 10 months in 2022 to 3 years and 6 months in 2023, then decreased slightly in 2024.

The Doctoral Programme of Forestry (DPF) had low graduate numbers, fluctuating from 11 in 2022 to 4 in 2023, with a slight increase to 5 in 2024. DPF had the most fluctuation but maintained high averages, ranging from 3.85 to 3.97 over the three years. DPF displayed irregular trends, with the average study duration fluctuating between 5 years and 10 months to as high as 6 years and 8 months in 2023.

Development of monitoring system in analyzing effort to shorten the student's length of study

Mulawarman University has developed an academic monitoring system, which has been enhanced since 2023 to track the causes of student dropouts and extended study durations. This system, known as the Academic Integrated System (AIS), was implemented in 2024, enabling Program Study Coordinators to effectively monitor students' academic progress. AIS integrates comprehensive data on students' academic activities, study achievements, applied curriculum, course lists, semester grades, cumulative grades, and more.

The AIS monitoring display is shown below:

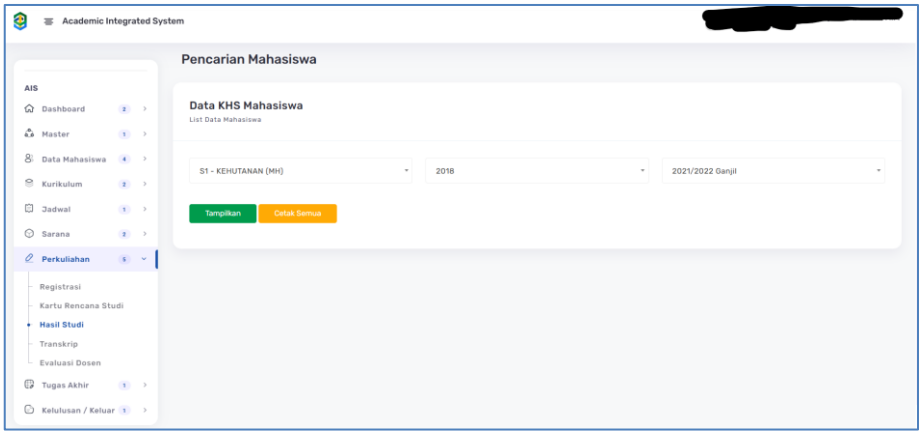


Figure 1. Monitoring display for Student Result Study

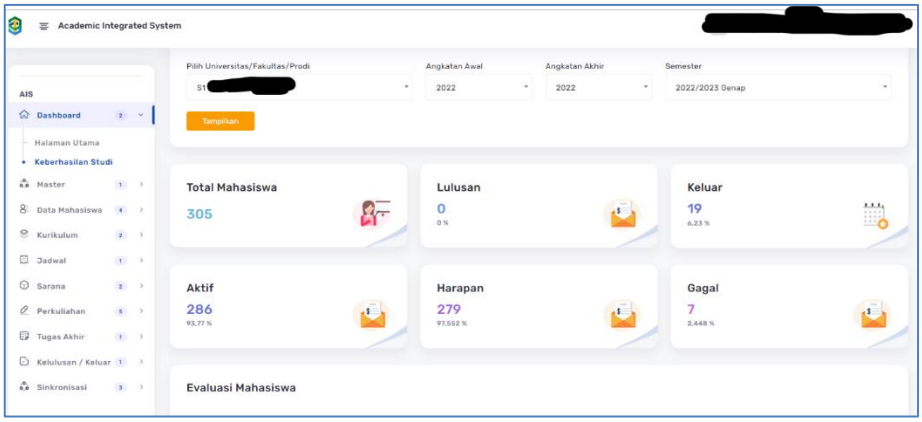


Figure 2. Monitoring display for Completion Study

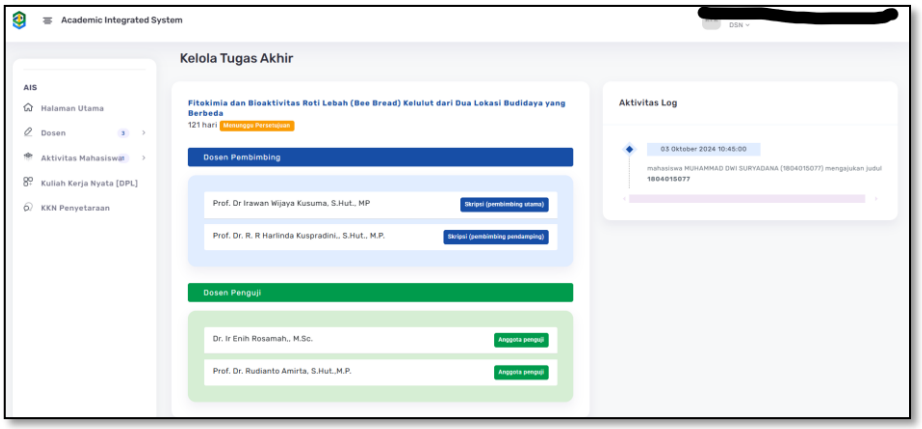


Figure 3. Monitoring display for Final Thesis Progress

The large number of modules should be reduced by increasing the module size

The Faculty of Agriculture will revise the curriculum by restructuring courses that are closely related and/or have overlapping scientific content, thereby reducing the number of courses and the credit weight in terms of SCU or ECTS.

BPAPT has revised the curriculum structure by outlining the distribution of mandatory and elective courses with clearly defined credit weights and workload, presented in a tabular format. Course consolidation will occur during the curriculum revision process, also displayed in a table. The plan for merging several courses is attached (course merging plan).

Meanwhile, the Faculty of Forestry, especially BPF, has recently revised curriculum in October 2024, which will be implemented in the odd semester of the 2025/2026 academic year. The available modules are still aligned with the existing study concentrations. Therefore, many modules are still needed to represent the unique characteristics of each study concentration that students

must acquire. However, for future improvements, BPF will analyze and revise the curriculum at least four years after the newly revised curriculum is implemented, with a focus on reducing the number of modules.

Student workload monitoring

A method for monitoring student workload has been implemented. We collect structured student feedback on course workload through summative course evaluation surveys and separate workload surveys. The results are analyzed and published on our website to ensure transparency and continuous improvement.

Table 1.7. Data Workload Student Survey

Study Program	Link
BPF	https://fahutan.unmul.ac.id/workload survey-BPF
BPA	https://agt.faperta.unmul.ac.id/survey-work-load-mahasiswa/
BPAPT	https://yin.thp.unmul.ac.id/thp/survey/
MPF	https://fahutan.unmul.ac.id/workload survey-MPF
DPF	https://fahutan.unmul.ac.id/workload survey-DPF

Academic Mobility

Student and faculty mobility will be further supported through enhanced international collaboration, scholarship programs, and the provision of courses in English. Mulawarman University through the Centre for International Services facilitates such programs (https://oia.unmul.ac.id/programs/ict/), Summer School (https://oia.unmul.ac.id/suntropis/). Each year, the Centre for International Services organize internship with quota of 2 students for Thailand under cooperation with King Mongkut's University of Technology Thonburi (KMUTT) for 2-3 months.

In addition, Language Centre of Mulawarman University provides paid-course program, i.e. English for Children, Pre-Elementary, Elementary, Upper-Elementary, Pre-Intermediate, Intermediate, Upper-Intermediate, Advanced, Conversation Class, TOEFL, IELTS, TOEIC and Japanese Class for Beginner (https://bahasa.unmul.ac.id/page/post/Kursus), as well as free training such as English Day (https://bahasa.unmul.ac.id/berita/posteng/Englisdh.Day.2024).

Scholarships for international collaboration have been provided by the university through ISDB funding. The Faculty of Forestry has undertaken efforts to promote international programs for

lecturers and students by participating in promotional events organized at the university level, including the dissemination of information on programs such as AMINEF/Fulbright, DAAD, LPDP, Ministry of Higher Education, Science and Technology (Kemdiktiristek)/STUNED, BRIN, and others.

The Faculty of Forestry and Faculty of Agriculture have their own program to support international academic mobility. There is an international academic mobility program for students that has been continuously implemented for the last three years. For example, students from the BFP and MFP study programs participate in international student exchange programs through International Student Exchange Program (ISEP) in cooperation with three universities in Japan, i.e. Kyoto University, Kyoto Prefectural University and Mie University (https://www.kpu.ac.jp/campus-life/international/studyabroad/mulawarman-96203/). Similarly, students from three Japanese universities conduct academic mobility at the Faculty of Forestry (https://fahutan.unmul.ac.id/berita/antusiasme-mahasiswa-jepang-dalam-mengikuti-program-international-student-exchange-di-fahutan). The funding for this activity is partially sourced from the BOPTN (financial assistance from the government to cover operational cost at state universities) student mobility fund of the Faculty of Forestry, as well as financial support from a corporate partner from Japan, J. Hayashida Inc.

The international student mobility program at BPF, Faculty of Forestry, also includes students from other countries, such as Timor-Leste (https://fahutan.unmul.ac.id/berita/evaluasi-mahasiswa-timor-leste) which is a MoU implementation between Mulawarman University and Timor Leste Ministry of Agricultures and Fisheries (https://unmul.ac.id/news/kerjasama-dua-negara,-unmul-tandatangani-mou-bersama-pemerintah-timor-leste). In addition, international students from Dilla University, Ethiopia, are also studying at DPF, Faculty of Forestry.

In 2025, three international students from Cornell University, USA, are scheduled to study at BPF. This program is a continuation of the research collaboration between the Faculty of Forestry and the Center for Conservation Bioacoustics, Cornell Lab of Ornithology, Cornell University, USA. (https://fahutan.unmul.ac.id/kerjasama/detail/berbagi-pengetahuan-metodologi-identifikasi-satwa-liar--kerjasama-fakultas-kehutanan-universitas-mulawarman-dengan-cornell-university-usa-).

Every year, students from the MPF and DPF study program actively participate in international seminars, including Borneo Islamic International Conference (https://unissa.edu.bn/kaib2024/) and Indonesian Wood Research Society (IWoRS) (https://iwors.fahutan.untan.ac.id/), International Symposium on Tropical Forestry and Environmental Sciences (ISEP) (https://conference.fahutan.unmul.ac.id/index.php/ISTFES_3/2023), Inter-

national Conference on Mathematics and Sciences (ICMSc) (https://conference.fmipa.unmul.ac.id/index.php/icmsc/2022), International Conference on Medical Science and Health (1st ICOMESH) (https://heti.unila.ac.id/2023/10/17/international-conference-on-medical-science-and-health-icomesh/), Forest and Society International Conference (FSIC) (https://fsic.events.unhas.ac.id/), International Conference on Forest City (ICFC) (https://icfc.fahutan.unmul.ac.id/index.php/icfc). The Faculty of Forestry provides support by recommending faculty members for mentoring in article writing and offering financial assistance for student article publications from the international seminar through an academic grant scheme (https://fahutan.unmul.ac.id/hibah/).

The national-scale student mobility program at BPF is part of the student reasoning, interest, and talent development activities funded by the MBKM Program, Ministry of Research Technology and Higher Education (https://pusatinformasi.kampusmerdeka.kemdikbud.go.id/hc/id), Among them are the Internship and Independent Study Program (MSIB), the Kampus Mengajar Program, the Independent Entrepreneurship Program, and the Independent Student Exchange Program. The Faculty of Forestry also organizes student mobility activities such as industrial internships, student group entrepreneurship, extracurricular achievement programs, and student mobility activities under student organizations, with financial support from the BPOPTN funding scheme of the Faculty of Forestry. Additionally, several other BPF student internship programs are implemented through collaborations with industries and partners of the Faculty of Forestry, including PT. Freeport Indonesia, PT. Toba Pulp Lestari, ESRI Indonesia, BRGM, PT. Mazano Daya Rekayasa, PT. Royal Lestari Utama, PT. TRIFOS International Certification (TRIC), SEAMEO Biotrop, GIZ Peatland Rehabilitation and Management, PT. Nadila Indodaya, and the East Kalimantan Provincial Forestry Office. The BPF study program also facilitates student mobility from other universities, allowing them to study at the Faculty of Forestry for one semester. This includes students from the Faculty of Forestry at Tadulako University and students from the Forestry Study Program, Faculty of Agriculture, Cendana University in Kupang.

The Faculty of Agriculture has allocated a budget for faculty and student activities at the international level in collaboration with universities that have established MoUs, such as Kyoto University and Brunei Darussalam University.

Table 1.8. Student Mobility for Each Study Program

Student mobility (International)						
Program	**Inbound***			**Outbound****		
	2022	**2023**	**2024**	**2022**	**2023**	**2024**
BPF	10	31	21	14	7	10
BPAPT	5	28	17	-	-	1
BPA		28	6		1	1
MPF	-	6	-	1	9	5
DPF	1	4	3	5	3	5
Program	**Student mobility (National/MBKM)**					
	Inbound			**Outbound**		
	2022	**2023**	**2024**	**2022**	**2023**	**2024**
BPF	11	29	12	7	25	48
BPAPT	23	2	-	4	6	5
BPA		3		6	8	2
MPF	-	-	1	-	1	2
DPF	-	-	-	-	2	-

*Inbound: National/ international students come to study at the university
** Outbound: Student exchange programs where students from the university travel to study at another institution

1.4 Admission Requirements

Based on our latest records, BPF, MPF and DPF have observed an increase in both the number of applicants and accepted students across our programs. This trend contrasts with the noted decline in student applications and admissions mentioned in your report. To ensure alignment, we propose data verification and comparison below.

Table 1.9. Student number statistic for BPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
2019	308	418	726	134	119	253
2020	305	413	718	136	120	256
2021	343	379	722	161	171	332

2022	388	440	828	168	137	305
2023	477	348	825	168	171	339
2024	478	389	867	194	147	341

Table 1.10. Student number statistic for MPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	11	1	12	11	1	12
2020	28	4	32	27	4	31
2021	9	13	22	9	12	21
2022	9	7	16	9	6	15
2023	8	6	14	8	3	11
2024	11	8	19	10	7	17

Table 1.11. Student number statistic for DPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	3	0	3	3	0	3
2020	0	0	0	0	0	0
2021	1	2	3	1	2	3
2022	4	0	4	4	0	4
2023	5	2	7	5	2	7
2024	6	2	8	5	2	7

Regardless of the observed increase, we recognize the need for proactive measures to sustain and further enhance student interest in our programs. We fully support the expert panel's recommendations. The Faculty of Forestry has developed several strategies to strengthen student interest in the Bachelor, Master, and Doctoral Programs in Forestry, including:

1) Strengthening Marketing Efforts, such as:
    a. conduct visits to high schools, vocational schools, and undergraduate programs to introduce the opportunities in forestry education,
    b. engage successful alumni and current students as program ambassadors to share experiences and career prospects through seminars, social media, and alumni networks

(https://fahutan.unmul.ac.id/berita/-alumni-dan-mahasiswa-fakultas-kehutanan-tampil-membanggakan-dalam-rangkaian-acara-hut-ri-ke-79-di-ibu-kota-nusantara-baru) .

c. develop an informative, user-friendly, and visually appealing website with detailed program descriptions, success stories, career opportunities, and application guidance.
d. utilize platforms like Instagram, YouTube, and TikTok for promotional videos, faculty spotlights, student testimonials, and research highlights.
e. organize interactive online events featuring faculty members, industry professionals, and alumni to engage prospective students (https://fahutan.unmul.ac.id/berita/workshop-lanjut-studi-mahasiswa-dan-lulusan-fahutan-unmul) .
f. optimize website content for search engines and run targeted digital advertising campaigns on Google, Facebook, and other platforms.

2) Building partnerships with industry and government agencies to promote our programs (establish agreements with companies and institutions in forestry, conservation, agroforestry, and sustainable development to create internship and job placement opportunities, work with ministries, environmental organizations, and NGOs to promote forestry education as a strategic field for sustainable development) https://fahutan.unmul.ac.id/kerjasama ; https://fahutan.unmul.ac.id/berita/job-fair-2024-dan-open-recruitment-bagi-mahasiswa-dan-lulusan-fahutan-unmul
3) Supporting Startups and Innovation. In addition to providing faculty grants for entrepreneurial programs, (https://fahutan.unmul.ac.id/berita/program-bantuan-pengembangan-wirausaha-mahasiswa-fakultas-kehutanan-universitasn-mulawarman-tahun-2024) . in 2024, the Bachelor Program in Forestry (BPF) received a grant from the Ministry of Education, Culture, Research, and Technology to develop entrepreneurial initiatives in forestry, promote research commercialization, and support student-led startups in sustainable forest management and bio-based industries. (https://fahutan.unmul.ac.id/pkkm/aktivitas) ;
4) Innovative Teaching and Learning Methods, including the integration of experiential learning, digital learning platforms, and industry collaborations to enhance student engagement and practical skills (https://unmul.ac.id/news/unmul-peringkat-tiga-nasional-program-praktisi-mengajar-siapkan-kompetensi-mahasiswa-di-dunia-kerja) ;
5) Exploring Alternative Topics: To attract new applicants, we will expand our curriculum to include interdisciplinary and emerging fields, such as forest-based bioproducts, climate resilience, eco-tourism, and environmental data analytics.

