CURRICULUM

LEARNING OUTCOME-BASED EDUCATION
(*Outcome-Based Education*)

BACHELOR PROGRAM OF AGROECOTECHNOLOGY

FACULTY OF AGRICULTURE
MULAWARMAN UNIVERSITY
2023

A. Study Program Identity

1	College	Mulawarman University
2	Faculty	Agriculture
3	Bachelor program	Agroecotechnology
4	Study Program Code	54211
5	Grade	Bachelor
8	Address	Jalan Pasir Belengkong, Gunung Kelua Campus, Samarinda City, 75117
9	Phone number	0541-749352 / 0541-479314
10	Email address	agt@faperta.unmul.ac.id
11	Website	http://agt.faperta.unmul.ac.id/
12	Year and Permit/Decree of Establishment and last Extension Decree.	1. Decree Number 163/DIKTI/Kep/2007 Concerning the Arrangement and Codification of Departments/Study Programs in Higher Education, Dated 29 November 2007
13	Year and Number of National Accreditation	3628/SK/BAN-PT/Ak/S/IX/2023
14	Year and Decree of International Accreditation/Certification	-

B. Identity of Head of Study Program

1	Name	Dr. Ir. HA Syamad Ramayana, MP
2	Position	Study Program Coordinator
4	Assignment Start Date	August 1, 2021
5	Assignment Completion Date	August 1, 2025
6	Mobile Number/WhatsApp	081350261143

C. Curriculum Evaluation and *Tracer Study*

Curriculum Evaluation

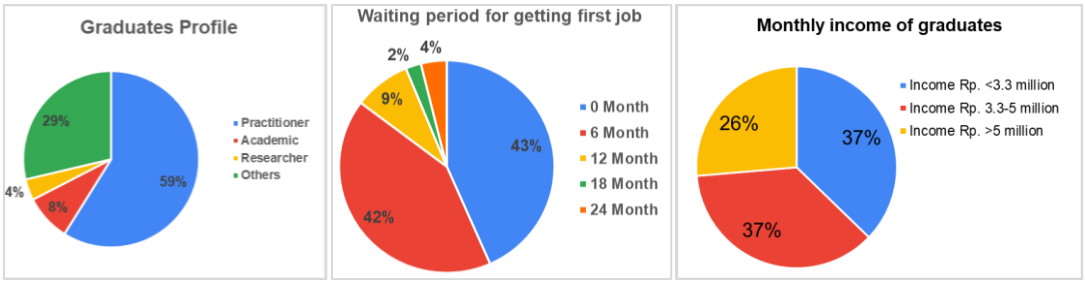
Curriculum evaluation is carried out every 4 years, and the curriculum currently used is the result of the 2022 evaluation. The theory is completed in 6 semesters and the final assignment is carried out in semesters 7 and 8. The evaluation is carried out by the Curriculum Revision Team of the Bachelor Program of Agroecotechnology based on the Dean's Decree Number 2254/UN17.3/KR.00.01/2022 dated October 7, 2022 concerning the Curriculum Revision Team of the Bachelor Program of Agroecotechnology in 2022, Faculty of Agriculture, Mulawarman University.

The process of implementing the curriculum revision is guided by the Main Scientific Pattern of Mulawarman University, Vision and Mission of Mulawarman University, Vision and Mission of the Faculty of Agriculture, and the Vision and Mission of the Bachelor Program of Agroecotechnology which refers to the Unmul Curriculum Development Guidelines prepared by LP3M. Furthermore, the Bachelor Program of Agroecotechnology held a Curriculum Workshop based on the Rector's Decree Number: 3549/UN17/HK.02.03/2022 Concerning the Curriculum Workshop Committee of the Faculty of Agriculture Study Program, Mulawarman University, November 4, 2022, which involved speakers from the Indonesian Agroecotechnology Association (PAGI) as well as external and internal stakeholders, alumni and users.

Bachelor Program of Agroecotechnology curriculum evaluation have been approved by the Chancellor with the Decree of the Chancellor of Mulawarman University Number 749/UN17/HK.02.03/2023 Concerning the 2022 Curriculum for the Undergraduate Program (S1) of the Faculty of Agriculture, Mulawarman University, dated February 20, 2023. The initial implementation of the 2022 curriculum was carried out during the odd semester lecture activities of 2022/2023.

