

Academic Handbook

FOR MASTER PROGRAM
OF ANIMAL SCIENCE

2023/2024



FAKULTAS PETERNAKAN
UNIVERSITAS BRAWIJAYA
FACULTY OF ANIMAL SCIENCE
UNIVERSITAS BRAWIJAYA

FAKULTAS PETERNAKAN
UNIVERSITAS BRAWIJAYA
Program
- SARJANA
- MAGISTER
- DOKTOR



PERATURAN REKTOR UNIVERSITAS BRAWIJAYA

NOMOR 55 TAHUN 2023

TENTANG

PENYELENGGARAAN PENDIDIKAN UNIVERSITAS BRAWIJAYA
TAHUN AKADEMIK 2023/2024

DENGAN RAHMAT TUHAN YANG MAHA ESA

REKTOR UNIVERSITAS BRAWIJAYA,

- Menimbang : a. bahwa sebagai acuan penyelenggaraan pendidikan tinggi di Universitas Brawijaya, diperlukan adanya pedoman penyelenggaraan pendidikan tinggi;
- b. bahwa berdasarkan pertimbangan sebagaimana dimaksud dalam huruf a, perlu menetapkan Peraturan Rektor tentang Penyelenggaraan Pendidikan Universitas Brawijaya Tahun Akademik 2023/2024;
- Mengingat : 1. Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional (Lembaran Negara Republik Indonesia Tahun 2003 Nomor 78, Tambahan Lembaran Negara Republik Indonesia Nomor 4301);
2. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 158, Tambahan Lembaran Negara Republik Indonesia Nomor 5336);
3. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 16, Tambahan Lembaran Negara Republik Indonesia Nomor 5500);
4. Peraturan Pemerintah Nomor 108 Tahun 2021 tentang Perguruan Tinggi Negeri Badan Hukum Universitas Brawijaya (Lembaran Negara Republik Indonesia Tahun 2021 Nomor 240);
5. Peraturan Menteri Pendidikan dan Kebudayaan Nomor 3 Tahun 2020 tentang Standar Nasional Pendidikan Tinggi (Berita Negara Republik Indonesia Tahun 2020 Nomor 47);

6. Peraturan Rektor Universitas Brawijaya Nomor 12 Tahun 2023 tentang Organisasi dan Tata Kerja Unsur yang Berada di Bawah Rektor (Lembaran Universitas Brawijaya Tahun 2023 Nomor 12);

MEMUTUSKAN:

Menetapkan : PERATURAN REKTOR TENTANG
PENYELENGGARAAN PENDIDIKAN UNIVERSITAS
BRAWIJAYA TAHUN AKADEMIK 2023/2024.

Pasal 1

Dalam Peraturan Rektor ini yang dimaksud dengan:

1. Universitas Brawijaya yang selanjutnya disingkat UB adalah perguruan tinggi negeri badan hukum.
2. Rektor adalah organ UB yang memimpin penyelenggaraan dan pengelolaan UB.
3. Fakultas adalah himpunan sumber daya pendukung yang menyelenggarakan dan mengelola pendidikan akademik dan/atau pendidikan profesi dalam 1 (satu) rumpun disiplin ilmu pengetahuan dan teknologi.
4. Sekolah Pascasarjana UB yang selanjutnya disebut SPUB adalah penyelenggaraan pendidikan program magister dan program doktor untuk bidang ilmu multidisiplin, interdisiplin, dan transdisiplin.
5. Penyelenggaraan Pendidikan adalah pengaturan, perencanaan, pengawasan, pemantauan, dan evaluasi serta pembinaan dan koordinasi pelaksanaan jalur, jenjang, dan jenis pendidikan.
6. Kurikulum adalah seperangkat rencana dan pengaturan mengenai tujuan, isi, dan bahan pelajaran serta cara yang digunakan sebagai pedoman penyelenggaraan kegiatan pembelajaran untuk mencapai tujuan Pendidikan Tinggi.
7. Sistem Kredit Semester yang selanjutnya disingkat SKS adalah suatu sistem kredit yang diselenggarakan dalam satuan waktu semester.
8. *Outcome Based Education* yang selanjutnya disingkat OBE adalah pendekatan dalam sistem pendidikan yang bertujuan agar mahasiswa memenuhi capaian pembelajaran lulusan.
9. Model Interaksi Sinkron adalah interaksi pembelajaran dosen dan mahasiswa dalam waktu yang sama.
10. Model Interaksi Asinkron adalah interaksi pembelajaran dosen dan mahasiswa yang dilaksanakan tidak dalam waktu yang sama.
11. Pembelajaran dalam Jaringan yang selanjutnya disebut Pembelajaran Daring adalah pembelajaran yang terhubung melalui jejaring komputer, internet, dan sebagainya tanpa tatap muka secara langsung dengan menggunakan dua model interaksi antara dosen dan mahasiswa berdasar waktu proses pembelajaran, yaitu Model Interaksi Sinkron dan Model Interaksi Asinkron.
12. Merdeka Belajar adalah hak belajar mahasiswa di luar program studi paling singkat dilaksanakan selama 1 (satu) semester dan paling lama 3 (tiga) semester.