The number of students who apply and are accepted at BPA and BPAPT fluctuates yearly. However, when viewed as a whole, there is a stable trend in the number of applicants and admissions. This indicates that despite variations in the number of applicants and admissions each year, BPA and BPAPT have generally succeeded in maintaining their appeal and attractiveness among prospective students.

Table 1.12. Student number statistic for BPA

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	257	277	534	43	82	125
2020	240	114	354	63	41	104
2021	121	149	270	70	48	118
2022	169	126	295	56	55	111
2023	147	129	276	61	49	110
2024	132	133	265	73	56	129

Table 1.13. Student number statistic for BPAPT

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2020	108	147	255	30	43	73
2021	106	156	262	44	38	82
2022	97	171	268	36	36	72
2023	99	190	289	33	43	79
2024	109	169	278	40	36	76

The improvement plan implemented by BPAPT includes promoting the study program through TSO (Target School Object) for high school (SMA) and vocational school (SMK) students. Promotion can be conducted directly at schools or through on-campus activities in collaboration with the Student Association. BPAPT also aims to establish partnerships with SMA/SMK by organizing benchmarking programs, enhancing and developing teacher competencies, and facilitating internships (PKL). Additionally, community service activities as part of the university's Tri Dharma initiatives will be carried out in the institution's surrounding areas.

Furthermore, students returning to their hometowns each semester will be encouraged to distribute study program leaflets to their former schools. Competitions, such as scientific writing

contests on food-related topics and food processing competitions, will also be held at the high school/vocational school level.

1.5 Workload and credits

The 288 ECTS earned by MPF was lower than the minimum workload for international standards (300 ECTS). This was based on previous regulations (Regulation of Ministry of Education and Culture Number 3 of 2020 on National Standard for Higher Education and Rector Regulation Number 17 of 2020 on the Implementation of Education and Teaching, Research, and Community Service Based on Independent Campus and Freedom to Learn) mentioning that workload credit requirement for MPF was 36-38 SCU (equal to 57.6-60.8 ECTS).

The workload of the MPF is reviewed at the national level by the Regulation of the Minister of Education, Culture, Research, and Technology Number 53 of 2023 on Higher Education Quality Assurance, which explicitly states that the learning workload for master's/master's applied programs is 54-72 SCU (equal to 86.4-115.2 ECTS) with a curriculum duration of 3-4 semesters, and is also adapted in Rector Regulation Number 5 of 2023 on the Implementation of Education and Teaching, Research, and Community Service at Mulawarman University mentioning that the study workload for master's, applied master's, and specialist levels is more than 54 SCU (equal to 86.4 ECTS). Therefore, our final review of the MPF workload results in 56 SCU (89.6 ECTS) for both tracks, regular and by research program, which we believe is within workload for international standards. There is no difference in the number of credits awarded for both tracks, in which the research track requires more work and time. The credits awarded for each module correspond to the actual workload of the students. The revised workload is aligned in all legal documents, such as website and curriculum documents.

The same applies to the doctoral programme, whose two tracks previously had 42-44 SCU (67.2-70.4 ECTS). Therefore, our final review of the DPF workload results in 70 SCU (112 ECTS) for both tracks, regular and by research program, which we believe is within workload for international standards.

1.12. Workload of the MPF and DPF

Study Program	**Workload**				**Link**
	Before		**After**		
	SCU	**ECTS**	**SCU**	**ECTS**	
BPF	144	230	144	230	

MPF Regular	34-36	54.4-57.6	56	89.6	https://psmik.fahutan.unmul.ac.id/curriculum_overview_MPF_regular program
MPF by Research	34-36	54.4-57.6	56	89.6	https://psmik.fahutan.unmul.ac.id/curriculum_overview_MPF_by research
DPF Regular	42-48	67.2-76.8	70	112	https://psdik.fahutan.unmul.ac.id/curriculum_overview_DPF_regular_program
DPF by Research	44-45	70.4-72.0	70	112	https://psdik.fahutan.unmul.ac.id/curriculum_overview_DPF_by_research

1.6 Didactics and Teaching Methodology

Clear. The diversity of teaching methods and the extensive range of practical courses in the study programs ensure the achievement of the course objectives and the overall intended learning outcomes.

2. System, Concept, and Exam Organization

The ASIIN expert panel has given some recommendations on Section 2 - Exams: System, Concept, and Organization. We appreciate and agree with the recommendation and followed by improvements as follows:

1. Examination system in the program, including the adjustment of the uses of multiple choices-type examinations in relation to the level and content of the courses;
2. Documentation of minimum grading criteria for MSc and PhD theses to implement quality assurance.

2.1 System and Concept

Clear

2.2 Class Course Exam

Clear

2.3 Off-Class Exams

Clear

2.4 Thesis Criterion

The documents that assess the minimum criteria for the MPF thesis and DPF dissertation have been arranged transparently to support academic quality assurance.

Table 2.1. MPF Thesis and DPF Dissertation Criterion Assessment

Study Program	Link
MPF	https://docs.google.com/document/d/1bzee_B1DEqV7kDcT0LTP7GpZWK9s_iMh/edit
DPF	https://psdik.fahutan.unmul.ac.id/assets/kurikulum/ind/Assesment_Rubric_Dissertation.pdf

2.5 Organization

Clear

2.6 Exam Transparency

Diversification of examination formats by adjusting the level and content of the courses. Multiple-choice exams will only be used in the first year, while other evaluation forms will be expanded to assess students' skills comprehensively.

The Faculty of Agriculture and Forestry Faculty explains and provides additional documentation showing that multiple-choice exams are administered at the basic level and that the multiple-choice questions are not simple multiple-choice but are designed to assess whether students can understand, analyze, and evaluate the material in the module. It also clarifies, preferably in percentage form, that only a tiny percentage of modules implement multiple-choice examinations. Most courses use open-ended questionnaires to gauge students' understanding of course materials.

(1) Examination question documents demonstrate that the exams we conduct are diverse (not only multiple-choice but also other types of examinations/evaluations) and that the exam questions are adjusted according to the level and content of the courses.
(2) Documents show that exam questions at levels 2, 3, and 4 are not multiple-choice.

At BPAPT, fundamental courses such as Chemistry, Biochemistry, Physics, and Biology still utilize a combination of multiple-choice and essay questions to assess the material covered comprehensively. This mixed-question format is designed to evaluate different aspects of students' understanding. Multiple-choice questions help assess factual knowledge, conceptual clarity, and quick

recall, while essay questions encourage critical thinking, problem-solving, and the ability to articulate complex ideas effectively. By integrating both formats, the assessment ensures a more thorough evaluation of student's comprehension and application of scientific principles in these foundational subjects.

3. Resources

The ASIIN expert panel has highlighted some criteria in section 3 – Resources. We understand and agree with the recommendations given by making some improvements in several following aspects:

1. Improvement of faculty and student ratios (differences in the number of teaching staff and student-faculty ratios resulting from the three Bachelor Program);
2. Addition of information on staff development plans for the past 5 years;
3. Presentation of evaluation program strategies for task and workload analysis of teaching staff;
4. Strengthening Student Support and Student Services including modernization of laboratory equipment

3.1. Staf Development

Faculty of Forestry Lecturer-Student Ratio

A recalculation of the student-to-faculty ratio, as a correction to the previously submitted Self-Assessment Report (SAR), demonstrates an excellent ratio across all programs. The updated ratios are 1:20 for BPF, 1:2 for MPF, and 1:1 for DPF.

Additionally, corrections were made to the number of faculty members teaching in each program, incorporating supplementary data covering the last five years (2020–2024). Over this period, the average number of faculty members was 68 for BPF, 38 for MPF, and 35 for DPF, as detailed in Table 3.1.

Faculty of Agriculture Lecturer-Student Ratio

BPA and BPAPT have enhanced the calculation of the lecturer-to-student ratio. Until 2024, the BPA has 39 lecturers, and the BAPT has 17 lecturers with the average number of active students in BPA 2024 reaching 841 students and the BAPT reaching 446 students on average. Based on the results of the calculation of the lecturer-student ratio at BPA 2021 to 2024, is 1:22. Meanwhile, for

BAPT in 2024 has a student lecturer ratio of 1:26 in average. The ratio of lecturers and students is displayed in Table 3.1. and the link Lecturer-Student Ration_Faculty of Agriculture

Table 3.1. Lecture-Student Performance and Ratio

Year	Study Program				
	BPF	**BPAPT**	**BPA**	**MPF**	**DPF**
	Number of Lecturers				
2020	69	17	37	47	43
2021	62	17	39	36	33
2022	64	17	39	36	33
2023	67	17	39	37	34
2024	76	18	39	43	31
Mean	68	17	39	38	35
	Number of Students				
2020	1204	426	834	56	20
2021	1524	443	856	68	17
2022	1467	477	823	67	14
2023	1280	455	833	57	19
2024	1530	430	861	50	23
Mean	1401	446	841	60	19
LSR	1:21	1:26	1:22	1:2	1:1

Strategic for Staff Development in Forestry Faculty

Faculty development is continuously carried out to ensure sustainability and enhance academic competencies in alignment with the evolving forestry sector. The faculty development dynamics over the past five years (2020–2024) are illustrated in Table 3.2 (link).

Over time, several faculty members have retired, and three have passed away within this period. In response, new faculty recruitment began in 2022, with four new hires, followed by another four in 2023 and 13 in 2024. As a result, by the end of 2024, the Faculty of Forestry has 76 faculty members for BPF, 43 for MPF, and 31 for DPF, covering a range of academic qualifications and specializations.

Young faculty members are encouraged to pursue doctoral degrees to qualify for teaching positions in MPF and DPF through formal education pathways. Currently, eight faculty members are pursuing doctoral studies, including one studying abroad at the University of Tsukuba, Japan. Additionally, academic promotions are a priority, particularly towards Associate Professor (Lektor Kepala) and Full Professor (Guru Besar). To further support skill development, faculty members are

encouraged to participate in training, seminars, and workshops, with financial support provided through scholarships and faculty-funded assistance programs.

Faculty workload is evaluated every semester to ensure compliance with the regulations set by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek-DIKTI). The minimum workload requirement is 12 credit hours (SKS or SCU), covering the three pillars of higher education (Tridharma Perguruan Tinggi): teaching, research, and community service. These workloads are verified by two certified assessors and documented in the Faculty Workload Report (LKD), examples of which can be accessed here.

Furthermore, a list of faculty members' performance evaluations for the odd semester of the 2023/2024 academic year is available here.

Strategic for Staff Development in Faculty Agriculture

Additionally, BPA and BPAPT have improved the career development framework for lecturer functional positions over the past five years and formulated a career development plan for lecturer staff for the next five years, with relevant links provided in Table 3.2. The Faculty of Agriculture strives to develop staff through educational support as well as through workshops, seminars, training, and competency tests. In addition to being carried out independently within the faculty through training subsidies and competency improvement, at the university level, there are institutions that facilitate staff development, namely the Institute for Research and Community Service, Education Development and Quality Assurance, and the International Office. The Institute for Research and Community Service is for research development, book writing, and intellectual property rights. The Education Development and Quality Assurance Institute provides quality assurance and character education training and applied approaches. Meanwhile, the International Office assists staff who wish to study or train abroad.

The Faculty of Agriculture also recommends staff who want to continue their studies at national and international universities at government expense and provides stimulant financing for further studies for staff who continue their studies at Mulawarman University, especially in the S3 Doctoral Study Program in Agricultural Sciences.

The career development plan for lecturers and staff at the Faculty of Agriculture, Mulawarman University during 2019-2024 refers to the retirement age and the level of study that has been taken by lecturers which allows lecturers to increase their academic career positions. Until 2024, the number of professors at the Faculty of Agriculture reached 16 professors with 8 professors from

BPA with the competencies of Plant Breeding, Plant Breeding and Biotechnology, Plant biotechnology and molecular biology, Nematology, Soil and Water Conservation, Soil Survey and Land Evaluation, Plant Disease Epidemiology and Disease Biocontrol and Tropical humid soil While the achievements of Professors at BPAPT until 2024 are 3 professors with the fields of study Oil and Fat Science and Technology, Nutrition and Food, and Food Processing Technology. The achievement of lecturer career development until 2024 cannot be separated from the lecturer career development planning program and the assistance provided for the achievement of lecturer career paths, among others, is done by improving and encouraging lecturer education and training qualifications to be more competent, maintaining lecturer welfare with adequate incentives and facilities, encouraging academic productivity in research and scientific publications, establishing collaboration or cooperation with industry and other universities for the exchange of knowledge and experience.

Staff development efforts, especially for the level of Associate Professor and Professors, are carried out by providing research stimulant facilities both from the faculty and from the ministry as well as the assistance of a special team to assist lecturers in fulfilling the requirements for functional position increases such as achieving passing scientific publications in reputable journals. Further study stimulants are provided by both the faculty and the ministry or funding from third parties to lecturers who will carry out further studies, and this is also a lecturer career development strategy that has been carried out by the faculty and will continue for the next 5 years.

Career development for education personnel who require special competencies such as laboratory assistants and other education personnel is carried out by including education personnel in training and competency test certificates by certified institutions and other training that supports the implementation of the duties and functions of education personnel. Certificates related to training, workshops and lecturer competency tests are presented in the following link https://drive.google.com/drive/folders/1PpZL8Jw6Pw1X4T33JSBi9t95rjCwwkgo

Predictions for the next 5 years, based on the table of academic position development plans for the Faculty of Agriculture 2025-2029 that the number of professors is predicted to reach 16 professors by 2029 in the BPA, the BPAPT still produce 8 professors Potential career advancement under professors is expected to increase in the next 5 years, for example for the BPA in 2025-2029 from 16 functional positions of Associate Professor to 22 Associate Professor, and from 11 Lecturers to 6 Lecturers, this is because many lecturers who occupy the position of Lecturer are expected to rise to the position of Associate Professor. As for the BPAPT, from 3 lecturers with the position of Associate Professor in 2024, it is expected that in 2029 there will be 8 Associate Professor. As for

the position of Lecturer, from 10 lecturers to 2 Lecturers. From 2 Junior Assistant Prof in 2024 to 16 Junior Assistant Prof in 2029. This is due to the recruitment of new lecturers as preparation for lecturers who are approaching retirement. Staff development plans at the Faculty of Agriculture in 2019 to 2024 presented in this following link (Staf Development Plan_Faculty of Agriculture_2019-2024) and plans for 2025 to 2029 are presented in the link below Staf Development Plan_Faculty of Agriculture_2025-2029

Lecturer performance assessment (LKD-Ind) is carried out through the assessment of lecturer performance sheet contained in the SISTER application of the Ministry of Higher Education Science and Technology (link https://sister.kemdikbud.go.id/beranda) by two assessors who selected from Mulawarman University within the same Faculty and/or across Faculties. The lecturer performance sheet assessment document is attached in the following link: Lecturer Performance Assessment-Faculty of Agriculture

Beside using the Lecturer Performance Sheet in assessing lecturer performance, performance assessment of lecturers and education personnel staff is carried out using the Employee Performance Target (SKP-Ind) (https://skp.sdm.kemdikbud.go.id/skp/site/index.jsp), instrument which contains performance plans and targets that must be achieved by employees. This document is a performance agreement between employees and direct supervisors to assess employee performance in carrying out their duties and responsibilities. The elements of SKP include job duty activities, credit numbers, targets, main work indicators, and strategies for achieving work results. The benefits of SKP for employees are provide clear direction for employees in gain performance expectations, measure employee performance achievement, improve the efficiency and effectiveness of employee performance, increase motivation and job satisfaction and develop employee careers. SKP document example are attached to the following link: https://drive.google.com/drive/folders/16bIpHWRMzBCxJvG5ELNMHjPRh4MgwURH

Table 3.2. Staff development plan for the last 5 years

Study Program	**Link**
BPF	Staff development plans for BPF in 2020 to 2024 based on their education, academic position and scientific field https://bit.ly/3WHcbVy and https://bit.ly/40WIjqL
BPA	Staff development plans at the Faculty of Agriculture in 2019 to 2024 (https://docs.google.com/spreadsheets/d/15r0lzZZ2irlfxbAAm1xTYBr-MD7-r4xk/edit?gid=1130587943#gid=1130587943) and plans for 2025 to 2029 are

	presented in the link below https://docs.google.com/spreadsheets/d/15r0lzZZ2irlfxbAAm1xTYBr-MD7-r4xk/edit?gid=897155124#gid=897155124
BPAPT	Staff development plans at the Faculty of Agriculture in 2019 to 2024 (https://docs.google.com/spreadsheets/d/15r0lzZZ2irlfxbAAm1xTYBr-MD7-r4xk/edit?gid=1130587943#gid=1130587943) and plans for 2025 to 2029 are presented in the link below https://docs.google.com/spreadsheets/d/15r0lzZZ2irlfxbAAm1xTYBr-MD7-r4xk/edit?gid=897155124#gid=897155124
MPF	Staff development plans for MPF in 2020 to 2024 based on their education, academic position and scientific field https://bit.ly/MASTER-PROGRAM-IN-FORESTRY and https://bit.ly/40WIjqL
DPF	Staff development plans for DPF in 2020 to 2024 based on their education, academic position and scientific field https://bit.ly/4jE5Sfq and https://bit.ly/40WIjqL

The Faculty of Forestry and the Faculty of Agriculture also have staff development plans for new topics to build teaching capacity on innovative subjects and provide flexibility in adapting transformations in the courses taught. For example, the Faculty of Forestry encourages some staff to pursue both formal education and competency training in emerging areas, such as climate change mitigation, biodiversity conservation, bioenergy, and food security from tropical forest resources.