Implementation of Tracer Study

Bachelor Program of Agroecotechnology conducts *tracer study* tracking referring to the tracking carried out by the Technical Implementation Unit for Career Development and Entrepreneurship (*UPT Perkasa*) https://perkasa.unmul.ac.id/perkasa . Covering aspects of coordinated implementation at the university level, carried out regularly every year and documented, filling out the questionnaire based on the Ministry of Research, Technology and Higher Education, targeting all graduates of Mulawarman University, especially the Bachelor Program of Agroecotechnology for graduates of TS-4 to TS-2, and the results of the tracer study tracking activities are then socialized and used as a reference for curriculum development and learning in the Bachelor Program of Agroecotechnology, Faculty of Agriculture, Mulawarman University.



Figur 1. Profile of graduates of Bachelor program of Agroecotechnology class of 2015-2020

The results of the graduate tracer study showed that the graduates' profile is 59% as practitioner, 8 % as academic, and 4 % as researcher, and 29 % having a job that does not align with program graduate profile.

Moreover, waiting period for graduates to get their first job is as shown in the figure 2. Waiting period for graduates to get their first job, 42.2% is 0 month, 42.2 % below 6 months, 8.1% is 6-12 month, 3% is 12-18 month, and 4.4% 18-24 month after graduation.

The amount of alumni income per month in 2024, as much as 26% above 5 million rupiah, 37% earn 3.3-5 million rupiah, and another 37% earn below 3.3 million. In 2024, the regional minimum wage for East Kalimantan province is set at 3.3 million rupiah.

D. Foundations of Curriculum Design and Development

1. Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers (State Gazette of the Republic of Indonesia 2005 Number 157, Supplement to the State Gazette of the Republic of Indonesia Number 4586);
2. Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education (State Gazette of the Republic of Indonesia 2012 Number 158, Supplement to the State Gazette of the Republic of Indonesia Number 5336);
3. Presidential Regulation of the Republic of Indonesia Number 8 of 2012, concerning the Indonesian National Qualifications Framework (KKNI);
4. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 73 of 2013, concerning the Implementation of KKNI in the Field of Higher Education;
5. Regulation of the Minister of Research, Technology, and Higher Education of the Republic of Indonesia Number 62 of 2016 concerning the Higher Education Quality Assurance System;
6. Regulation of the Minister of Research, Technology and Higher Education Number 59 of 2018, concerning Diplomas, Competency Certificates, Professional Certificates, Degrees and Procedures for Writing Degrees in Higher Education;
7. Decree of the Minister of Research, Technology, and Higher Education No. 123 of 2019 concerning Internships and Recognition of Industrial Internship Semester Credit Units for Undergraduate and Applied Undergraduate Programs.
8. Regulation of the Minister of Education and Culture No. 3 of 2020, concerning National Standards for Higher Education;
9. Regulation of the Minister of Education and Culture No. 5 of 2020, concerning Accreditation of Study Programs and Higher Education Institutions ;
10. Regulation of the Minister of Education and Culture No. 7 of 2020 concerning the Establishment, Amendment, Dissolution of State Universities, and the Establishment, Amendment, Revocation of Permits of Private Universities;
11. Regulation of the Minister of Education and Culture No. 22 of 2020, concerning the Strategic Plan of the Ministry of Education and Culture.

E. Vision, Mission, Goals

University Vision Mulawarman : An international standard university that is able to play a role in national development through education, research, and community service that relies on natural resources (SDA), especially tropical humid forests (tropical rain forest) and its environment."

Mulawarman University Mission : To produce quality, personality and professional human resources through the implementation of higher education of international standard; To produce quality and useful research by prioritizing the principles of environmental sustainability; To organize community service activities and produce meaningful and useful works of science, technology, art, and sports in order to realize accountable and independent university management in accordance with national and international standards.

Vision of the Faculty of Agriculture, Mulawarman University : To become an excellent higher education institution in the field of humid tropical agriculture.

Mission of the Faculty of Agriculture, Mulawarman University : Developing learning materials that refer to PIP UNMUL and are adjusted to the competencies of each study program at FAPERTA; Encouraging the development of research groups that focus on various aspects of wet tropical agriculture that are oriented towards the discovery of appropriate technology and downstreaming of intellectual property rights; Improving academic and *soft quality student skills* to become graduates who are useful and competitive in the field of wet tropical agriculture in the era of the global economic community; Strengthening institutions and cooperation in achieving superior and accountable institutions managed by professional human resources in the field of wet tropical agriculture .

Objective Faculty of Agriculture, Mulawarman University : Learning materials and methods are developed referring to PIP UNMUL with adjustments to the competencies of each study program; Increasing the number of research groups that focus on aspects of integrated and sustainable tropical wet agriculture management that are oriented towards the discovery of appropriate technology and downstreaming of intellectual property rights; Improving academic and *soft quality student skills* to become graduates who are useful and competitive in the field of wet tropical agriculture in the era of the global economic community; Strong, superior, and accountable institutions managed by professional human resources in the field of wet tropical agriculture.

Strategy Faculty of Agriculture, Mulawarman University : Improving the achievement of the vision, mission, and institutional goals through appropriate program design and evaluation of intermediate targets (*milestones*) ; Strengthening the organization through effective leadership, transparent, aspirational , and collegial faculty management, and constructive quality assurance; Improving academic and *soft quality. students' skills* to become graduates who are useful and competitive in the field of humid tropical agriculture in the era of the ASEAN economic community; Developing human resources for lecturers, education personnel, and professionals to support the implementation of the three pillars of higher education in the field of humid tropical agriculture; Aligning the curriculum in accordance with the demands of the times in an effort to achieve a competency-based curriculum with an orientation towards increasing literacy in humid tropical agriculture and its derivatives; Increasing the effectiveness of financing to complete the facilities and infrastructure of the three pillars of higher education and increasing income from education fees and cooperation ; Increasing the output of research and community service in the field of humid tropical agriculture in terms of quantity and quality, especially those oriented towards the application of appropriate technology and commercialization of intellectual property rights.

Vision of the Bachelor Program of Agroecotechnology: As a center for education and development of science and technology (IPTEK) that excels in the field of sustainable agriculture with the characteristics of humid tropics.

Bachelor Program of Agroecotechnology: Organizing higher education in the field of sustainable agriculture with the characteristics of wet tropics; Developing science and

technology in the field of sustainable agriculture through relevant and quality research; Carrying out community service and service in the field of agriculture based on the utilization of research results and the application of appropriate technology.

Bachelor Program of Agroecotechnology: To produce superior graduates (pious , competitive, professional and independent); To carry out and develop research and disseminate science and technology in the field of sustainable agriculture with the characteristics of wet tropics; To establish partnerships with the community, government agencies/institutions and the private sector that are relevant to the field of wet tropical agriculture.

Strategy Bachelor Program of Agroecotechnology : Program Agroecotechnology studies design activities in stages, in a directed manner, with clear and measurable indicators in accordance with *milestones* to realize its vision, mission and objectives, namely to become (a) *a center* for *of excellence* in the region (2018-2023), (b) Achieving competitiveness (Excellence) at the national level (2023-2027), (c) Achieving competitiveness (Excellence) at the ASEAN level (2027-2031), (d) Achieving international competitiveness (Excellence) typical of the tropics (*equator) line*) (2031-2035).

F. Graduate Profile / *Program Learning Outcomes* (PL/PLO)

a. Graduate Profile / *Program Learning Outcomes* (PLO)

Bachelor Program of Agroecotechnology , Faculty of Agriculture, Mulawarman University is to become **Practitioners, Academics, Researchers in the field of** Humid Tropical Agriculture .

b. Graduate Profile Description / *Program Learning Outcomes* (PLO)

PLO	Description
PLO-1 Practioner	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 laboratory assistants or prospective Educational Laboratory Assistants (PLP), 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.

c. Graduate Profile Indicator / *Program Learning Outcomes* (PLO)

PLO	Indicator
PLO-1 Practitioner	1) Becoming a professional farmer who masters and can implement the concept of *good agriculture practice* based on tropical moist .
	2) To become an industrial practitioner in the agricultural sector who understands the concept and application of humid tropical agricultural cultivation .
	3) Becoming an entrepreneur who is able to create jobs in the agricultural sector.

	4) Become a reliable consultant in the field of agricultural cultivation .
	5) To become an agricultural extension worker who masters the technical aspects of humid tropical agricultural cultivation .
PLO-2 Academics	1) Become a laboratory assistant in an agricultural or life sciences laboratory .
	2) Becoming an Educational Laboratory Technician (PLP) in a laboratory in the field of agricultural sciences.
	3) Become a vocational school teacher in the field of agronomy, soil science, or plant protection.
	4) professional and integrated ASN in a government institution in the agricultural sector.
	5) To become a master of agriculture student in an internationally accredited master's study program, excellent and very good.
PLO-3 Researcher	1) reliable researcher in government and private research institutions who is able to think analytically in identifying and formulating problems and seeking solutions based on agricultural science, and is able to disseminate the results of his findings and ideas . 2) Becoming a researcher who is able to produce quality research outputs.