Agriculture staff development with new areas of expertise or topics in 2025 to 2029 include soil biotechnology, land evaluation, agricultural mechanization, agronomy and seed technology, fruit plant breeding, plant bacteriology and protection, and horticultural crops.

3.2. Student support and Facilities

The campus and infrastructure at UNMUL are sufficient for undergraduate teaching, with adequate classrooms, facilities, and well-equipped laboratories. The laboratory staff is well-trained and dedicated. However, laboratory equipment, especially for graduate programs, needs modernization, particularly in terms of software tools. To address this, the Faculty of Forestry has:

- Secured funding for new equipment, including eight instruments in 2024.
- Established collaborations with the East Kalimantan government for a Rp 20 billion investment starting in 2025.

- Improved software and digital tools for student research, with training and support for effective use.

These efforts are aimed at enhancing both student learning and research quality.

3.3. Funds and Equipment

Financial Report

Faculty of Forestry Financial Report. Like other public universities in Indonesia, Universitas Mulawarman relies on government subsidies, tuition fees (UKT/SPP) classified as Non-Tax State Revenue (PNBP), and funding from collaborations with external institutions.

Government subsidies primarily cover civil servant salaries (PNS) and Operational Assistance for Public Universities (BOPTN), which is exclusively allocated for undergraduate (S1) programs. The total managed funds for the Forestry Bachelor's Program (BPF) amount to IDR 17.8 billion, with the largest portion (67%) allocated to staff salaries. Other funding sources include UKT revenue-sharing (PNBP) at 18%, BOPTN at 11%, and collaborative funding at 4%.

Budget Allocation and Expenditures. Funds are distributed across ten key expenditure categories, which include: Lecturer salaries, Academic and laboratory staff salaries, learning operational costs, Indirect operational expenses, Student activity funds (including support for student mobility programs), Human resource, development, Building and facility maintenance, Research equipment procurement, Research funding, Community service programs

Beyond staff salaries, a significant portion of the budget—up to IDR 1.5 billion annually—is allocated to learning operations, infrastructure maintenance, and research. These funds support both students and faculty members, ensuring the availability of resources for research activities. Research funding is sourced not only from regular allocations (BOPTN and PNBP) but also from collaborative partnerships and research grants from various institutions.

A detailed financial report on BPF's income sources and expenditures can be accessed via the following link: https://bit.ly/42C7RLh.

Funding for the Forestry Master's (MPF) and Doctoral Programs (DPF). The Forestry Master's Program (MPF) and Doctoral Program in Forestry (DPF) are primarily funded through PNBP (tuition fees), collaborative funding, and government support for civil servant salaries. The MPF manages IDR 2.7 billion, while the DPF oversees approximately IDR 2.2 billion. For both programs, PNBP (tuition revenue-sharing) plays a crucial role in sustaining academic activities, as there is no BOPTN

funding support. The budget is evenly distributed to cover operational costs, infrastructure maintenance, and research activities. Additionally, continuous investment in research equipment ensures that faculty and students have access to modern tools for their academic and research pursuits. Detailed financial reports for MPF and DPF can be accessed via the following links:

- MPF Financial Report: https://bit.ly/Financial-Report-Master-Program
- DPF Financial Report: https://bit.ly/Financial-Report-Doctoral-Program

Institutional Development and Sustainability Strategies. To further support the growth and sustainability of these programs, additional funding sources are essential. Recognizing this, the Faculty of Forestry, which oversees the BPF, MPF, and DPF programs, is actively working to diversify revenue streams beyond traditional BOPTN and PNBP funding.

The faculty is enhancing collaborations by leveraging its expertise and research capabilities to align with government agencies, public institutions, and private sector needs. Key strategies to increase funding include Optimizing laboratory services to generate additional revenue, maximizing the potential of managed forests, particularly KHDTK Lempake and KHDTK Bukit Soeharto, for research, education, and external collaborations. These initiatives are expected to strengthen financial sustainability, support academic and research advancements, and contribute to the long-term growth of forestry education at Universitas Mulawarman.

Faculty of Agriculture Financial Report

The source of funding for the Faculty of Agriculture for the implementation of educational activities, research and community service comes from the state in the form of salaries for lecturers and education staff who have the status of civil servants and from tuition fees paid by students, besides that it comes from the assistance of higher education operational assistance provided by the government and from grants obtained from local governments. The state, through the Ministry of Education and Culture, Research and Technology, and Higher Education, pays the salaries of lecturers and education staff based on the position of functional positions and the performance of lecturers and education staff. Allowances for lecturers and education staff in the form of remuneration salaries are regulated according to the provisions of business service agencies. Salaries for lecturers and education staff are paid at the beginning of each month, while allowances are given after calculating performance at the end of the year or the beginning of the following year.

The largest portion of the budget is allocated to lecturer (BPA) salaries (civil servants), averaging IDR 7.55 billion per year. However, there is a noticeable decline from IDR 7.82 billion in 2019

to IDR 6.83 billion in 2024. Salaries for academic and laboratory staff (civil servants) remain stable at approximately IDR 197 million per year. Non-civil servant staff salaries also remain constant at IDR 75.79 million annually. Also, the largest portion of the budget is allocated to lecturer (BPAPT) salaries (civil servants), averaging IDR 5.63 billion per year. However, there is a noticeable decline from IDR 5.81 billion in 2019 to IDR 5.62 billion in 2024. Salaries for academic and laboratory staff (civil servants) remain stable at approximately IDR 168 million per year. Non-civil servant staff salaries also remain constant at IDR 73.7 million annually.

Funds that enter the faculty sourced from student tuition fees are used for the implementation of education and teaching including the procurement of educational facilities and infrastructure, salaries of honorary education staff, operational teaching processes, research, community service, student activities and development, human resource development including lecturers and education staff. Fulfillment of educational infrastructure includes the fulfillment of learning tools such as tables, chairs, LCDs, glass boards, audio-visual facilities, procurement of personal computers, procurement of laboratory equipment, procurement of laboratory chemicals and so on which are not only able to meet the needs of the process teaching and learning also provides a comfortable classroom atmosphere for students. Fulfillment of educational infrastructure in the form of repair and maintenance of learning buildings, repair and renovation of lecturer rooms, repair and maintenance of laboratory buildings, repair of access roads and other activities is carried out to be able to facilitate the teaching and learning process and services to students. The learning process and office activities at the Faculty of Agriculture are also supported by Faculty operational funds which are used for the implementation of services to the entire academic community such as lecturers, students, and education staff. Allocation for student development and achievement is carried out by providing a budget for students to carry out positive activities with clear outputs, especially to build the performance of student organizations and support student internship activities at home and abroad, collaboration with foreign students by accepting the arrival of foreign students in the summer school program so that students have more ability to explore their academic abilities and interact with colleagues from other countries.

Operational and learning expenses in **BPA and BPAPT** is Learning operational funds show an increasing trend, rising from IDR 47.35 million in 2019 to IDR 107.07 million in 2024, indicating enhanced investment in educational activities. Indirect operational costs (electricity, water, etc.) fluctuate, peaking at IDR 16.46 million in 2021 and dropping to IDR 11.22 million in 2023. Student activities funding averages IDR 139.53 million annually, covering student organizations, publications, practical support, and student exchanges.

Human resource development activities also use budget allocations that are realized in the form of support for workshops, training and national and international seminars, which can improve the quality of human resources so that they can provide excellent service to all academicians. At the Faculty level, the budget allocation for lecturer research assistance involving students is also carried out to provide stimulants or research assistance for lecturers to provide opportunities for lecturers to carry out the best research activities accompanied by the provision of assistance for the publication of research articles in national and international journals, stimulants for book publications and intellectual property rights. This greatly supports the achievement of the quality of human resources, especially lecturers and education personnel and to improve the career of lecturers and help accelerate students in completing their studies. Allocation of funds for the community service component is also given to lecturers and students involved to provide more value to lecturers and students as agents of change and providers of scientific information to the surrounding community. Research cooperation with other parties and stake holders both in the form of joint research and other cooperation is also carried out by involving all lecturers with funding from outside parties and from related agencies.

Investments in **BPA and BPAPT** are Human resource investment fluctuates, peaking at IDR 164.07 million in 2023. Building investment increased significantly in 2021 and 2022, with the highest allocation of IDR 103.47 million in 2022. Learning support facilities saw a sharp increase, from IDR 175.81 million in 2019 to IDR 306.88 million in 2024, highlighting the faculty's commitment to improving educational infrastructure. Research and Community Development Funding in **BPA and BPAPT** are **t**his budget remains stable at IDR 51.66 million per year, ensuring continued research and outreach activities. Total Expenditures in **BPA** is Annual expenditures increased over the years, from IDR 679.07 million in 2019 to IDR 936.15 million in 2024, with an average of IDR 772.96 million.Finance Agriculture, BPA, BPAPT.xlsx - Google Spreadsheet

The total annual budget **(BPA)** fluctuated over the six-year period, with an increasing trend from IDR 679,06 million in 2019 to IDR 955,8 million in 2023, before slightly decreasing to IDR 936,1 million in 2024. The main sources of funding come from the BOPTN (State University Operational Assistance) and PNBP (Non-Tax State Revenue), which contributed an average of IDR 281,5 million and IDR 491,3 million per year, respectively. Additionally, collaboration funds (excluding tuition fees) provided an extra financial resource, averaging IDR 169,5 million annually. Finance Agriculture, BPA, BPAPT.xlsx - Google Spreadsheet

The total annual budget **(BPAPT)** fluctuated over the six-year period, with an increasing trend from IDR 676,97 million in 2019 to IDR 953,7 million in 2023, before slightly decreasing to IDR

934,06 million in 2024. The main sources of funding come from the BOPTN (State University Operational Assistance) and PNBP (Non-Tax State Revenue), which contributed an average of IDR 281,5 million and IDR 489,29 million per year, respectively. Additionally, collaboration funds (excluding tuition fees) provided an extra financial resource, averaging IDR 169,5 million annually. Finance Agriculture, BPA, BPAPT.xlsx - Google Spreadsheet

In addition to income from the state through the ministry of education and culture ristek dikti and from student tuition fees, the faculty also received grants in the form of goods in the last five years, namely laboratory equipment, grants for the completion of lecture buildings, grants for the completion of the agriculture faculty dean's building and screenhouse grants from the company's CSR mechanism. The funding is then allocated to support education, research, and community service activities which can be seen in the following link ASIIN-Finance Agriculture.xlsx - Google Spreadsheet.

Equipment

Forestry Laboratory Equipment

The Faculty of Forestry currently operates eight laboratories, each dedicated to a specific field of study: Silviculture; Soil-Water Conservation and Climate; Forest Planning and Harvesting; Forest Products Chemistry and Renewable Energy; Biology and Wood Preservation; Forest Products Industry; Forest Politics, Economics, and Social Forestry; and Ecology and Conservation of Tropical Forest Biodiversity

Each laboratory is equipped with specialized instruments tailored to its respective discipline. As of early 2024, a complete inventory of laboratory equipment is available here. Additionally, the profiles of each laboratory can be accessed on the Faculty of Forestry, Universitas Mulawarman website (link), including the Forest Products Chemistry and Renewable Energy Laboratory, which can be visited here.

Laboratory Modernization Strategy. The Faculty of Forestry recognizes that modernizing laboratory equipment is essential for maintaining its relevance and advancing research capabilities. However, given the high cost of laboratory instruments, a strategic approach is necessary to achieve this goal.

To secure funding, the faculty actively submits proposals to both regional and national government agencies. Additionally, it has been expanding research collaborations with private sector industries and NGOs—both domestically and internationally—hoping to secure financial support

for acquiring advanced laboratory equipment. Furthermore, the faculty has begun allocating a portion of its regular budget specifically for investment in laboratory infrastructure.

As a result of these efforts, through the Merdeka Campus Competition Program, the faculty successfully procured eight new laboratory instruments at the end of 2024, valued at Rp 624,500,000. These instruments have been distributed to the relevant laboratories, with the detailed list available here.

For further modernization, a proposal detailing the required laboratory equipment upgrades was submitted here. The proposal has secured a funding commitment of Rp 20 billion from the East Kalimantan Regional Government, with funding set to begin in 2025. This investment is expected to enhance laboratory performance, enabling high-quality research outputs and accelerating student study durations, ultimately contributing to the faculty's overall academic excellence.

Agriculture Laboratory Equipments

Laboratory modernization efforts at BPA and BPAPT have been undertaken over the past five years. The Faculty of Agriculture is supported by 15 laboratories (namely Agronomy Laboratory, plant pest and disease laboratory, Soil Laboratory, Cartography and Geographic Information System laboratory, Tissue Culture Laboratory, Biotechnology Laboratory, Chemical and Biochemical of Agricultural Product Laboratory, Agricultural Product Microbiology Laboratory, Agricultural Products Processing and Quality Control Laboratory, Post-Harvest and Packaging of Agricultural Product Laboratory, Agricultural Communication and Extension Laboratory, Agribusiness Management Laboratory, Animal Nutrition Laboratory, Animal Reproduction Laboratory and Animal Products Technology Laboratory) and 1 experimental Field laboratory with a profile as presented in the Faculty of Agriculture website https://faperta.unmul.ac.id/web/laboratorium-terpadu/

Agronomy Laboratory, Plant Pest and Disease Laboratory, Soil Laboratory, Cartography and Geographic Information System Laboratory, Tissue Culture Laboratory, Biotechnology Laboratory are held by BPA and Chemical and Biochemical of Agricultural Product Laboratory, Agricultural Product Microbiology Laboratory, Agricultural Products Processing and Quality Control Laboratory, Post-Harvest and Packaging of Agricultural Product Laboratoryare held by BPAPT. Each laboratory has equipment support to serve student and lecturer research and for services agencies outside the faculty with standard rates set by the faculty. Inventory of laboratory equipment available in each laboratory is displayed on the link https://docs.google.com/spreadsheets/d/1nHSPFmXdZ7D0Pq0w0m0iLRUNrlSe2PjD/edit?gid=1588625078#gid=1588625078 in detail with the last sheet displaying the types of laboratory equipment needed in all laboratories at

the Faculty of Agriculture along with details of costs to be incurred and links to domestic components that are a reference in the process of procuring laboratory equipment as describes in this link : https://docs.google.com/spreadsheets/d/1nHSPFmXdZ7D0Pq0w0m0iL-RUNrlSe2PjD/edit?gid=832845759#gid=832845759. The sheet shows that the Faculty of Agriculture, in addition to accommodating all the needs of each laboratory, to ensure the implementation of the tridarma of higher education at the Faculty of Agriculture

During the last five years, the Faculty of Agriculture has purchased laboratory equipment through tuition fees funds and received a grant of laboratory equipment worth 2.5 billion rupiah from the East Kalimantan Provincial Government which is spread over all laboratories (link https://drive.google.com/drive/folders/1HPC1nIwUa2tPY9ONVo4EmRN4VZJETVod). Grant application proposals have been submitted to ensure additional grants from the Ministry of Education and Culture Science and Technology and from the East Kalimantan provincial government for the specifications of equipment listed on the laboratory equipment needs sheet worth not less than 100 billion rupiah to ensure the adequacy of the future laboratory equipment modernization process (link https://drive.google.com/drive/folders/1HPC1nIwUa2tPY9ONVo4EmRN4VZJETVod)

By the end of 2024, Mulawaran University will not only have developed laboratory equipment and facilities in each faculty, but it also has completed the construction of an Integrated Laboratory. This modern laboratory has been equipped with the latest technology and equipment (https://drive.google.com/file/d/1dI3zlaT8K1186wsJopOjVNG2WsdmUSBy/view?usp=sharing). The construction of this facility is a result of collaboration and support from the Islamic Development Bank. This integrated laboratory facility can be accessed by all students and researchers within Mulawarman University, including those from forestry and agriculture. Location of Integrated Laboratory https://maps.app.goo.gl/HWmxffoMqxuWxvgH7 .