G. Graduate Learning Outcomes (CPL) / *Intended Learning Outcome s* (ILO)

a. Achievements Learning Graduate (CPL)

CPL Code	Description
CPL1	Be devoted to God Almighty, uphold the values of humanity, religion, morals, academic norms and ethics, and be responsible for the knowledge and application of technology that one possesses.
CPL2	Mastering Science and Technology in the Field of Sustainable Humid Tropical Agriculture
CPL3	Mastering research methodology so as to be able to adapt to situations faced in solving problems in the field of humid tropical agriculture procedurally and with scientific ethics.
CPL4	Able to apply logical, critical, systematic and innovative thinking in the context of the development and implementation of science and technology in solving problems of humid tropical agriculture .
CPL5	Able to demonstrate independent, quality and measurable performance and be responsible for achieving group work results and supervising and evaluating work completion.
CPL6	Able to maintain and develop working networks with mentors, colleagues, partners inside and outside the institution.
CPL7	Able to plan, implement, evaluate and innovate in developing production systems and able to provide solutions to problems in the field of sustainable agriculture.
CPL8	*Internet of* technology *Thin g s* (IOT) , and mastery of foreign languages in the agricultural sector.

b. Matrix of Relationship between Learning Achievements and Graduate Profiles

CPL	Description	Profile Graduate of		
		PLO 1	PLO 2	PLO 3
CPL1	Be devoted to God Almighty, uphold the values of humanity, religion, morals, academic norms and ethics, and be responsible for the knowledge and application of technology that one possesses.	✓	✓	✓
CPL2	Mastering Science and Technology in the Field of Sustainable Humid Tropical Agriculture	✓	✓	✓
CPL3	Mastering research methodology so as to be able to adapt to situations faced in solving problems in the field of humid tropical agriculture procedurally and with scientific ethics.	✓	✓	✓
CPL4	Able to apply logical, critical, systematic and innovative thinking in the context of the development and implementation of science and technology in solving problems of humid tropical agriculture .	✓	✓	✓
CPL5	Able to demonstrate independent, quality and measurable performance and be responsible for achieving group work results and supervising and evaluating work completion.	✓	✓	✓
CPL6	Able to maintain and develop working networks with mentors, colleagues, partners inside and outside the institution.	✓	✓	✓
CPL7	Able to plan, implement, evaluate and innovate in developing production systems and able to provide solutions to problems in the field of sustainable agriculture.	✓	✓	✓
CPL8	*Internet of* technology *Thin g s* (IOT) , and mastery of foreign languages in the agricultural sector.	✓	✓	✓

H. Study Materials

Field of Study Code (FS)	Description
FS1: Personality development	It is a group of study materials and lessons to develop students who have faith and devotion to God Almighty, have noble character, a stable personality, and are independent and have a sense of social and national responsibility.
FS 2: Basic knowledge of agriculture	It is a group of study and lesson materials to provide basic knowledge of agricultural science.
FS3: Agricultural cultivation	It is a group of core study materials related to agricultural cultivation science.
FS4: Agronomy	It is a group of study materials that characterizes the science of agronomy.
FS5: Soil Science	It is a group of study materials that characterizes the scientific nature of soil science.
FS6: Crop Protection	It is a group of study materials that characterize the science of plant protection.

I. Formation of Courses and Determination of Credit Weight

Field of Study	Course Name	Credit	ECTS
FS1: Personality development	Religious education	3	4.8
	Pancasila	2	3.2
	Indonesian Language	2	3.2
	English Agriculture	3	4.8
	Social and Cultural Sciences	2	3.2
	Citizenship	2	3.2
	Entrepreneurship	2	3.2
	Basics of Agricultural Extension and Communication	3	4.8
	Community Service Program	3	4.8
FS2: Basic knowledge of agriculture	Agricultural Statistics	3	4.8
	Research methodology	2	3.2
	Research Design	3	4.8
	Basic Microbiology	3	4.8
	Information Management System	2	3.2
	Agricultural Biology	2	3.2
	Fundamental of Genetics	2	3.2
	Biodiversity of Humid Tropical Plants	2	3.2
	Seminar	2	3.2
	Thesis	6	
FS3: Agricultural cultivation	Introduction to Humid Tropical Agriculture	2	3.2
	Agroecology	2	3.2
	Agrohydrology	3	
	Agricultural Biotechnology	2	3.2
	Agricultural Waste Management	3	
	Future Farming	2	3.2
	Agroclimatology	3	4.8
	Local Wisdom Agricultural System	3	4.8
	Field Work Practice	2	3.2
FS4: Agronomy	Agronomy	3	4.8
	Botany	3	4.8
	Plant Physiology	3	4.8
	Agricultural Mechanization	3	4.8
	Principles of Urban Agriculture	3	4.8
	Humid Tropical Soil Management	3	4.8
	Plant Tissue Culture	3	4.8
	Bioenergy Plants	2	3.2
	Cultivation of oil palm and rubber plants	3	4.8
	Cultivation of Annual Plants	3	4.8
	Plant Breeding	3	4.8
	Horticultural Science	3	4.8
	Cultivation of Coffee, Cocoa and Pepper Plants	2	3.2
	Cultivation of Spices and Medicinal Plants	2	3.2
	Ornamental Plant Cultivation	3	4.8
	Pomology	3	4.8
	Seed Technology	3	4.8
	Moist Tropical Rice Plants	3	4.8
	Plant Nutrition	3	4.8
	Agroforestry	3	4.8
	Post-Harvest Handling	3	4.8
FS5: Soil	Soil Science	3	4.8
	Soil Fertility and Fertilization	3	4.8