Table 3.3. Tool Inventory and Availability Planning

Study Program	**Link**
BPF	Laboratory equipment up to 2024: https://bit.ly/4haamZz Additional laboratory equipment in the end of 2024: https://bit.ly/3Q1wQjw Proposal for modernization laboratory equipment: https://bit.ly/MODERNIZATION-OF-LAB-EQUIPMENT
BPA	Laboratory equipment inventory and laboratory equipment proposal link

BPAPT	Laboratory Inventory and Procurement of THP - Agricultural Product Technology Laboratory .xlsx - Google Spreadsheet and laboratory equipment proposal link https://drive.google.com/drive/folders/1HPC1nIwUa2tPY9ONVo4EmRN4VZJETVod)
MPF	Laboratory equipment up to 2024: https://bit.ly/4haamZz Additional laboratory equipment in the end of 2024: https://bit.ly/3Q1wQjw Proposal for modernization laboratory equipment: https://bit.ly/MODERNIZATION-OF-LAB-EQUIPMENT
DPF	Laboratory equipment up to 2024: https://bit.ly/4haamZz Additional laboratory equipment in the end of 2024: https://bit.ly/3Q1wQjw Proposal for modernization laboratory equipment: https://bit.ly/MODERNIZATION-OF-LAB-EQUIPMENT

Collaboration

Collaborations and Partnerships of the Faculty of Forestry. The Faculty of Forestry has established collaborations with various partner institutions, both domestic and international, across the government, private sector, and non-governmental organizations (NGOs). These partnerships take various forms, including research collaborations, consultancy services, technical assistance, and shared research facilities.

Beyond securing funding from these collaborations, they also serve as a platform for the practical application of knowledge by both faculty members and students. Through these partnerships, faculty and students benefit from access to research sites, materials, and advanced equipment, which significantly facilitates research activities. Ultimately, these collaborations contribute to enhancing research productivity and increasing the publication output of faculty members and students.

Growth of Collaborations Over the Years. The Faculty of Forestry has experienced steady growth in partnerships, with an increasing diversity of collaborating institutions. Each year, the faculty engages in six to eleven collaboration agreements. In 2024 alone, nine partnerships have been established, managing a total collaboration fund exceeding IDR 14 billion.

Some partnerships are multi-year collaborations, such as:

- Pertamina Foundation, which supports the blue carbon initiative in the Mahakam Delta and Bontang.
- Yayasan Kehati, through the Tropical Forest Conservation Act (TFCA) Kalimantan, which facilitates the development of an orangutan corridor in Menyapa-Lesan, Berau Regency.

International Collaborations. Since 2023, the Faculty of Forestry has partnered with Kyoto University, Kyoto Prefectural University, and MIE University (Japan) for annual student exchange programs. Other international collaborations include Cornell University (USA), Universiti Teknologi Malaysia (Malaysia), University of Terengganu Malaysia (Malaysia), The Ministry of Agriculture and Fisheries (Timor-Leste), University of Wisconsin (USA), University of Maryland (USA), Faculty of Geo-Information Science and Earth Observation (ITC) & University of Twente (Netherlands)

National and Local Partnerships. In addition to international partnerships, the Faculty of Forestry collaborates with several key national and local partners in the forestry sector, including: The Ministry of Environment and Forestry, Peatland and Mangrove Restoration Agency (BRGM), Provincial Forestry Offices, Forestry companies, Development partner organizations
For detailed information on collaborations and agreements from 2020 to 2024, please refer to the following link: https://bit.ly/3Q1pSuI.

Strategic Vision for Future Collaborations. For the Faculty of Forestry, collaboration is a key strategy for institutional development. Moving forward, the faculty aims to expand its partnerships even further, with a strong emphasis on international collaborations. Strengthening global partnerships is a top priority, aligning with the university's vision of becoming a world-class institution.

Collaboration between the Faculty of Agriculture, Universitas Mulawarman, and External Institutions.

The Faculty of Agriculture at Universitas Mulawarman actively engages in collaborations with various institutions to enhance research, education, and community development. These partnerships aim to foster knowledge exchange, technological innovation, and sustainable agricultural practices.

In 2019, one of the prominent collaborations was with Kyoto University and Walailak University Thailand, which focused on Academic Cooperation and Exchange. This partnership includes joint research projects, faculty and student exchange programs, Exchange of scientific materials,

publications and information, and capacity building initiatives. Domestic collaboration involves Universities, Farmer Groups, and Rice Research Centers. Collaboration with domestic universities (Brawijaya University, Udayana University, 11 Maret University) in the form of developing the Tridharma of higher education (education, research and community service). Several collaborations with related institutions in the East Kalimantan region such as the West Kutai Regional Research and Development Center, East Kalimantan Health Polytechnic, private companies such as PT. Unggas Karya Mandiri, Poultry association, Rice Plantation Center, and so on throughout 2019 are listed in the following document link https://drive.google.com/drive/folders/1BwLoci_jvNw79nAs5ND39ORFviGnL-jo

In 2021, one of notable collaborations is with Mahakam Ulu Regional Government. The Faculty of Agriculture has established a strategic partnership with the Department of Education and Culture of Mahakam Ulu Regency to support higher education accessibility for students from the region. This collaboration is formalized through a Cooperation Agreement aimed at providing scholarships under the "Gerbang Cerdas Mahulu" program. Through this partnership, students from Mahakam Ulu who have been accepted into Universitas Mulawarman are eligible to receive financial assistance for tuition fees and academic support. The program ensures that these students can pursue their undergraduate studies in agricultural sciences and related fields without financial barriers. This initiative not only enhances human resource development in Mahakam Ulu but also strengthens the role of the Faculty of Agriculture in contributing to regional development through education, research, and community engagement. The cooperation underscores the importance of synergizing academic institutions and local governments to foster sustainable growth in the agricultural sector. How many collaborations such as the East Java Beef Cattle Institute, with PT Mitra Sinar Jaya, the East Kalimantan Livestock and Animal Health Service Office and with academics such as the East Java Nahdatul Ulama Pasuruam Institute of Technology in the implementation of the Tridarma of Higher Education. Several collaborations with related institutions and overseas institutions throughout 2021 are listed in the following document links https://drive.google.com/drive/folders/1s6MzKJ9e5v2-YvaFlCFclZjZxp2Q5RZ4

In 2022, one of notable collaborations is with Institut Pertanian Bogor. IPB University, through its Faculty of Agriculture, has established a strategic collaboration with various institutions to advance agricultural education, research, and community development. This partnership aims to bridge the gap between academic knowledge and industry needs by fostering innovation, capacity-building, and sustainable agricultural practices. Under this collaboration, both parties engage in

joint research projects, knowledge exchange programs, and student internships. The partnership also includes capacity-building initiatives such as training workshops, field studies, and policy consultations to enhance agricultural productivity and sustainability. Additionally, the collaboration facilitates scholarships and funding opportunities to support outstanding students pursuing studies in agricultural sciences. By integrating academic expertise with practical industry applications, this cooperation strengthens the role of universities in addressing real-world agricultural challenges. The synergy between academia and industry ensures the development of future agricultural leaders while contributing to national and regional food security. In addition, there is also cooperation with the Kutai Kartanegara Regency Trade, Industry and Cooperative Office, the Mahakam Ulu Regency Education Office, and from the company, PT Bramasta Sakti, with the aim of implementing the Tridarma of Higher Education. Several collaborations with related institutions and overseas institutions throughout 2022 are listed in the following document links https://drive.google.com/drive/folders/1R1Y4PwYMUcQfum9BMSCnAjXK9wHGiBgf

In 2023, one of notable collaboration is with Jendral Soedirman University This partnership includes joint organizing cooperation on the Tridharma including education, implementation of independent learning, Independent Campus, Research, Collaboration of PKM lecturers and students. Cooperation with Sulytas Ageng Tirtayasa University, Faculty of Animal Husbandry IPB and Faculty of Animal Husbandry Widyagama Mahakam Several collaborations with related institutions and overseas institutions throughout 2023 are listed in the following document links https://drive.google.com/drive/folders/1H12OrEq8xAD4mcuIYuFHbbG2MIRxmmRi

In 2024, one of notable collaborations is with Regional Development Planning Agency Research and Development of Paser Regency. This partnership includes research and carrying out regional research and development planning in the Paser region. Cooperation with the National Narcotics Agency of East Kalimantan in terms of training and mentoring of prisoners, cooperation with Jember State University, Sultan Ali Islamic University and cooperation with the Paser district government. Several collaborations with related institutions and overseas institutions throughout 2024 are listed in the following document links https://drive.google.com/drive/folders/1X8hiamV-bEZ6Yj-pLX1haLdFqhDICMM8

Through these strategic alliances, the Faculty of Agriculture seeks to strengthen academic excellence, contribute to policy development, and support local and international agricultural advancements. Such initiatives align with the university's commitment to sustainable development and global academic networking which are summarized in the following link https://faperta.unmul.ac.id/web/daftar-kerja-sama-fakultas-pertanian-universitas-mulawarman/ ,

https://docs.google.com/spreadsheets/d/1RXQPnPvKwtFJSCV42fQXgcquKZz-mvgk/edit?gid=1237424066#gid=1237424066, https://docs.google.com/spreadsheets/d/1F2Y1lYGYKj5VB8uCW4ettW074Qs9Tck8/edit?gid=1551354074#gid=1551354074, and links BPAPT partnerships and collaborations with several institutions https://docs.google.com/spreadsheets/d/1EOPn_f64PySzW3w7r98_sf7F8e_IagZ2/edit?gid=2116299656#gid=2116299656

4. Transparency and Documentation

We appreciate and agree with the recommendation from the ASIIN expert panel on section 4 – Transparency and Documentation. Follow-up of the recommendations given is carried out in several aspects as follows:

1. Addition of module descriptions and updates on the website content.
2. Standardization of consistent learning outcomes structure in the relevant module.
3. Completion of module handbook for relevant study program.
4. Updating diploma supplement format to display information as recommended by the ASIIN expert panel, including information about course character and grading system.

4.1. Module Descriptions

Module descriptions have been updated by revising them to align with the current curriculum. Intended Learning Outcomes (ILO) have been formulated more concisely and consistently to facilitate understanding and implementation. Module courses have been republished on the official website, showcasing module descriptions.

Table 4.1. Updated module descriptions at the website

Study Program	Link
BPF	https://fahutan.unmul.ac.id/prodi-s1/kurikulum
BPA	https://agt.faperta.unmul.ac.id/kurikulum/
BPAPT	https://yin.thp.unmul.ac.id/thp/kurikulum-program-sarjana/
MPF	https://psmik.fahutan.unmul.ac.id/kurikulum
DPF	https://psdik.fahutan.unmul.ac.id/kurikulum

The enhancement of the module handbook has been completed, covering all relevant information, and has been re-uploaded on the website.

4.2. Diploma Supplement

The university, through LP3M, has provided a Diploma Supplement (SKPI) format that includes information on conference activities, teaching contributions, and grade statistics following ECTS guidelines. In addition, an application program (can be accessed https://mexs.unmul.ac.id/) has been developed to facilitate the process of creating SKPI and can be used for Master's and Doctoral Study Programs. This program has been socialized but will be implemented in the odd semester of 2025/2026.

We confirm that the Diploma supplement form has been updated to be more comprehensive and in line with international standards by completing the diploma supplement with statistical information according to the ECTS guidelines, adding an explanation about the higher education system in Indonesia, entering additional information such as program characteristics and graduation requirements. Issuing Diploma Supplement for MPF and DPF, by recording all important activities such as contributions in conferences and teaching. Herewith the sample of diploma supplement for MPF and DPF that will be implemented in Mulawarman University. (Diploma Suplemen_MPF.pdf and Diploma Suplemen DPF.pdf).

4.3. Relevant Rules

Clear

5. Quality Assurance

Several recommendations given on section 5 – Quality Management: Quality asessment and development were gratefully acknowledged. Analysis and improvement have been conducted on the following aspects:

1. A monitoring system according to student study completion be established has been established;
2. System to monitor the study length and strategis to achieve optimum study length;
3. We confirm about student number and strategies for promotion/ marketing to invite more students for relevant study program.

5.1 Overview Quality Assessment System

Monitoring System

Universitas Mulawarman has a comprehensive quality assurance system, which includes internal and external evaluations to improve the quality of education. We welcome suggestions and are committed to further developing quality assurance and more actively involving students in the feedback loop to enhance the quality of education at the university.

The causes of the study have been analyzed based on the ranking of the main causative factors are:

1. Applicants accepted into the study program do not re-register.
2. Students who do not complete financial administration for three consecutive semesters are declared inactive or have withdrawn.
3. Students with outstanding payments cannot attend lectures and must repeat the learning process after payment.
4. Students who take a leave of absence do not need to pay study fees, but the study period is still counted.
5. Students who do not prepare a study plan for the current semester cannot attend lectures.
6. Students choose to work and do not continue their studies.
7. Failure to complete studies in the seventh semester and beyond by not conducting research according to the schedule.

To address this issue, the university has implemented several measures. These include enhancing the monitoring system and in 2023, a program was added to enhance the monitoring system for the causes of high dropout rates and study durations exceeding the standard through the development of an academic information system called AIS AIS (Academic Integrated System). The development of the progress monitoring system related to student academic activities is carried out through this system. This information system contains data about students, study success, courses that have been taken in previous semesters, grades for each semester, grade index, etc.

Based on the following data, we confirm that the number of applicants and students admitted to the BPF, MPF, and DPF programs remains stable and has not declined as recorded by the expert.

Table 1.9. Student number statistic for BPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total

2019	308	418	726	134	119	253
2020	305	413	718	136	120	256
2021	343	379	722	161	171	332
2022	388	440	828	168	137	305
2023	477	348	825	168	171	339
2024	478	389	867	194	147	341

Table 1.10. Student number statistic for MPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	11	1	12	11	1	12
2020	28	4	32	27	4	31
2021	9	13	22	9	12	21
2022	9	7	16	9	6	15
2023	8	6	14	8	3	11
2024	11	8	19	10	7	17

Table 1.11. Student number statistic for DPF

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	3	0	3	3	0	3
2020	0	0	0	0	0	0
2021	1	2	3	1	2	3
2022	4	0	4	4	0	4
2023	5	2	7	5	2	7
2024	6	2	8	5	2	7

The number of students who apply and are accepted at BPA and BPAPT indeed fluctuates from year to year. However, when viewed as a whole, there is a stable trend in the number of applicants and admissions. This indicates that BPA and BPAPT have generally succeeded in maintaining their appeal and attractiveness among prospective students.

Table 1.12. Student number statistic for BPA

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2019	257	277	534	43	82	125
2020	240	114	354	63	41	104
2021	121	149	270	70	48	118
2022	169	126	295	56	55	111
2023	147	129	276	61	49	110
2024	132	133	265	73	56	129

Table 1.13. Student number statistic for BPAPT

Year of Admission	Number of Applicant			Number of Students Accepted		
	Male	Female	Total	Male	Female	Total
2020	108	147	255	30	43	73
2021	106	156	262	44	38	82
2022	97	171	268	36	36	72
2023	99	190	289	36	43	79
2024	109	169	278	40	36	76

5.2 Evaluation and Enhancement

Evaluation of student achievement on Program Learning Outcomes (PLO)

The assessment of PLO Program Learning Outcomes (PLO) at Universitas Mulawarman is conducted by observing the learning process from start to finish. This can be seen from the cumulative grade point average (GPA) and the graduation time. To ensure accurate and comprehensive assessment, the university forms a PLO assessment team responsible for overseeing and evaluating the learning process1.

This PLO assessment team collects data from various sources, including student academic results, study success, courses taken, grades for each semester, and grade index. The data is then analyzed to identify areas for improvement and ensure that the study program meets the established quality standards.

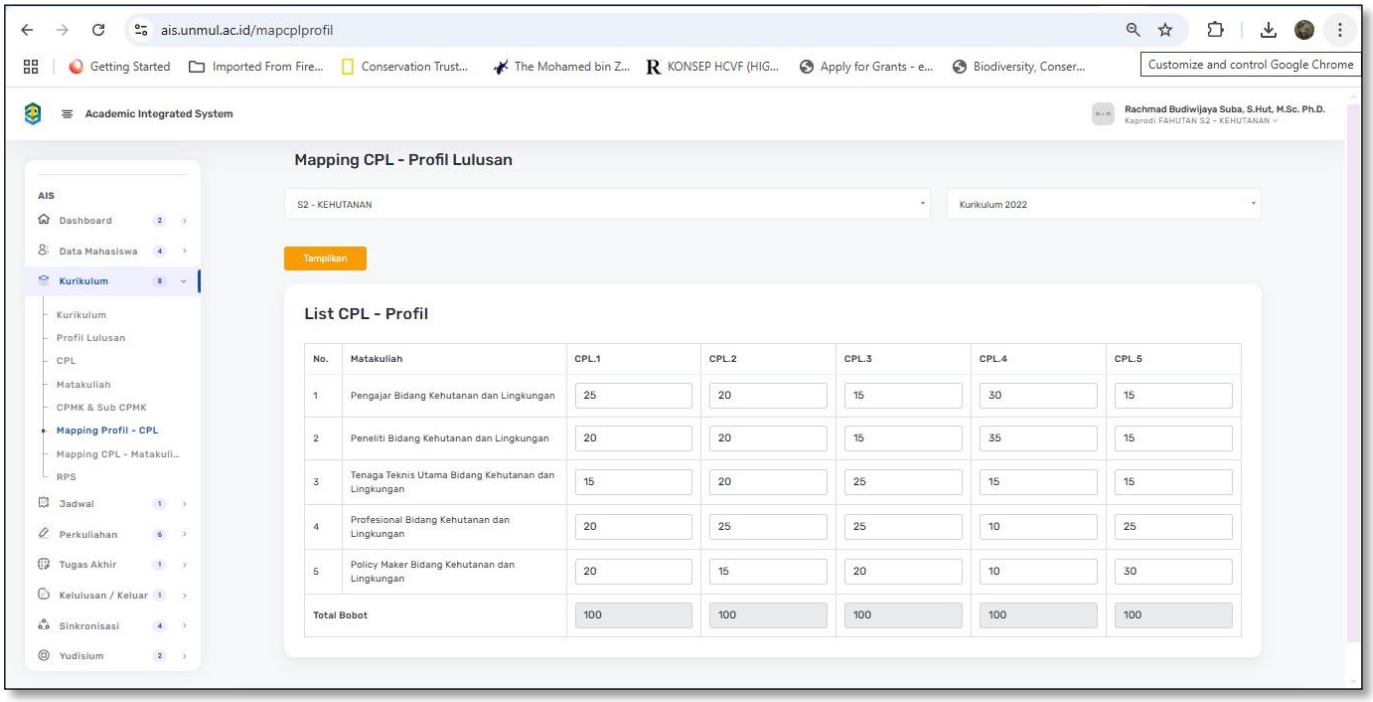
With the PLO assessment team in place, the university can be more proactive in identifying and addressing issues that may arise during the learning process and ensuring that graduates have the competencies required to meet the program's objectives.

Feedback to results survey

Both of Faculty of Agriculture's and Forestry Faculty Quality Assurance Group (GJM) has uploaded the results of the lecturer evaluation by students (EDOM) openly and transparently on the website so that students can access them (Lecturer Evaluation by Student Report of Faculty of Agriculture and Faculty of Forestry). Then, students are allowed to provide direct feedback to lecturers.

Teaching evaluation is discussed with students after it is carried out

One example of feedback students give is requesting an opportunity for grade improvement for those with low grades. Then, the Faculty creates a standard operating procedure (SOP) for grade remediation (Faculty of Forestry).



D. Doctoral Program of Forestry (DPF)

We sincerely appreciate and are grateful for the recommendations provided in Section D, particularly those related to the criteria for a structured doctoral program. In response, we have taken significant steps to analyze and implement improvements, which are detailed in the following sections:

1. **Updating and Structuring the Program Learning Outcomes (PLOs) for the Doctoral Program in Forestry (DPF)**

   The PLOs for the DPF have been revised to ensure alignment with academic and professional standards. Learning outcomes are now explicitly incorporated into all module handbooks,

which have been thoroughly reviewed, completed, and consistently structured. Further details on these updates can be accessed at: Program Learning Outcomes ; Module Handbook

2. **Enhancing Opportunities and Support for International Student Mobility**

   DPF students actively participate in various international and national seminars and conferences. To support this, the Faculty of Forestry facilitates mentoring programs where faculty members assist students in academic writing. Additionally, financial assistance is available for both lecturers and students to support article publications in international seminars through an academic grant scheme. More details can be found at: Academic Grant Scheme.

3. **Improving Students' English Language Proficiency**

   To strengthen students' English skills, the DPF program collaborates with the Language Centre of Mulawarman University, which offers a range of paid courses, including Elementary, Upper-Elementary, Pre-Intermediate, Intermediate, Upper-Intermediate, Advanced, Conversation Class, TOEFL, IELTS, and TOEIC preparation programs. Additionally, free training initiatives, such as the English Day program, are also available to enhance students' communication skills. More information is available at: Language Courses ; English Day Program

4. **Developing Clear Guidelines for the Doctoral Program in Forestry, Including Assessment Rules and Graduation Requirements**

   The DPF program has established a comprehensive document outlining guidelines for doctoral studies, which includes clearly formulated assessment rules and minimum requirements for PhD graduation. This document ensures transparency and standardization across the program. Access to the guidelines can be found here: Doctoral Program Guidelines

5. **Strengthening Infrastructure and Modernizing Equipment for the DPF Program**

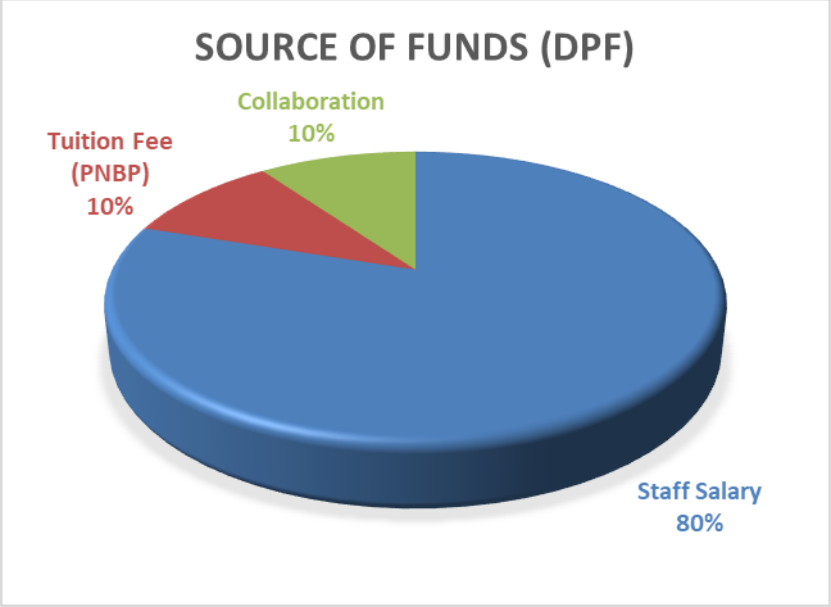
   Efforts are underway to improve infrastructure and upgrade laboratory and field equipment to support research activities within the DPF program. This includes procuring modern research tools, enhancing digital learning resources, and ensuring that students have access to state-of-the-art facilities to support their academic and research endeavors.

6. **Providing Financial Reports for the Last Five Years (Including Funding Sources and Expenditures)**

In line with transparency and accountability, the financial reports covering the last five years, including detailed funding sources and expenditures, have been documented and made available for review. These reports ensure clarity on financial management and sustainability of the DPF program.

Source of Funds for DPF

SOURCE OF FUNDS	YEAR (IDR)					
	2020	**2021**	**2022**	**2023**	**2024**	**AVERAGE**
Staff Salary	1,340,406,675	1,869,028,597	2,213,239,327	1,877,242,849	1,877,242,849	1,835,432,059
Tuition Fee (PNBP)	406,828,370	214,169,050	108,011,225	187,501,120	233,043,403	229,910,634
Collaboration	478,743,975	197,505,814	118,760,675	151,978,779	187,506,021	226,899,053
Total	**2,225,979,020**	**2,280,703,461**	**2,440,011,227**	**2,216,722,748**	**2,297,792,273**	**2,292,241,746**



Budget Allocation for DPF

No.	BUDGET ALLO-CATION	YEAR (IDR)					AVERAGE
		2020	2021	2022	2023	2024	
1	Lecturer salary	1,299,806,675	1,828,428,597	2,172,639,327	1,836,642,849	1,836,642,849	1,794,832,059
2	Aca-demic and la-bora-tory staff sal-aries	40,600,000	40,600,000	40,600,000	40,600,000	40,600,000	40,600,000
3	Learn-ing ope-rational funds	247,596,655	102,565,902	50,674,000	79,479,899	90,050,000	114,073,291
4	Indirect opera-tional funds (elec-tricity, water, etc.)	259,775,690	100,908,962	56,097,900	90,000,000	135,499,424	128,456,395
5	Student activi-ties funds (associ-ations, publica-tion support, student ex-change, etc.)	10,000,000	20,000,000	20,000,000	20,000,000	20,000,000	18,000,000

F **Comment of the Higher Education Institution (02.03.2025)**

No.	BUDGET ALLOCATION	YEAR (IDR)					AVERAGE
		2020	2021	2022	2023	2024	
1	Lecturer salary	1,299,806,675	1,828,428,597	2,172,639,327	1,836,642,849	1,836,642,849	1,794,832,059
2	Academic and laboratory staff salaries	40,600,000	40,600,000	40,600,000	40,600,000	40,600,000	40,600,000
3	Learning operational funds	247,596,655	102,565,902	50,674,000	79,479,899	90,050,000	114,073,291
4	Indirect operational funds (electricity, water, etc.)	259,775,690	100,908,962	56,097,900	90,000,000	135,499,424	128,456,395
5	Student activities funds (associations, publication support, student exchange, etc.)	10,000,000	20,000,000	20,000,000	20,000,000	20,000,000	18,000,000
6	Investment for human resources	50,000,000	20,000,000	20,000,000	20,000,000	20,000,000	26,000,000
7	Investment for building and facilities	75,000,000	25,000,000	25,000,000	25,000,000	25,000,000	35,000,000
8	Investment for research equipments	10,000,000	10,000,000	20,000,000	30,000,000	30,000,000	20,000,000
9	Research funding	200,000,000	100,000,000	25,000,000	55,000,000	75,000,000	91,000,000

10	Community service funds	33,200,000	33,200,000	10,000,000	20,000,000	25,000,000	24,280,000
TOTAL		2,225,979,020	2,280,703,461	2,440,011,227	2,216,722,748	2,297,792,273	2,292,241,746

More detail in https://bit.ly/Financial-Report-Doctoral-Program

7. Development of strategies to ensure the sustainability of doctoral study programs;

We recognize the concerns regarding the current number of doctoral students and the challenges associated with maintaining program sustainability. Additionally, the Doctoral Study Program has identified key issues affecting the length of study, including:1) Many students hold permanent positions at other institutions, creating difficulties in balancing work commitments with their research responsibilities, and 2) The substantial financial requirements for research often compel students to seek external funding sources, which can delay progress.

Ensuring the sustainability of the doctoral programme is a priority, and we propose the following approach:

To address the low enrollment and ensure the long-term viability of the doctoral programme, the following measures has been implemented:

a) Implementation of a *By Research* Program

   This program provides students with greater flexibility in managing their research while maintaining close and structured communication with academic supervisors. It allows students to integrate their professional experience with their academic research, ensuring a more efficient and productive learning process.

b) Develop targeted campaigns to attract candidates, including partnerships with universities, research institutions, and industries.

c) Expand funding sources such as scholarships, grants, and assistantships to reduce financial barriers for prospective students.

d) Regularly review and update the curriculum to ensure it remains relevant, competitive, and aligned with industry and academic demands.

e) Foster a strong sense of community among doctoral students through networking events, collaborative research opportunities, and alumni engagement.

f) Make a schedule for research progress seminars collectively scheduled every semester,

g) Providing facilities, support, and assistance through involving student research in obtaining research funding opportunities from various sources.

8. Presentation of feedback related to the results of questionnaire surveys related to teaching each semester, and provision of information to students.

To maintain and enhance the quality of teaching, the Doctoral Study Program conducts regular evaluations through student feedback surveys each semester. These surveys serve as an important tool for assessing the effectiveness of instructional methods, curriculum relevance, and overall student satisfaction. As part of a commitment to transparency and continuous improvement, the survey results have been integrated into the program's website. This allows students to access relevant information regarding lecturer evaluations and improvements made in response to their feedback.

By systematically collecting, analyzing, and responding to student feedback, the program ensures that teaching quality remains high, fostering a dynamic and student-centered learning environment (Lecturer evaluation by student report).

G Summary: Expert recommendations (21.02.2025)

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

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**
Ba Forestry	With requirements for one year	30.09.2030
Ma Forestry	With requirements for one year	30.09.2030
PhD Forestry	With requirements for one year	30.09.2030
Ba Agroecotechnology	Without requirements	30.09.2030
Ba Agricultural Product Technology	Without requirements	30.09.2030

Requirements

For Bachelor's programme in Forestry

A 1. (ASIIN 3.1) A clear staff development plan needs to be provided.

For Master's and Doctoral programme in Forestry

A 2. (ASIIN 1.3, 1.5) The study plans of both programmes need to be revised and improved, in particular to make clear and transparent the choice between the two tracks offered (by course and by research).

A 3. (ASIIN 1.3, 1.5) Verify the workload, particularly in relation to the two tracks offered (by course and by research).

For the Doctoral programme in Forestry

A 4. (ASIIN 4.1) The module descriptions need to be revised and complemented.

A 5. (ASIIN D7) Assess the feasibility of the PhD programme with regard to the number of doctoral students and develop a strategy to ensure its sustainability.

Recommendations

For all programmes

E 1. (ASIIN 1.3, D3) It is recommended to improve the opportunities and support for students' international mobility through an appropriate framework.

E 2. (ASIIN 1.3, 3.1, D3) It is recommended to enhance the internationalization strategy by improving English language competences of staff members and students, stronger support for international mobility of the teaching staff and more exchange with foreign institutions and lecturers.

E 3. (ASIIN 3.3, D5) It is recommended to modernize the labs equipment and to improve software equipment.

For all Bachelor's Degree Programmes

E 4. (ASIIN 1.3) It is recommended to reduce the large number of modules by increasing the module size.

E 5. (ASIIN 1.3) It is recommended to regulate the duration and structure of the internship.

For the Bachelor's programme in Forestry

E 6. (ASIIN 5) It is recommended to analyze and evaluate the number of drop-outs and the reasons for this. A monitoring system should be set up to monitor this and action should be taken based on the results.

For the Doctoral programme in Forestry

E 7. (ASIIN D4, D7) It is recommended to elaborate a comprehensive study guide book for the PhD programme, including minimum requirements for the PhD thesis and supervision rules.

E 8. (ASIIN D1) It is recommended to introduce the option of cumulative thesis in the PhD programme.

H Comment of the Technical Committee 08 - [Agriculture, Nutritional Sciences and Landscape Architecture] (17.03.2025)

Assessment and analysis for the award of the ASIIN seal:

The Technical Commission discusses the procedure. The main point of concern is requirement A5 which concerns itself with the feasibility of the PhD study programme. The members of the Technical Committee discuss in how far it is the responsibility of an accreditation agency to maintain the sustainability of a study programme. They agree that such a requirement cannot yield productive results. Since, obviously, the sustainability still is important per se, the TC suggests to demote the requirement to a recommendation (E9) to show its importance.

The Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Forestry	With requirements for one year	30.09.2030
Ma Forestry	With requirements for one year	30.09.2030
PhD Forestry	With requirements for one year	30.09.2030
Ba Agroecotechnology	Without requirements	30.09.2030
Ba Agricultural Product Technology	Without requirements	30.09.2030

Requirements

For Bachelor's programme in Forestry

A 1. (ASIIN 3.1) A clear staff development plan needs to be provided.

For Master's and Doctoral programme in Forestry

A 2. (ASIIN 1.3, 1.5) The study plan needs to be revised and improved, in particular to make clear and transparent the choice between the two tracks offered (by course and by research).

A 3. (ASIIN 1.3, 1.5) Verify the workload, particularly in relation to the two tracks offered (by course and by research).

For the Doctoral programme in Forestry

A 4. (ASIIN 4.1) The module descriptions need to be revised and complemented.

A 5. ~~(ASIIN D7) Assess the feasibility of the PhD programme with regard to the number of doctoral students and develop a strategy to ensure its sustainability~~ [downgraded to **E9**].

Recommendations

For all programmes

E 1. (ASIIN 1.3, D3) It is recommended to improve the opportunities and support for students' international mobility through an appropriate framework.

E 2. (ASIIN 1.3, 3.1, D3) It is recommended to enhance the internationalization strategy by improving English language competences of staff members and students, stronger support for international mobility of the teaching staff and more exchange with foreign institutions and lecturers.

E 3. (ASIIN 3.3, D5) It is recommended to modernize the labs equipment and to improve software equipment.

For all Bachelor's Degree Programmes

E 4. (ASIIN 1.3) It is recommended to reduce the large number of modules by increasing the module size.

E 5. (ASIIN 1.3) It is recommended to regulate the duration and structure of the internship.

For the Bachelor's programme in Forestry

E 6. (ASIIN 5) It is recommended to analyze and evaluate the number of drop-outs and the reasons for this. A monitoring system should be set up to monitor this and action should be taken based on the results.

For the Doctoral programme in Forestry

E 7. (ASIIN D4, D7) It is recommended to elaborate a comprehensive study guide book for the PhD programme, including minimum requirements for the PhD thesis and supervision rules.

E 8. (ASIIN D1) It is recommended to introduce the option of cumulative thesis in the PhD programme.

E 9. (ASIIN D7) It is recommended to assess the feasibility of the PhD programme with regard to the number of doctoral students and to develop a strategy to ensure its sustainability [downgraded from **A5**].