Field of Study	Course Name	Credit	ECTS
Science	Land Reclamation	3	4.8
	Soil and Plant Analysis	3	4.8
	Soil Chemistry	3	4.8
	Soil Physics	3	4.8
	Geology and Mineralogy	3	4.8
	Soil Morphology and Classification	3	4.8
	Geodesy and Cartography	3	4.8
	Geomorphology and Landscape Analysis	3	4.8
	Remote Sensing	3	4.8
	Land Survey and Land Evaluation	3	4.8
	Soil Biology and Health	3	4.8
	Soil and Water Conservation	3	4.8
	Regional Development Planning and Land Use	3	4.8
	River Basin Management	3	4.8
	Land and Water Pollution	3	4.8
	Geographic Information System	3	4.8
BK6: Crop Protection	Plant Protection	3	4.8
	Integrated Management of Plant Pests	2	3.2
	Pesticides and Application Techniques	3	4.8
	Entomology	3	4.8
	Mycology and Bacteriology	3	4.8
	Nematology	3	4.8
	Plant Quarantine	2	3.2
	Epidemiology of Plant Diseases	3	4.8
	Vertebrate Pests	3	4.8
	Biology and Control of Nematodes	3	4.8
	Physiology and Biochemistry of Herbicides	3	4.8
	Weed Science	3	4.8
	Plant Pathology	3	4.8
	Plant Pest Science	3	4.8
	Biological Control	3	4.8
	Virology	3	4.8
	Pest Forecasting System	2	3.2
	Pesticide Ecology	3	4.8
	Basics of Insect Ecology	3	4.8
	Botanical Pesticide Technology	3	4.8
	Identification of Plant Pests	3	4.8
	Plant Clinic	3	4.8
	Post-Harvest Pests and Diseases	3	4.8

Matrix Distribution of Courses

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**

J. Matrix and Map (Curriculum Structure)

No	**Course Code** ***Course Code***	**Subject** ***Courses***	**Learning Outcomes (CPL) ***							
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1.	MU0000603W001	Religious education *Religion Education*	3	2	0	0	0	0	0	0
2.	MU0000602W002	Pancasila *Pancasila*	3	0	0	0	0	0	0	0
3.	MU0000602W004	Indonesian *English*	2	0	1	0	0	2	0	0
4.	MU0000602W006	Basic Social and Cultural Sciences *Social Science and Basic Culture*	3	0	3	1	0	2	0	0
5.	220301612W005	Introduction to Humid Tropical Agriculture *Introduction of Humid Tropical Agriculture Science*	1	3	2	0	0	0	0	0
6.	220301613W006	Basic Microbiology *Fundamentals of Microbiology*	1	3	0	0	0	0	0	0
7.	220301612W007	Agroecology *Agroecology*	1	3	0	2	0	0	0	0
8.	220301612W008	Information Management System *Information Management System*	2	3	0	0	0	0	0	3
9.	220301612W009	Agricultural Biology *Agriculture Biology*	1	2	3	2	0	0	0	0
10.	MU0000602W003	Citizenship *Citizenship*	3	0	0	0	1	2	0	0
11.	220301622W002	Entrepreneurship *Entrepreneurship*	1	0	0	0	3	2	3	2
12.	220301623W003	English Agriculture *Agricultural English*	1	0	0	0	0	2	0	3
13.	220301623W004	Agronomy *Agronomy*	1	0	3	2	0	0	2	1
14.	220301623W005	Soil Science *Soil Science*	1	0	3	2	0	0	2	1
15.	220301622W006	Basic Genetics *Fundamental of Genetics*	1	3	0	2	0	0	3	0
16.	220301623W007	Plant Protection *Plant Protection*	1	0	3	2	0	0	2	1
17.	220301623W008	Botany *Botany*	1	3	0	2	0	0	0	1
18.	220301633W001	Agricultural Statistics *Agricultural Statistics*	1	0	0	3	0	0	0	3
19.	220301632W002	Research methodology	1	0	0	3	0	0	3	2