I Decision of the Accreditation Commission (25.03.2025)

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

The Accreditation Commission follows the assessment of the experts and of the Technical Committee 08.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**
Ba Forestry	With requirements for one year	30.09.2030
Ma Forestry	With requirements for one year	30.09.2030
PhD Forestry	With requirements for one year	30.09.2030
Ba Agroecotechnology	Without requirements	30.09.2030
Ba Agricultural Product Technology	Without requirements	30.09.2030

Requirements

For Bachelor's programme in Forestry

A 1. (ASIIN 3.1) A clear staff development plan needs to be provided.

For Master's and Doctoral programme in Forestry

A 2. (ASIIN 1.3, 1.5) The study plan needs to be revised and improved, in particular to make clear and transparent the choice between the two tracks offered (by course and by research).

A 3. (ASIIN 1.3, 1.5) Verify the workload, particularly in relation to the two tracks offered (by course and by research).

For the Doctoral programme in Forestry

A 4. (ASIIN 4.1) The module descriptions need to be revised and complemented.

Recommendations

For all programmes

E 1. (ASIIN 1.3, D3) It is recommended to improve the opportunities and support for students' international mobility through an appropriate framework.

E 2. (ASIIN 1.3, 3.1, D3) It is recommended to enhance the internationalization strategy by improving English language competences of staff members and students, stronger support for international mobility of the teaching staff and more exchange with foreign institutions and lecturers.

E 3. (ASIIN 3.3, D5) It is recommended to modernize the labs equipment and to improve software equipment.

For all Bachelor's Degree Programmes

E 4. (ASIIN 1.3) It is recommended to reduce the large number of modules by increasing the module size.

E 5. (ASIIN 1.3) It is recommended to regulate the duration and structure of the internship.

For the Bachelor's programme in Forestry

E 6. (ASIIN 5) It is recommended to analyze and evaluate the number of drop-outs and the reasons for this. A monitoring system should be set up to monitor this and action should be taken based on the results.

For the Doctoral programme in Forestry

E 7. (ASIIN D4, D7) It is recommended to elaborate a comprehensive study guide book for the PhD programme, including minimum requirements for the PhD thesis and supervision rules.

E 8. (ASIIN D1) It is recommended to introduce the option of cumulative thesis in the PhD programme.

E 9. (ASIIN D7) It is recommended to assess the feasibility of the PhD programme with regard to the number of doctoral students and to develop a strategy to ensure its sustainability.

J Fulfilment of Requirements (27.03.2026)

Analysis of the experts and the Technical Committee/s (03.03.2026)

Requirements

For all degree programmes

A 1. (ASIIN 3.1) A clear staff development plan needs to be provided.

Initial Treatment	
Experts	fulfilled Justification: The university provides a comprehensive overview of current and future lecturer positions, which are integrated into a well-designed staff development plan at faculty and programme levels including competency gap analysis, training and mentoring schemes, budget allocation, funding sources, and a monitoring and evaluation mechanism.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the experts' assessment without changes.

For Master's and Doctoral programme in Forestry

A 2. (ASIIN 1.3, 1.5) The study plan needs to be revised and improved, in particular to make clear and transparent the choice between the two tracks offered (by course and by research).

Initial Treatment	
Experts	fulfilled Justification: An updated study plan was provided by the university. The choice between two tracks is documented and clear outlined, including transparent selection and approval procedures.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the experts' assessment without changes.

A 3. (ASIIN 1.3, 1.5) Verify the workload, particularly in relation to the two tracks offered (by course and by research).

Initial Treatment	
Experts	fulfilled Justification: The students' workload has been recalculated and verified for both tracks and validated through student feedback and internal QA review. The university provides supporting evidence for this. The workload is now documented for each module and differentiated for each track.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the experts' assessment without changes.

For the Doctoral programme in Forestry

A 4. (ASIIN 4.1) The module descriptions need to be revised and complemented.

Initial Treatment	
Experts	fulfilled Justification: Revised detailed module descriptions are available and include all the necessary information.
TC 08	fulfilled Vote: unanimous Justification: The TC follows the experts' assessment without changes.

Decision of the Accreditation Commission (27.03.2026)

Degree programme	**ASIIN-label**	**Accreditation until max.**
Ba Forestry	All requirements fulfilled	30.09.2030
Ma Forestry	All requirements fulfilled	30.09.2030
PhD Forestry	All requirements fulfilled	30.09.2030
Ba Agroecotechnology	All requirements fulfilled	30.09.2030
Ba Agricultural Product Technology	All requirements fulfilled	30.09.2030

Appendix: Programme Learning Outcomes and Curricula

According to the University's Website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelors programme in Forestry:

Programme Learning Outcomes:

	Description
Forestry Technical Personnel	• Play a role in improving the role and function of forests • Engaging in sustainable forest management • Becoming a field manager in the forestry sector • Continuing higher education • Becoming a civil servant in the forestry and environmental sector
Forestry Analyst	• Have a role in analyzing forestry and environmental issues • Involved in research in the field of forestry • Become a forestry observer and consultant who has the ability to observe, analyze, process and translate information in the form of data and turn it into a report.
Forestry Extension Officer	• Involved in increasing the capacity of communities around the forest • Playing a role in assisting communities in preserving forests
Forestry Entrepreneurship	• Becoming an entrepreneur in the utilization of forest resources • Can develop various innovations in the development of multi-forestry businesses • Invited to be a resource person in the development of forestry multi-enterprise

Expected Learning Outcomes

1. Have the responsibility to work professionally both independently and in a team in the field of forestry and tropical environment including social entrepreneurship.
2. Able to master theoretical concepts and basic principles of science and technology in the field of forestry and tropical environment, as well as other related sciences.
3. Able to identify important elements and integrate them in the field of forestry and tropical environment based on scientific principles.
4. Able to apply logical, critical, systematic and innovative thinking in implementing values in accordance with the field of expertise in forestry and tropical environment.
5. Able to lead, work in a team, and be responsible for achieving personal and group performance as well as communicating verbally and non-verbally.
6. Able to conduct studies on the development of science and technology in the field of forestry and tropical environment using databases and other information sources.
7. Able to plan, implement, organize, and evaluate activities in the field of forestry and tropical environment.
8. Able to select and apply appropriate instruments, processes and methods to solve problems in the field of forestry and humid tropical environments.
9. Able to implement practical technical standards in the field of forestry and humid tropical environments by working efficiently, communicatively, professionally and responsibly.

According to the University's Website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Masters programme in Forestry:

Program Learning Outcomes

	Description
Lecturer in Forestry and Environment	• Graduates are able to develop themselves as lecturers in the field of forestry and environment, instructors at forestry and environmental education and training institutions, and teachers at forestry and environmental vocational schools. • Graduates have the competence to plan, implement, assess learning as well as guide and train in the learning process. • Graduates have the competence to conduct research and community service • Graduates are prepared to continue their education to a higher level at reputable universities both at home and abroad.

	Description
Forestry and Environmental Researcher	• Graduates have the ability to methodically analyze, conclude, and write scientific data within the framework of developing science and technology in the forestry and environmental fields. • Graduates are able to become reference experts in the development of forestry and tropical forest environmental research.
Main Technical Staff for Forestry and Environment	• Graduates are able to involve themselves in the development of central issues in the field of forestry and tropical forest environment in a professional and sustainable manner.
Forestry and Environmental Professionals	• Graduates are able to develop themselves as Entrepreneurs, Managers and Consultants in the forestry and environmental fields. • Graduates are able to apply innovative methods to the problem-solving process in the implementation of programs in the field of forestry and tropical environment.
Policy Maker in Forestry and Environment	• Graduates are able to involve themselves in making and determining policies related to forestry and the environment.

Expected Learning Outcomes

1. Internalizing scientific values, norms and ethics with responsible performance in work in the field of forestry and tropical forest environment expertise.
2. Have knowledge, in-depth understanding and certain specialization in the field of forestry and tropical forest environment
3. Able to identify, analyze and develop solutions to current issues and problems in the field of forestry and tropical forest environment.
4. Able to apply logical, critical, systematic and innovative thinking in compiling research and work schemes in the field of forestry and tropical forest environment.
5. Able to position scientific concepts and descriptions resulting from thinking into a research map developed through an inter or multidisciplinary approach, and can disseminate and communicate them through various media and forums to a wider audience.

6. Able to lead, work in a team and be responsible for achieving group work results as well as conducting evaluations and supervision of the completion of work under his/her responsibility.
7. Able to develop theories, models, techniques and methods that can be applied in the field of forestry and tropical forest environments.
8. Able to analyze and evaluate system performance, then make decisions and implement them with more innovative methods.
9. Able to identify and assess the ecological, social and economic implications of the application and implementation of initiatives, approaches, methods and programs in the forestry sector and tropical forest environment.

According to the University's Website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Doctoral programme in Forestry:

Program Learning Outcomes

	Description
Educator as lecturer, Widiaswara(Education practitioner) and tutor in the field of forestry and environment (PEO)	• Actively involved in professional development in their community. • Invited as a speaker in scientific forums of forestry. • Excellence in their work environment as shown by recognition from peers and superiors and promoted.
Researcher in forestry and environment	• Involved in forestry and environmental research, and able to publish the articles for reputable journals on a national and international scale. • Become an expert in the field of forestry and the environment, and be involved in various environmentally sound development activities.
Consultant in forestry and environment	• Become a consultant in the field of forestry and environment, both in formal and informal settings. • B. Actively engage in professional development in their own community.
Entrepreneurs in forestry and the environment	• Developing various innovations and diversification of forest-based products, thus creating jobs for the community. • Have the opportunity to act as a facilitator or speaker which providing training related to increasing forest-

	Description
	based production efficiently in accordance with community needs.
Policy drafter in the field of forestry and environment on a national and international scale	• Involved as chairman and member of the drafting team of regulations and legislation in the forestry and environment sector. • Having the opportunity to become a legal consultant or expert witness in the settlement of legal cases in the field of forestry and the environment.

Expected Learning Outcomes

1. Internalizing scientific values, norms and ethics.
2. Able to synthesize knowledge obtained from research results with novelty and implementation.
3. Able to find and develop scientific concepts that have novel value, and able to develop scientific arguments as scientific solutions.
4. Able to critique the philosophy of theory and research methodology in forestry science and humid tropical environments through interdisciplinary, multidisciplinary, and transdisciplinary approaches.
5. Able to demonstrate academic leadership in managing resources to develop research plans independently, and have scientific ethics.
6. Able to manage data and information to support the decision-making process.
7. Able to work and communicate in an international context.

According to the University's Website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelors programme in Agricultural Product Technology:

Program Learning Outcomes (PLO)

No.	Learning Outcomes	Description
1.	Academics, educators, and research assistants	Competent in developing agricultural product science and technology through education, teaching, and research.
2.	Bureaucrats and government executives	Competent in applying the principles of agricultural product science and technology to solve problems of society, state and nation.
3.	Industry practitioners/consultants related to agricultural and processed products	Competent in applying the principles of agricultural product science and technology in the agricultural product industry
4.	Entrepreneurship in fields related to agricultural and processed products	Competent in applying the science and technology of agricultural products for entrepreneurship funds

Expected Learning Outcomes

No.	THP learning outcomes
1	Able to explain the structure, function, and properties of food / agricultural products, as well as changes during processing and storage
2	Able to identify and control physical, chemical, biological, and microbiological hazards in the food / agricultural product processing chain to ensure the quality and safety of agricultural products in accordance with regulations.
3	Able to determine methods and apply food/agricultural product analysis techniques that are appropriate and in accordance with objectives
4	Able to determine methods of storage, processing, preservation, and packaging of food / agricultural products
5	Able to design material handling and production processes of humid tropical food / agricultural products and their environment in a sustainable manner
6	Able to analyze data to design solutions in the handling of materials or production processes of moist food/tropics in a sustainable manner
7	Able to show independent performance and organize a team to produce a work in the field of food / agricultural products that are recognized for their usefulness.
8	Internalize academic ethics as a professional individual

According to the University's Website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelors programme in Agroecotechnology:

Program Learning Outcomes (PLO)

PLO-1 Practitioner	Graduates become farmers, industrial practitioners, entrepreneurs, consultants, extension workers who are able to apply science and technology holistically in the field of humid tropical agriculture.
PLO-2 Academics	Graduates become prospective laboratory administrators, laboratory assistants, prospective high school teachers, ASN, and prospective master's students who master theoretical concepts and their implementation in the field of humid tropical agriculture.
PLO-3 Researcher	Graduates become researchers in government and private institutions who are able to think analytically in identifying and formulating problems and seeking solutions based on agricultural science.

Capaian Pembelajaran / ***Description of Intended learning Outcomes (ILO) on the Bachelor Program of Agroecotechnology (BPA)***

ILO	Description
ILO1	Bertakwa kepada Tuhan Yang Maha Esa, menjunjung tinggi nilai kemanusiaan, agama, moral, norma dan etika akademik, serta bertanggung jawab terhadap pengetahuan dan penerapan teknologi yang dimiliki. *Have faith in God Almighty, uphold human values, religion, morals, academic norms and ethics, and be responsible for the knowledge and application of technology.*
ILO2	Menguasai IPTEKS dalam Bidang Pertanian Tropika lembab yang berkelanjutan *Mastering science and technology in the field of sustainable humid tropical agriculture*
ILO3	Menguasai metodologi penelitian sehingga mampu beradaptasi terhadap situasi yang dihadapi dalam penyelesaian masalah di Bidang Pertanian Tropika Lembab secara prosedural dan etika keilmuan. *Mastering research methodology and adapting to situations faced in solving problems in the Humid Tropical Agriculture Sector procedurally and scientifically.*
ILO4	Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam konteks pengembangan dan implementasi IPTEKS dalam menyelesaikan permasalahan pertanian tropika lembab *Able to implement logical, critical, systematic, and innovative thinking in the context of developing and implementing science and technology to solve humid tropical agricultural problems.*
ILO5	Mampu menunjukkan kinerja mandiri, bermutu, dan terukur serta mampu bertanggungjawab atas pencapaian hasil kerja kelompok dan melakukan

The following **curriculum** is presented:

Bachelors Programme in Forestry

COURSE MODULE FACULTY OF FORESTRY MULAWARMAN UNIVERSITY

Semester I		
1.	[MU0000602W002] 2 SKS (3.2 ECTS)	Pancasila "The Basic Principles of the Indonesian State"
2.	[190401802W006] 3 SKS (4.8 ECTS)	Religion
3.	[190401602W010] 2 SKS (3.2 ECTS)	Basics of Management
4.	[MU0000602W004] 2 SKS (3.2 ECTS)	Indonesian Language
5.	[MU0000602W006] 3 SKS (4.8 ECTS)	Social and Culture of Science
6.	[190401602W001] 3 SKS (4.8 ECTS)	English for Forestry
7.	[190401602W002] 2 SKS (3.2 ECTS)	Biology For Forestry
8.	[190401602W004] 2 SKS (3.2 ECTS)	Chemistry for Forestry
9.	[190401602W005] 2 SKS (3.2 ECTS)	Mathematic for Forestry
10.	[190401602W027] 1 SKS (3.2 ECTS)	Forestry Science Introduction

Semester II		
1.	[190401602W003] 2 SKS (3.2 ECTS)	Basic Physics
2.	[190401602W006] 3 SKS (4.8 ECTS)	Forestry Statistics
3.	[190401603W007] 2 SKS (3.2 ECTS)	Agro-climatology
4.	[190401603W011] 2 SKS (3.2 ECTS)	Dendrology
5.	[190401602W013] 3 SKS (4.8 ECTS)	Forest Resources Economics
6.	[1190401602W015] 3 SKS (4.8 ECTS)	Forest Disease Science
7.	[190401603W019] 2 SKS (3.2 ECTS)	Wood Measurement
8.	[190401603W020] 2 SKS (3.2 ECTS)	Woody Plant Anatomy
9.	[MU0000602W003] 2 SKS (3.2 ECTS)	The Basic Principles of the Indonesian Citizenship
10.	[190401601W031] 1 SKS (3.2 ECTS)	Practicum of Forestry Science Introduction

Semester III		
1.	[190401603W012] 2 SKS (3.2 ECTS)	Forest Ecology
2.	[190401602W016] 3 SKS (4.8 ECTS)	Forestry Protection Science
3.	[190401603W018] 2 SKS (3.2 ECTS)	General Soil Science
4.	[190401603W021] 2 SKS (3.2 ECTS)	Forest Inventory
5.	[190401602W022] 3 SKS (4.8 ECTS)	Forest Policy and Legislation
6.	[1190401602W032] 3 SKS (4.8 ECTS)	Wood Properties
7.	[190401603W028] 2 SKS (3.2 ECTS)	Chemical Processing of Forest Products
8.	[190401603W020] 2 SKS (3.2 ECTS)	Woody Processing Industry
9.	[190401601W033] 1 SKS (3.2 ECTS)	Silvica Science

Semester IV		
1.	[190401603W012] 2 SKS (3.2 ECTS)	Forest Harvesting
2.	[190401602W029] 3 SKS (4.8 ECTS)	Social Forestry
3.	[190401603W009] 2 SKS (3.2 ECTS)	Wood Biology and Deterioration
4.	[190401603W024] 2 SKS (3.2 ECTS)	Soil and Water Conservation
5.	[190401602W023] 3 SKS (4.8 ECTS)	Forest Entrepreneurship
6.	[1190401602W017] 3 SKS (4.8 ECTS)	Soil Science and Forest Nutrition
7.	[190401603W034] 2 SKS (3.2 ECTS)	Silviculture
8.	[190401603W030] 2 SKS (3.2 ECTS)	Protection and Conservation of Nature
9.	[190401601W014] 1 SKS (3.2 ECTS)	Utilization of Non Timber Forest Products

CONCENTRATION STUDY

Forest Management

Semester V	Semester VI	Semester VII	Semester VIII
Economic and Cost Analysis of Forestry Businesses [190401602P037] 2 SKS (3.2 ECTS)	Scientific Method and Experimental Design [190401603W025] 3 SKS (4.8 ECTS)	KKN (Real Work Lecture) [190401604W127] 3 SKS (3.2 ECTS)	KKN (Real Work Lecture) [190401604W127] 2 SKS (3.2 ECTS)
Forest Management Planning [190401602P096] 2 SKS (3.2 ECTS)	Growth and Yield Analysis [190401602P038] 2 SKS (3.2 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)
Ergonomics [190401603P056] 3 SKS (4.8 ECTS)	Geographic Information System [190401603P107] 3 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 1 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 3 SKS (4.8 ECTS)
Forest Biometrics [190401602P042] 2 SKS (3.2 ECTS)	Conflict Management [190401602P076] 2 SKS (3.2 ECTS)	Results Seminar [190401601W125] 1 SKS (4.8 ECTS)	Results Seminar [190401601W125] 3 SKS (4.8 ECTS)
Land Measuring and Mapping Science [190401603P063] 3 SKS (4.8 ECTS)	Environmental Economics [190401602P054] 2 SKS (3.2 ECTS)	Final Exam [190401604W126] 4 SKS (6.4-9.6 ECTS)	Final Exam [190401604W126] 4-6 SKS (6.4-9.6 ECTS)
ELECTIVE COURSES: 6 SKS (9.6 ECTS)	Forest Management [190401602P074] 2 SKS (3.2 ECTS)		

Forest Products Technology

Semester V	Semester VI	Semester VII	Semester VIII
Wood Preservation [190401602P084] 2 SKS (3.2 ECTS)	Scientific Method and Experimental Design [190401603W025] 3 SKS (4.8 ECTS)	KKN (Real Work Lecture) [190401604W127] 3 SKS (3.2 ECTS)	KKN (Real Work Lecture) [190401604W127] 2 SKS (3.2 ECTS)
Bio-composites [190401602P096] 2 SKS (3.2 ECTS)	Wood Drying [190401602P038] 2 SKS (3.2 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)
Fiber Chemical Technology and Biopolymers [190401603P056] 3 SKS (4.8 ECTS)	Forestry Industry Management [190401603P107] 3 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 1 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 3 SKS (4.8 ECTS)
Wood Physics and Mechanics [190401602P042] 2 SKS (3.2 ECTS)	Extractive Product Application Engineering [190401602P076] 2 SKS (3.2 ECTS)	Results Seminar [190401601W125] 1 SKS (4.8 ECTS)	Results Seminar [190401601W125] 3 SKS (4.8 ECTS)
Wood Identification and Use [190401603P063] 3 SKS (4.8 ECTS)	Bioenergy and Biomass Conversion [190401602P054] 2 SKS (3.2 ECTS)	Final Exam [190401604W126] 4 SKS (6.4-9.6 ECTS)	Final Exam [190401604W126] 4-6 SKS (6.4-9.6 ECTS)
Forest Products Technology Practice 1 and 2 6 SKS (9.6 ECTS)	Wood Gluing [190401602P074] 2 SKS (3.2 ECTS)		
ELECTIVE COURSES: 7 SKS (9.6 ECTS)	Forest Products Technology Practice 3 and 4 6 SKS (9.6 ECTS)		
	ELECTIVE COURSES: 7 SKS (9.6 ECTS)		

Silviculture

Semester V	Semester VI	Semester VII	Semester VIII
Forest Tree Improvement [190401603P082] 2 SKS (3.2 ECTS)	Scientific Method and Experimental Design [190401603W025] 3 SKS (4.8 ECTS)	KKN (Real Work Lecture) [190401604W127] 3 SKS (3.2 ECTS)	KKN (Real Work Lecture) [190401604W127] 2 SKS (3.2 ECTS)
Soil Survey and Land Evaluation [190401603P111] 2 SKS (3.2 ECTS)	Forest Microbiology [190401603P078] 3 SKS (4.8 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)	PKL (Field Work Practice) [190401603W123] 3 SKS (4.8 ECTS)
Natural Forest Silviculture [190401603P105] 3 SKS (4.8 ECTS)	Silviculture of Plantation Forest [190401603P106] 3 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 1 SKS (4.8 ECTS)	Proposal Seminar [190401601W124] 3 SKS (4.8 ECTS)
Forest Insect Science [190401603P062] 2 SKS (3.2 ECTS)	Forest Soil Fertility Management [190401602P086] 2 SKS (3.2 ECTS)	Results Seminar [190401601W125] 1 SKS (4.8 ECTS)	Results Seminar [190401601W125] 3 SKS (4.8 ECTS)
ELECTIVE COURSES: 9 SKS (14.4 ECTS)	ELECTIVE COURSES: 6 SKS (9.6 ECTS)	Final Exam [190401604W126] 4 SKS (6.4-9.6 ECTS)	Final Exam [190401604W126] 4-6 SKS (6.4-9.6 ECTS)

Forest Resource Conservation and Ecotourism

Semester V	Semester VI	Semester VII	Semester VIII
River Basin Management [190401602P084] 2 SKS (3.2 ECTS)	**Scientific Method and Experimental Design** [190401603W025] 3 SKS (4.8 ECTS)	**KKN (Real Work Lecture)** [190401604W127] 3 SKS (3.2 ECTS)	**KKN (Real Work Lecture)** [190401604W127] 2 SKS (3.2 ECTS)
Forest Microclimate [190401602P096] 2 SKS (3.2 ECTS)	**Ecotourism** [190401602P038] 2 SKS (3.2 ECTS)	**PKL (Field Work Practice)** [190401603W123] 3 SKS (4.8 ECTS)	**PKL (Field Work Practice)** [190401603W123] 3 SKS (4.8 ECTS)
Wildlife Ecology [190401603P056] 3 SKS (4.8 ECTS)	**Biodiversity** [190401603P107] 3 SKS (4.8 ECTS)	**Proposal Seminar** [190401601W124] 1 SKS (4.8 ECTS)	**Proposal Seminar** [190401601W124] 3 SKS (4.8 ECTS)
ELECTIVE COURSES: 18 SKS (28.8 ECTS))	**Vegetation Analysis** [190401602P076] 2 SKS (3.2 ECTS)	**Results Seminar** [190401601W125] 1 SKS (4.8 ECTS)	**Results Seminar** [190401601W125] 3 SKS (4.8 ECTS)
	ELECTIVE COURSES: 20 SKS (32 ECTS))	**Final Exam** [190401604W126] 4 SKS (6.4-9.6 ECTS)	**Final Exam** [190401604W126] 4-6 SKS (6.4-9.6 ECTS)

Compulsory and Specialization Elective Courses

Code	Course	SKS	ECTS
	Compulsory Elective Course		
	Forest and Nature Conservation		
190401802P011	Conservation, Environment and Forestry	2	3.2
190401802P012	Ecology of Specific Ecosystems	2	3.2
190401802P013	Wild Animals Management	3	4.8
190401802P011	Conservation, Environment and Forestry	2	3.2
	Tropical Silviculture		
190401802P020	Forest Protection in Tropical Rainforest	2	3.2
190401802P021	Formulation of Silvicultural System	2	3.2
190401802P022	Evaluation of Land Productivity and Suitability	3	4.8
	Forest Management		
190401802P030	Measurement and Improvement Forest Stand Quality	3	4.8
190401802P031	On-site Forest Planning and Inventory	2	3.2
190401802P032	Low Emission Harvesting	2	3.2
	Forest Product Technology		
190401802P040	Improvement of Wood Quality	3	4.8
190401802P041	Fiber Processing and Renewable Energy	2	3.2
190401802P042	Technology of Extractive	2	3.2
	Specialization Elective Course		
	Forest and Nature Conservation		
190401802P014	Integrated Watershed Management	2	3.2
190401802P015	Environmental Microclimatology	2	3.2
190401802P016	Computing and Programming Environment Databases	3	4.8
190401802P017	Conservation Engineering and Land Capability Evaluation	2	3.2
190401802P018	Tourism Target-area Plan and Management	2	3.2
190401802P019	Weather Modification Technology	2	3.2
	Tropical Silviculture		
190401802P023	Silviculture of Urban Forest	3	4.8
190401802P024	Advance on Agroforestry	3	4.8
190401802P025	Sylvofishery	3	4.8
190401802P026	Insect Biodiversity and The Utilization	2	3.2
190401802P027	Fertilization and Soil Fertility	3	4.8
190401802P028	Advanced on Climate Change	2	3.2
190401802P029	Advance on Biochar	3	4.8
	Forest Management		
190401802P033	Forest Spatial Analysis	3	4.8
190401802P034	Regional Landscape Analysis	2	3.2
190401802P035	Forest Sociology	3	4.8
190401802P036	Forest and Environmental Economics	3	4.8
190401802P037	Forest Policy	2	3.2
190401802P038	Social Forestry	3	4.8
190401802P039	Timber Lagaility and Verification System	2	3.2
	Forest Product Technology		
190401802P043	Technology of Wood-Based Panel	2	3.2
190401802P044	Eco-eficiency in Wood Industry	2	3.2
190401802P045	Bio-deterioration of Wood	3	4.8
190401802P046	Tree Care and Maintenance	2	3.2
190401802P047	Wood Drying and Preservation	2	3.2
190401802P048	Chemical Biomass Conversion	2	3.2
190401802P049	Technology of Exudate Utilization	2	3.2

Bachelors Programme in Agricultural Product Technology (BPAPT)

No	Course Code	Course Name	SKS			ECTS
			Class	Practice	Total Credits	
Semester 1						
1	MU0000603W001	Religion	2	1	3	4.8
2	MU0000602W002	Pancasila	2	0	2	3.2
3	MU0000602W004	Indonesian Language	2	0	2	3.2
4	MU0000602W006	Basic Social and Cultural Sciences	2	0	2	3.2
5	220303612W005	Introduction to Humid Tropocal Agriculture	2	0	2	3.2
6	220303613W006	Biology of Agricultural Products	2	1	3	4.8
7	220303613W007	Agricultural Products Chemistry I	2	1	3	4.8
8	220303612W008	Mathematics	2	0	2	3.2
Semester 2						
9	MU0000602W003	Citizenship	2	0	2	3.2
10	220303623W002	Agricultural English	2	1	3	4.8
11	220303623W003	Fundamentals of Management	2	0	2	3.2
12	220303622W004	Knowledge of Agricultural Materials	2	0	2	3.2
13	220303622W005	Microbiology of Agricultural Products	2	0	2	3.2
14	220303622W006	Agricultural Products Chemistry II	2	0	2	3.2
15	220303622W007	Computer Applications for the Agricultural Industry	0	2	2	3.2
16	220303622W008	Physical Chemistry of Agricultural Products	2	0	2	3.2
17	220303622W009	Analytical Chemistry for Agricultural Products Research	2	0	2	3.2
18	220303622W010	Physics of Agricultural Products	2	1	3	4.8
Semester 3						
19	220303632W001	Agricultural Statistics	2	1	3	4.8
20	220303632W002	Microbiology of Agricultural Product Processing	2	0	2	3.2
21	220303633W003	Operation Unit	2	1	3	4.8
22	220303632W004	Engineering Economics	2	0	2	3.2
23	220303633W005	Biochemistry of Agricultural Products	2	1	3	4.8
24	220303632W006	Processing Tools and Machines	2	0	2	3.2
25	220303632W007	Physical Properties of Agricultural Products	2	0	2	3.2
26	220303632W008	Quality Control	2	0	2	3.2
27	220303632W009	Chemical Analysis of Agricultural Products	2	0	2	3.2
Semester 4						
28	220303643W001	Research Methodology	2	1	3	4.8
29	220303643W002	Experimental Design	2	1	3	4.8
30	220303642W003	Sanitation and Safety in the Food Processing Industry	2	0	2	3.2
31	220303642W004	Food Regulation	2	0	2	3.2
32	220303643W005	Microbiological Analysis of Agricultural Products	1	2	3	4.8
33	220303642W006	Food Nutrition	2	0	2	3.2
34	220303642W007	Practical Physico-Chemical Analysis of Agricultural Products	0	2	2	3.2
35	220303642W008	Post-Harvest Physiology and Technology	2	0	2	3.2
36	220303642W009	Process Technology	2	0	2	3.2
Semester 5						
37	220303653W001	Food Processing Technology and Agricultural Products	2	1	3	4.8
38	220303653W002	Technology for Preserving and Packaging Agricultural Products	2	1	3	4.8
39	220303652W003	Entrepreneurship	2	0	2	3.2

40	220303652W004	Plant Layout and Design	2	0	2	3.2
41	220303652W005	Field Work Practice	0	2	2	3.2
Semester 6						
42	220303661W001	Thesis Assitance I	0	1	1	1.6
43	220303663W002	Sensory Test	2	1	3	4.8
44	220303663W003	Product Development and Marketing	1	2	3	4.8
45	220303662W004	Operations Research	2	1	3	4.8
Semester 7						
46	220303671W001	Thesis Assitance II	0	1	1	1.6
47	MU0000603W007	Seminar	0	2	2	3.2
48	220303672W003	Thesis	0	6	6	9.6
49	220303676W004	Community Service Program (KKN)	0	4	4	6.4
Elective Courses Offered in Odd Semesters						
	220303652P006	Freshener Technology	2	0	2	3.2
	220303652P007	Quality Management of the Agricultural Products Industry	2	0	2	3.2
	220303653P008	Legume, Cereal and Tuber Technology	2	1	3	4.8
	220303652P009	Palm, Rubber and Tobacco Technology	2	0	2	3.2
	220303653P010	Livestock and Aquatic Products Technology	2	1	3	4.8
	220303652P011	Food Fortification Technology	2	0	2	3.2
	220303652P012	Fermentation Technology	2	0	2	3.2
	220303652P013	Technology for Handling and Management of Agricultural Industrial Waste	2	0	2	3.2
	220303653P014	Oil and Fat Technology	2	1	3	4.8
	220303652P015	Food Additives	2	0	2	3.2
		Industrial Internship/Humanitarian Assignment/Village Building/Entrepreneurship (MBKM Free Form)	2-20		2-20	
Table. List of Elective Courses Offered in Even Semesters						
	220303663P005	Fruit and Vegetable Technology	2	0	2	3.2
	220303662P006	Functional Food Processing Technology	2	0	2	3.2
	220303662P007	Lactic Acid Bacteria Technology	2	1	3	4.8
	220303663P008	Nutritional Evaluation in Food Processing	2	1	3	4.8
	220303663P009	Spice and Essential Oil Technology	2	1	3	4.8
	220303663P010	Cake and Bread Technology	2	1	3	4.8
	220303662P011	Enzyme Technology	2	0	2	3.2
	220303662P012	Warehouse Management	2	0	2	3.2
	220303662P013	Technology and Management of Catering Services	2	0	2	3.2
	220303662P014	Sugar and Polysaccharide Technology	2	0	2	3.2
	220303662P015	Halal Food Technology and Management	2	0	2	3.2
		Industrial Internship/Humanitarian Assignment/Village Building/Entrepreneurship (MBKM Free Form)	2-20		2-20	

Note: 1 Credit = 1.59 ECTS

According to Rector decree Number 3908, year 2020, for SKS National Credit Conversion to Europe Credit (ECTS)

Bachelors Programme in Agroecotechnology

Semester I

No	Kode (Code)	Mata Kuliah (Courses)	SKS/CU	ECTS
1	MU0000603W001	Pendidikan Agama (Religious Education)	3	4.8
2	MU0000602W002	Pancasila (Pancasila)	2	3.2
3	MU0000602W004	Bahasa Indonesia (Indonesian Language)	2	3.2
4	MU0000602W006	Ilmu Sosial dan Budaya Dasar (Social Science and Basic Culture)	2	3.2
5	220301612W005	Pengantar Ilmu Pertanian Tropika Lembab (Introduction of Humid Tropical Agriculture Science)	2	3.2
6	220301613W006	Mikrobiologi Dasar (Fundamental of Microbiology)	3	4.8
7	220301612W007	Agroekologi (Agroecology)	2	3.2
8	220301612W008	Sistem Manajemen Informasi (Information Management System)	2	3.2
9	220301612W009	Biologi Pertanian (Agriculture Biology)	2	3.2
Jumlah (Total)			**20**	**32.0**