No	Course Code *Course Code*	Subject *Courses*	Learning Outcomes (CPL) *							
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
		Research Methodology								
20.	220301633W0023	Plant Physiology *Plant Physiology*	1	0	0	2	0	0	0	1
21.	220301633W004	Agricultural Mechanization *Agricultural Mechanization*	3	0	0	2	0	0	3	0
22.	220301633W005	Soil Fertility and Fertilization *Soil Fertility and Fertilizer*	3	0	0	3	0	0	3	1
23.	220301632W006	Integrated Management of Plant Pest Organisms *Integrated Pests Management*	1	2	3	2	0	0	3	0
24.	220301633W007	Principles of Urban Agriculture *Principles of Urban Farming*	1	2	0	3	0	0	2	0
25.	220301632W008	Biodiversity of Humid Tropical Plants *Biodiversity of Humid Tropical Plants*	1	3	0	2	0	1	0	0
26.	220301643W001	Agrohydrology *gohydrology*	1	2	3	2	0	0	3	2
27.	220301643W002	Research Design *Experimental Design*	1	0	0	2	0	0	3	0
28.	220301643W003	Agricultural Biotechnology *Agricultural Biotechnology*	1	1	0	2	0	0	3	0
29.	220301643W004	Humid Tropical Soil Management *Soil Management of Humid Tropics*	1	2	3	3	0	0	2	0
30.	220301643W005	Pesticides and Application Techniques *Pesticides and Application techniques*	1	0	0	3	0	0	2	1
31.	220301643W006	Agricultural Waste Management *Agricultural Waste Management*	1	0	2	3	0	0	1	0
32.	220301642W007	Future Farming *Future Agriculture*	1	0	3	3	0	0	1	1
33.	220301643W008	Agroclimatology *Agroclimatology*	1	0	0	3	0	0	2	2
34.	220301653P003	Plant Tissue Culture * *Tissue Culture **	1	0	0	3	0	1	3	1
35.	220301652P004	Bioenergy Plants * *Bioenergy Plants **	1	2	2	2	0	1	3	0
36.	220301653P005	Cultivation of Oil Palm and Rubber Plants* *Cultivation of Oil palm and Rubber plantations **	1	1	0	0	2	0	3	0
37.	220301653P006	Cultivation of Annual Plants* *Cultivation of Annual Crop **	1	1	0	0	2	0	3	0
38.	220301653P007	Plant Breeding* *Plant Breeding **	1	1	0	2	0	0	3	0
39.	220301653P008	Horticultural Science* *Horticulture Science **	1	1	0	2	0	0	0	3
40.	220301652P009	Cultivation of Coffee, Cocoa and Pepper Plants *Cultivation of Coffee, Cocoa , and Pepper **	1	1	0	0	2	0	3	0
41.	220301652P010	Cultivation of Spices and Medicinal Plants *Cultivation of Spice and Plant*	1	1	0	0	2	0	3	0

No	Course Code *Course Code*	Subject *Courses*	Learning Outcomes (CPL) *							
			1	2	3	4	5	6	7	8
		Medicine *								
42.	220301653P011	Ornamental Plant Cultivation *Cultivation of Ornamental Plants* *	1	1	0	0	2	0	3	0
43.	220301653P012	Pomology *Pomology* *	1	1	0	2	0	0	0	3
44.	220301653P013	Land Reclamation* *Land Reclamation* *	1	0	2	3	0	0	2	0
45.	220301653P014	Soil and Plant Analysis* *Analysis of Soil and Plants* *	1	2	0	2	0	0	3	0
46.	220301653P015	Soil Chemistry* *Soil Chemistry* *	1	2	0	2	0	0	2	0
47.	220301653P016	Soil Physics* *Soil Physics* *	1	2	0	2	0	0	2	0
48.	220301653P017	Geology and Mineralogy* *Geology and Mineralogy* *	1	0	1	2	0	0	2	0
49.	220301653P018	Soil Morphology and Classification* *Morphology and Soil Classification* *	1	1	0	2	0	0	2	0
50.	220301653P019	Geodesy and Cartography* *Geodesy and Cartography* *	1	1	0	2	0	0	2	0
51.	220301653P020	Geomorphology and Landscape Analysis * *Geomorphology and Landscape Analysis* *	1	0	2	2	0	0	0	2
52.	220301653P021	Remote Sensing* *Remote Sensing**	1	3	0	2	0	0	0	3
53.	220301653P022	Land Survey and Land Evaluation* *Soil Survey and Land Evaluation* *	1	3	0	2	0	0	0	3
54.	220301653P023	Soil Biology and Health* *Soil Biology and Health* *	1	0	2	2	0	0	2	0
55.	220301653P024	Entomology *Entomology* *	1	1	0	2	0	0	0	3
56.	220301653P025	Mycology and Bacteriology *Mycology and Bacteriology* *	1	1	0	2	0	0	0	3
57.	220301653P026	Nematology (Nematology)*	1	1	0	2	0	0	0	3
58.	220301652P027	Plant Quarantine* *Plant Quarantine* *	1	0	0	3	0	0	0	0
59.	220301653P028	Epidemiology of Plant Diseases* *Epidemiology of Plant Diseases* *	1	0	1	3	0	0	2	0
60.	220301653P029	Vertebrate Pests* *Pest Vertebrates* *	1	1	0	2	0	0	0	3
61.	220301653P030	Biology and Control of Nematodes* *Nematodes Biology and Control* *	1	1	0	2	0	0	3	0
62.	220301653P031	Physiology and Biochemistry of Herbicides* *Physiology and Biochemistry of Herbicide* *	1	1	0	2	0	0	3	0
63.	220301653P032	Weed Science* *Weed Science* *	1	1	0	2	0	0	0	3
64.	220301653P033	Plant Pathology* *Plant Disease Science* *	1	1	0	2	0	0	0	3
65.	220301653P034	Plant Pest Science* *Plant Pest Science* *	1	1	0	2	0	0	0	3
66.	220301663P002	Seed Technology*	1	2	0	1	0	0	3	0