Semester II

No	Kode (Code)	Mata Kuliah (Courses)	SKS/CU	ECTS
1	MU0000602W003	Kewarganegaraan (Citizenship)	2	3.2
2	220301622W002	Kewirausahaan (Enterpreunership)	2	3.2
3	220301623W003	Bahasa Inggris Pertanian (Agricultural English)	3	4.8
4	220301623W004	Agronomi (Agronomy)	3	4.8
5	220301623W005	Ilmu Tanah (Soil Science)	3	4.8
6	220301622W006	Genetika Dasar (Fundamental of Genetics)	2	3.2
7	220301623W007	Proteksi Tanaman (Plant Protection)	3	4.8
8	220301623W008	Botani (Botany)	3	4.8
Jumlah (Total)			**21**	**33.6**

Semester III

No	Kode (Code)	Mata Kuliah (Courses)	SKS/CU	ECTS
1	220301633W001	Statistika Pertanian (Agricultural Statistics)	3	4.8
2	220301632W002	Metodologi Penelitian (Research Methodology)	2	3.2
3	220301633W0023	Fisiologi Tumbuhan (Plant Physiology)	2	3.2
4	220301633W004	Mekanisasi Pertanian (Agricultural Mechanisation)	3	4.8
5	220301633W005	Kesuburan Tanah dan Pemupukan (Soil Fertility and Fertilizer)	3	4.8
6	220301632W006	Pengelolaan Terpadu Organisme Pengganggu Tumbuhan (Integrated Management of Plant Pests)	2	3.2
7	220301633W007	Prinsip Pertanian Perkotaan (Principles of Urban Farming)	2	3.2
8	220301632W008	Keanekaragaman Hayati Tumbuhan Tropika Lembab (Biodiversity of Humid Tropical Plants)	2	3.2
Jumlah (Total)			**20**	**32.0**

Semester IV

No	Kode (Code)	Mata Kuliah (Courses)	SKS/CU	ECTS
1	220301643W001	Agrohidrologi (Agohidrology)	3	4.8
2	220301643W002	Rancangan Penelitian (Experimental Design)	3	4.8
3	220301643W003	Bioteknologi Pertanian (Agricultural Biotecnology)	3	4.8
4	220301643W004	Pengelolaan Tanah Tropika Lembab (Soil Management of Humid Tropics)	3	4.8
5	220301643W005	Pestisida dan Teknik Aplikasi (Pesticides and Aplication techniques)	3	4.8
6	220301643W006	Pengelolaan Limbah Pertanian (Agricultural Waste Management)	3	4.8
7	220301642W007	Pertanian Masa Depan (Future Agriculture)	2	3.2
8	220301643W008	Agroklimatologi (Agroclimatology)	3	4.8
Jumlah (Total)			**23**	**36.8**

Semester V

No	Kode (Code)	Mata Kuliah (Courses)	SKS/CU	ECTS
1		Free Form (MBKM)*	2	3.2
2		Free Form (MBKM)*	2	3.2
3	220301653P003	Kultur Jaringan Tanaman (Tissue Culture)*	3	4.8
4	220301652P004	Tanaman Bioenergi (Bioenergy Plants)*	2	3.2
5	220301653P005	Budidaya tanaman Sawit dan Karet (Cultivation of Oil palm and Rubber plantations)*	3	4.8
6	220301653P006	Budidaya Tanaman Semusim (Cultivation of Annual Crops)*	3	4.8
7	220301653P007	Pemuliaan Tanaman (Plant Breeding)*	3	4.8
8	220301653P008	Ilmu Hortikultura (Horticulture Science)*	3	4.8
9	220301652P009	Budidaya Tanaman Kopi, Kakao, dan Lada (Cultivation of Coffee, Cocoa, and Pepper)*	2	3.2
10	220301652P010	Budidaya Tanaman Rempah dan Obat-obatan (Cultivation of Spice and Plant Medicine)*	2	3.2
11	220301653P011	Budidaya Tanaman Hias (Cultivation of Ornamental Plants)*	3	4.8
12	220301653P012	Pomologi (Pomology)*	3	4.8
13	220301653P013	Reklamasi Lahan (Land Reclamation)*	3	4.8
14	220301653P014	Analisis Tanah dan Tanaman (Analysis of Soil and Plants)*	3	4.8
14	220301653P015	Kimia Tanah (Soil Chemistry)*	3	4.8
15	220301653P016	Fisika Tanah (Soil Physics)*	3	4.8
16	220301653P017	Geologi dan Mineralogi (Geology and Mineralogy)*	3	4.8
17	220301653P018	Morfologi dan Klasifikasi Tanah (Morphology and Soil Classification)*	3	4.8
18	220301653P019	Geodesi dan Kartografi (Geodesy and Cartography)*	3	4.8
19	220301653P020	Geomorfologi dan Analisis Lansekap (Geomorphology and Lanscape Analysis)*	3	4.8
20	220301653P021	Penginderaan Jarak Jauh (Remote Sensing)*	3	4.8
21	220301653P022	Survei Tanah dan Evaluasi Lahan (Soil Survey and Land Evaluation)*	3	4.8
22	220301653P023	Biologi dan Kesehatan Tanah (Soil Biology and Health)*	3	4.8
23	220301653P024	Entomologi (Entomology)*	3	4.8
24	220301653P025	Mikologi dan Bakteriologi (Micology and Bacteriology)*	3	4.8
25	220301653P026	Nematologi (Nematology)*	3	4.8
26	220301652P027	Karantina Tumbuhan (Plant Quarantine)*	2	3.2
27	220301653P028	Epidemiologi Penyakit Tumbuhan (Epidemiology of Plant Diseases)*	3	4.8
28	220301653P029	Vertebrata Hama (Pest Vertebrates)*	3	4.8
29	220301653P030	Biologi dan Pengendalian Nematoda (Nematode Biology and Control)*	3	4.8
30	220301653P031	Fisiologi dan Biokimia Herbisida (physiology and biochemistry of herbicide)*	3	4.8
31	220301653P032	Ilmu Gulma (Weed Science)*	3	4.8
32	220301653P033	Ilmu Penyakit Tumbuhan (Plant Disease Science)*	3	4.8
33	220301653P034	Ilmu Hama Tumbuhan (Plant Pest Science)*	3	4.8
Jumlah SKS Mata Kuliah yang Ditawarkan (Number of Course Credits Offered)			**93**	**148.8**
Jumlah SKS Mata kuliah yang Diprogramkan (Number of Programmed Course Credits)			**23**	**36.8**

Keterangan : (*) mata kuliah pilihan
Description : (*) elective courses

Semester VI

No	Kode (Code)	Mata Kuliah (Course)	SKS/CU	ECTS
1		Model Studi Independen (Independent Study Model) (MBKM)*	3	4.8
2	220301663P002	Teknologi Benih (Seed Technology)*	3	4.8
3	220301663P003	Budidaya Tanaman Padi Tropika Lembab (Humid Tropical Rice Cultivation)*	3	4.8
4	220301663P004	Nutrisi Tanaman (Plant Nutrition)*	3	4.8
5	220301663P005	Agroforestri (Agroforestry)*	3	4.8
6	220301663P006	Penanganan Pasca Panen (Post Harvest Handling)*	3	4.8
7	220301663P007	Pengendalian Hayati (Biological Control)*	3	4.8
8	220301663P008	Dasar Penyuluhan dan Komunikasi Pertanian (Basic Agricultural Extension and Communicatio)*	3	4.8
9	220301663P009	Konservasi Tanah dan Air (Soil and Water Conservation)*	3	4.8
10	220301663P010	Perencanaan Pengembangan Wilayah dan Tata Guna Lahan (Regional Development Planning and Land Use) *	3	4.8
11	220301663P011	Pengelolaan Daerah Aliran Sungai (Watershed Management)*	3	4.8
12	220301663P012	Sistem Pertanian Kearifan Lokal (Local Wisdom Agriculture System)*	3	4.8
13	220301663P013	Polusi Tanah dan Air (Soil and Water Polution)*	3	4.8
14	220301663P014	Sistem Informasi Geografi (Geographic Information System)*	3	4.8
15	220301663P015	Virologi (Virology)*	3	4.8
16	220301663P016	Sistem Peramalan Hama (Pest Forecasting System)*	2	3.2
17	220301663P017	Ekologi Pestisida (Pesticide Ecology)*	3	4.8
18	220301663P018	Dasar Ekologi Serangga (Fundamentals of Insect Ecology)*	3	4.8
19	220301663P019	Teknologi Pestisida Nabati (Botanical Pesticide Technology)*	3	4.8
20	220301663P020	Identifikasi Jasad Pengganggu Tanaman (Identification of Insects Pest, Diseases, and Weeds)*	3	4.8
21	220301663P021	Klinik Tumbuhan (Plant Clinic)*	3	4.8
22	220301663P022	Hama dan Penyakit Pasca Panen (Pests and Post Harvest Diseases)*	3	4.8
Jumlah SKS Mata Kuliah yang Ditawarkan (Number of Course Credits Offered)			**67**	**107.2**
Jumlah SKS Mata kuliah yang Diprogramkan (Number of Programmed Course Credits)			**24**	**38,4**

Semester VII dan VIII

No	Kode (Code)	Mata Kuliah (Course)	Prasyarat (Precondition)	SKS/CU	ECTS
1	220301672W001	Praktek Kerja Lapangan (Field Practice)(MBKM)	Telah menyelesaikan ≥ 75% dari total SKS yang harus ditempuh, IPK ≥ 2,00 *Have completed ≥ 75% of the total credits that must be taken, GPA ≥ 2.0*	2	3.2
2	MU0000673W007	Kuliah Kerja Nyata (Community Service Program) (MBKM)	Telah menyelesaikan ≥ 110 SKS tanpa nilai E, IPK ≥ 2,00 untuk KKN reguler, atau telah selesai teori untuk KKN non reguler *Have completed ≥ 110 credits*	3	4.8

			without an E, GPA ≥ 2.00 for regular CSP, or have completed theory for non-regular CSP		
3	220301672W002	Seminar (Seminar)(MBKM)	Telah menyelesaikan ≥ 110 SKS tanpa nilai E, IPK ≥ 2,00 *Have completed ≥ 110 credits without an E, GPA ≥ 2.00*	2	3.2
4	220301676W003	Skripsi(Thesis) (MBKM)	Telah menyelesaikan ≥ 110 SKS tanpa nilai E, IPK ≥ 2,00 *Have completed ≥ 110 credits without an E, GPA ≥ 2.00*	6	9.6
Jumlah (Total)				**13**	**20.8**

Master Programme in Forestry

Curriculum Overview
Master of Forestry Program (Regular)

Matriculation*	Semester I	Semester II	Semester III	Semester IV
Advanced English for Forestry 2 SKS (3.2 ECTS)	**Philosophy of Science** [190401802W005] 2 SKS (3.2 ECTS)	**Compulsory Elective Module** 7 SKS (11.2 ECTS)	**Research Proposal Qualification** [190401801W050] 1 SKS (1.6 ECTS)	**Research Result Seminar** [190401801W052] 1 SKS (1.6 ECTS)
Conservation of Natural Resources and Ecosystem [190401802W001] 2 SKS (3.2 ECTS)	**Research Methodology and Scientific Publication** [190401802W006] 3 SKS (4.8 ECTS)			
Forest Management [190401802W002] 2 SKS (3.2 ECTS)	**Advanced Forest Product Processing** [190401802W007] 2 SKS (3.2 ECTS)			**Scientific Publication** [190401801W053] 3 SKS (4.8 ECTS)
Silviculture [190401802W003] 2 SKS (3.2 ECTS)	**Advanced in Tropical Forest Silviculture** [190401802W007] 3 SKS (4.8 ECTS)	**Specialization Elective Module** 4-6 SKS (6.4-9.6 ECTS)	**Research Proposal Seminar** [190401801W051] 1 SKS (1.6 ECTS)	
Forest Products Processing [190401802W004] 2 SKS (3.2 ECTS)	**Forest Resource Economics and Finance** [190401802W009] 3 SKS (4.8 ECTS)			**Thesis Exam** [190401801W054] 4 SKS (6.4 ECTS)
	Trends in Forest and Nature Conservation [190401802W010] 2 SKS (3.2 ECTS)			

*Matriculation is applied for non-forestry prospective student
Credit requirement for Master of Forestry Program (regular) : **46-48 SKS (73.6-76.8 ECTS)**

Curriculum Overview
Master of Forestry Program (By Research)

Matriculation*	Semester I	Semester II	Semester III	Semester IV
Advanced English for Forestry 2 SKS (3.2 ECTS)	**Research Proposal Qualification** [220401802W001] 2 SKS (3.2 ECTS)	**Research Proposal Seminar** [220401803W005] 2 SKS (3.2 ECTS)	**Research Result Seminar** [220401803W007] 3 SKS (4.8 ECTS)	**Scientific Publication** [220401804W009] [Indexed National Publication (Sinta 1-3)/Indexed International Journal] 3 SKS (4.8 ECTS)
Conservation of Natural Resources and Ecosystem [190401802W001] 2 SKS (3.2 ECTS)	**Thesis Topic I: Literature Review** [220401803W002] 3 SKS (4.8 ECTS)			
Forest Management [190401802W002] 2 SKS (3.2 ECTS)	**Thesis Topic II: Research Methodology** [220401803W003] 3 SKS (4.8 ECTS)	**Seminar of Research Result Progress** [220401803W006] 3 SKS (4.8 ECTS)	**National Seminar** [220401803W008] [join a national seminar event] 3 SKS (4.8 ECTS)	**Thesis Exam** [220401806W010] 6 SKS (9.6 ECTS)
Silviculture [190401802W003] 2 SKS (3.2 ECTS)	**Thesis Topic III: Thesis Research Proposal** [220401803W004] 3 SKS (4.8 ECTS)			
Forest Products Processing [190401802W004] 2 SKS (3.2 ECTS)	**Supporting Courses** [All subject courses for regular program in 1st Semester, compulsory and specialization elective courses] 4-6 SKS (6.4-9.6 ECTS)			

*Matriculation is applied for non-forestry prospective student
Credit requirement for Master of Forestry Program (by research) : **46-48 SKS (73.6-76.8 ECTS)**

Doctoral Programme in Forestry

Curriculum Overview

Doctoral of Forestry Program (Regular)

Matriculation*	Semester I	Semester II	Semester III-VI
Forest Management	Science Philosophy [190401902W001] 2 SKS (3.2 ECTS)	Specialization Elective Module 3-9 SKS (4.8-14.4 ECTS)	Colloquium II [190401901W005] 2 SKS (3.2 ECTS)
Forest Product Management	Research Methods and International Publications [190401902W002] 2 SKS (3.2 ECTS)	Qualifying Exam [190401901W003] 1 SKS (1.6 ECTS)	Indexed reputable international journal publications [190401903W008] 3 SKS (4.8 ECTS)
Silviculture	Specialization Elective Module 12 SKS (19.2 ECTS)	Colloquium I [190401901W004] 2 SKS (3.2 ECTS)	Closed Exam [190401903W006] 3 SKS (4.8 ECTS)
Conservation of Natural Resources and Ecosystems			Dissertation (Promotion) [190401912W046] 12 SKS (19.2 ECTS)

*Matriculation is applied for non-forestry prospective student
Credit requirement for Doctoral of Forestry Program (regular) : **42-48 SKS (67.2-76.8 ECTS)**

Doctoral of Forestry Program (By Research)

Matriculation*	Semester I	Semester II	Semester III-VI
Forest Management	Qualifying Exam [220401902W003] 2 SKS (3.2 ECTS)	Colloquium I [220401902W007] 2 SKS (3.2 ECTS)	Seminar on Advances in Research Results II [220401903W010] 3 SKS (4.8 ECTS)
Forest Product Management	Dissertation Topic I: Literature Review [220401903W004] 3 SKS (4.8 ECTS)	Seminar on Advances in Research Results I [220401903W008] 3 SKS (4.8 ECTS)	Proceedings Publication [220401904W011] 4 SKS (4.8 ECTS)
Silviculture	Dissertation Topic II: Research Methods [220401903W005] 3 SKS (4.8 ECTS)	International Seminar [220401903W009] [join a international seminar event] 3 SKS (4.8 ECTS)	Colloquium II [220401902W012] 2 SKS (3.2 ECTS)
Conservation of Natural Resources and Ecosystems	Dissertation Topic III: Thesis Research Proposal [220401903W006] 3 SKS (4.8 ECTS) Supporting Courses [Regular Elective Courses of Doctoral] 2-3 SKS (3.2-4.8 ECTS)		Indexed Reputable International Journal Publication [220401904W013] 4 SKS (6.4 ECTS) Closed Exam [220401904W014] 4 SKS (6.4 ECTS)
	Sit in at the regular Doctoral / Magister Program No Load of credits		Dissertation (Promotion) [220401904W015] 4 SKS (6.4 ECTS)

*Matriculation is applied for non-forestry prospective student
Credit requirement for Doctoral of Forestry Program (by research) : **42-44 SKS (67.2-70.4 ECTS)**