No	Course Code *Course Code*	Subject *Courses*	Learning Outcomes (CPL) *							
			1	2	3	4	5	6	7	8
		*Seed Technology**								
67.	220301663P003	Cultivation of Moist Tropical Rice Plants* *Humid Tropical Rice Cultivation**	1	1	0	2	0	0	3	0
68.	220301663P004	Plant Nutrition* *Plant Nutrition *	1	2	0	3	0	0	3	0
69.	220301663P005	Agroforestry *Agroforestry *	1	2	0	3	0	0	2	0
70.	220301663P006	Post-Harvest Handling* *Post Harvest Handling**	1	2	0	3	0	0	3	0
71.	220301663P007	Biological Control* *Biological Control *	1	1	0	2	0	0	3	0
72.	220301663P008	Basics of Agricultural Extension and Communication* *Basic Agriculture Extension and Communication *	1	3	0	2	0	3	0	0
73.	220301663P009	Soil and Water Conservation* *Soil and Water Conservation *	1	0	2	3	0	0	3	0
74.	220301663P010	Regional Development Planning and Land Use *Regional Development Planning and Land Use *	1	2	0	0	0	0	2	3
75.	220301663P011	River Basin Management* *Watershed Management *	1	0	2	3	0	0	3	0
76.	220301663P012	Local Wisdom Farming System* *Local Wisdom Agriculture System *	1	0	2	2	0	0	1	0
77.	220301663P013	Land and Water Pollution* *Soil and Water Pollution *	1	3	0	2	0	0	0	3
78.	220301663P014	Geographic Information System* *Geographic Information System**	1	2	0	0	0	0	2	3
79.	220301663P015	Virology *Virology *	1	1	0	2	0	0	0	3
80.	220301663P016	Pest Forecasting System *Pest Forecasting System**	1	0	1	3	0	0	2	0
81.	220301663P017	Pesticide Ecology* *Ecology of Pesticides *	1	3	0	2	0	0	0	0
82.	220301663P018	Basics of Insect Ecology* *Fundamentals of Insect Ecology *	1	3	0	2	0	0	0	0
83.	220301663P019	Botanical Pesticide Technology* *Botanical Pesticide Technology**	1	3	0	2	0	0	0	0
84.	220301663P020	Identification of Plant Pests* *Identification of Insects Pests , Diseases , and Weeds *	1	2	0	2	0	0	0	0
85.	220301663P021	Plant Clinic* *Plant Clinic *	1	1	0	2	0	0	3	0
86.	220301663P022	Post-Harvest Pests and Diseases* *Pests and Postharvest Diseases *	1	2	0	2	0	0	0	0
87.	220301672W001	Field practice *Field Practice s*	2	0	0	0	3	3	1	0
88.	MU0000673W007	Community Service Program *Community Service Program*	1	0	0	0	3	3	2	0
89.	220301672W002	Seminar *Seminar*	3	0	0	3	2	0	3	1
90.	220301676W003	Thesis *Thesis*	1	0	3	1	2	1	3	1

Information:

*Contribution weight of courses to Graduate Learning Outcomes:

1	: low contribution
2	: Contribution is ongoing
3	: High contribution

K. Matrix that accommodates the MBKM Program

SMT	Number of credits	LEARNING PROGRAM IN THE STUDY PROGRAM									MB-KM PROGRAM *)		
											In PT	Other PT	Non-PT
1	2	3									4	5	6
VII and VIII	13	MK Code 220301672P001	MK Code MU0000603W007	MK Code 220301672P003	MK Code 220301676P004								**Example** : MK Code (20 credits)
		0/2 Credits	0/3 Credits	0/2 Credits	0/6 Credits								
VI	20	All courses offered in semester 6 can be converted to the MBKM program through study program approval.										Example : MK Code (20 credits)	
V	20	All courses offered in semester 6 can be converted to the MBKM program through study program approval.									**Example** : MK Code (20 credits)		
IV	20	Code MK 220301643W001	MK Code 220301643W002	MK Code 220301643W003	MK Code 220301643W004	MK Code 220301643W005	MK Code 220301643W006	Code MK 220301643W007	Code MK 220301643W008		NOT ALLOWED TO FOLLOW THE MBKM PROGRAM		
		2/1 Credits	2/1 Credits	2/1 Credits	2/1 Credits	2/1 Credits	2/1 Credits	2/0 Credits	2/1 Credits				
III	20	MK Code 220301633W001	MK Code 220301632W002	MK Code 220301633W003	MK Code 220301633W004	MK Code 220301633W005	MK Code 220301632W006	Code MK 22030163 W007	Code MK 22030162 W008				
		2/1 Credits	2/0 Credits	2/1 Credits	2/1 Credits	2/1 Credits	2/0 Credits	2/1 Credits	2/0 Credits				
II	21	MK Code: MU0000602 W 003	MK Code 220301622W002	MK Code 220301623W003	MK Code 220301623W004	MK Code 220301623W005	MK Code 220301622W006	MK Code 220301623W007	MK Code 220301623W008				
		2/0 Credits	2/0 Credits	2/1 Credits	2/1 Credits	2/1 Credits	2/0 Credits	2/1 Credits	2/1 Credits				
I	20	MK Code MU0000603W001	MK Code MU0000602W002	MK Code MU0000602W004	MK Code MU0000602W006	MK Code 220301612W005	MK Code 220301613W006	MK Code 220301612W007	MK Code 220301612W008	MK Code 220301612W009			
		2/1 Credits	2/0 Credits	2/0 Credits	2/0 Credits	2/0 Credits	2/1 Credits	2/0 Credits	2/0 Credits	2/0 Credits			

Information:
- According to Permendikti No. 53, Semester 1 and 2 maximum 20 credits
*) Only for Undergraduate Program

L. Implementation Plan for Maximum 3 Semesters of Learning Rights Outside the Study Program

The implementation of the Independent Learning Independent Campus (MBKM) policy in the Bachelor Program of Agroecotechnology, Faculty of Agriculture, Mulawarman University 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 types of MBKM that can be carried out include: Independent Student Exchange Program (PMM), Certified Independent Internship and Study (MSIB), Independent Entrepreneurship Program, Student Entrepreneurship Development Program (P2MW), Teaching Campus, Indonesian International Student Mobility Awards (IISMA), and other activities that can be converted or recognized by the study program.

M. Curriculum Management and Implementation Mechanism

Mulawarman University and are stated in the 2019 Internal Quality Assurance System (SPMI), Academic Atmosphere Standards and Curriculum Development Standards in SPMI 2020. Meanwhile, the Dean at the Faculty level determines the derivatives of Educational Standards (quality standards, quality manuals and POB) made by GJM in coordination with the Education Development and Quality Assurance Institute (LP3M). Implementation and evaluation learning standards done by GJM .

N. Semester Learning Plan (RPS)

Lecturers in charge of courses are required to create a Semester Learning Plan (RPS) document based on Permenristekdikti No. 44 of 2015 concerning National Higher Education Standards (SN Dikti) Article 12 paragraphs 1, 2, and 3, and Article 13 paragraph 2. The RPS at least contains the name of the study program, name and code of the course, semester, credits , name of the lecturer in charge; graduate learning outcomes charged to the course; final abilities

planned at each stage of learning to meet graduate learning outcomes; study materials related to the abilities to be achieved; learning methods; time provided to achieve abilities at each stage of learning; student learning experiences manifested in descriptions of tasks that must be completed by students during one semester; criteria, indicators, and assessment weights; and a list of references used. The RPS document that has been prepared by the course lecturer is then approved by the Study Program.

O. Study Program Curriculum Evaluation

Evaluation of the implementation of educational standards is carried out by the Educational Development and Quality Assurance Institute (LP3M) of Mulawarman University . Evaluations are carried out periodically every year in July through the Internal Quality Audit (AMI). The results of the AMI report are then discussed at the Faculty level through the Management Review Meeting (RTM) in September. The Bachelor Program of Agroecotechnology follows up on the findings of the AMI and then takes action repair according to the directions given.