13. Departemen adalah unsur dari Fakultas yang mendukung penyelenggaraan kegiatan akademik dalam 1 (satu) atau beberapa cabang ilmu pengetahuan dan teknologi dalam jenis pendidikan akademik, pendidikan vokasi, dan/atau pendidikan profesi.
14. Program Studi adalah kesatuan kegiatan pendidikan dan pembelajaran yang memiliki kurikulum dan metode pembelajaran tertentu dalam 1 (satu) jenis pendidikan akademik, pendidikan profesi, dan/atau pendidikan vokasi.
15. Laboratorium adalah perangkat penunjang pelaksanaan pendidikan di lingkungan Fakultas.
16. Unit Pelaksana Akademik adalah seluruh pihak yang memiliki tugas dan wewenang dalam penyelenggaraan kegiatan akademik baik di tingkat UB maupun tingkat Fakultas.
17. Kalender Kegiatan Akademik adalah dasar pengaturan waktu penyelenggaraan kegiatan akademik di UB selama 1 (satu) tahun akademik.

Pasal 2

- (1) Penyelenggaraan Pendidikan UB Tahun Akademik 2023/2024 dilaksanakan sesuai pedoman sebagaimana tercantum dalam Lampiran yang merupakan bagian tidak terpisahkan dari Peraturan Rektor ini.
- (2) Lampiran sebagaimana dimaksud pada ayat (1) terdiri atas:
 - a. Bagian I Kalender Kegiatan Akademik UB Tahun Akademik 2023/2024; dan
 - b. Bagian II Pedoman Pendidikan UB.

Pasal 3

Kalender Kegiatan Akademik UB Tahun Akademik 2023/2024 berlaku bagi semua mahasiswa UB dan Unit Pelaksana Akademik di UB.

Pasal 4

- (1) Peraturan Rektor ini berlaku bagi mahasiswa yang diterima pada Tahun Akademik 2023/2024.
- (2) Produk hukum UB yang mengatur Penyelenggaraan Pendidikan UB yang telah ada sebelum Peraturan Rektor ini ditetapkan dinyatakan tetap berlaku bagi mahasiswa sesuai dengan tahun akademik mahasiswa terdaftar di UB.

Pasal 5

Peraturan Rektor ini mulai berlaku pada awal Semester Ganjil Tahun Akademik 2023/2024.

Agar setiap orang mengetahuinya, memerintahkan pengundangan Peraturan Rektor ini dengan penempatannya dalam Lembaran Universitas Brawijaya.

Ditetapkan di Malang
pada tanggal 7 Agustus 2023

REKTOR UNIVERSITAS BRAWIJAYA,



Diundangkan di Malang
pada tanggal 7 Agustus 2023

KEPALA DIVISI HUKUM DAN TATA LAKSANA
UNIVERSITAS BRAWIJAYA,



HARU PERMADI

LEMBARAN UNIVERSITAS BRAWIJAYA TAHUN 2023 NOMOR 68

Kalender Akademik Tahun Akademik 2024/2025

I	Kegiatan Semester Ganjil	Tanggal
1.	Registrasi Administrasi bagi mahasiswa lama (pembayaran UKT/SPP)	29 Juli 2024 – 9 Agustus 2024
2.	Registrasi Akademik (pengisian KRS) mahasiswa lama	30 Juli – 10 Agustus 2024
3.	Batas akhir batal tambah dan pembatalan mata kuliah	Kebijakan penentuan tanggal diserahkan Fakultas masing2
4.	Pelaksanaan Pengenalan Kehidupan Kampus Mahasiswa Baru Tahun Akademik 2024/2025	14-18 Agustus 2024
5.	Perkuliahhan + Ujian Tengah Semester (UTS) + Ujian Akhir Semester (UAS)	19 Agustus – 20 Desember 2024
6.	Rekonsiliasi Data Mahasiswa	16 – 27 September 2024
7.	Pelaporan PD-Dikti Semester Pelaporan 2023.2 dan 2024.1 (maba)	Penentuan tanggal sesuai dengan ketentuan PD-Dikti
8.	Batas akhir pengumuman nilai ujian dan pengisian KHS	3 Januari 2025
9.	Proses evaluasi keberhasilan studi mahasiswa	6 Januari 2025
10.	Batas akhir pelaksanaan Yudisium *)	7 Januari 2025
11.	Batas akhir proses Keputusan keberhasilan studi mahasiswa	9 Januari 2025
12.	Batas akhir Semester Ganjil	10 Januari 2025

II	Kegiatan Semester Genap	Tanggal
1.	Registrasi Administrasi (pembayaran SPP Online)	20 Januari 2025 – 31 Januari 2025
2.	Registrasi Akademik (pengisian KRS)	21 Januari – 1 Februari 2025
3.	Batas akhir batal tambah dan pembatalan mata kuliah	Kebijakan penentuan tanggal diserahkan Fakultas masing2
4.	Perkuliahhan + Ujian Tengah Semester (UTS) + Ujian Akhir Semester (UAS)	10 Februari – 20 Juni 2025
5.	Rekonsiliasi Data Mahasiswa	17 Februari – 7 Maret 2025
6.	Pelaporan PD-Dikti Semester Pelaporan 2024.1 dan 2024.2 (maba pascasarjana)	Penentuan tanggal sesuai dengan ketentuan PD-Dikti
7.	Batas akhir pengumuman nilai ujian dan pengisian KHS	27 Juni 2025
8.	Pelaksanaan Semester Antara	23 Juni – 18 Juli 2025
9.	Batas akhir pengumuman nilai ujian dan pengisian KHS Semester Antara	25 Juli 2025
10.	Proses evaluasi keberhasilan studi mahasiswa	26 Juli 2025
11.	Batas akhir pelaksanaan Yudisium *)	25 Juli 2025
12.	Batas akhir proses Keputusan keberhasilan studi mahasiswa	28 Juli 2025
13.	Batas akhir Semester Genap	31 Juli 2025
III	Kegiatan Universitas	Tanggal
1.	Upacara Dies Natalis UB ke 62 (Pidato Ilmiah)	05 Januari 2025

**ACADEMIC HANDBOOK MASTER'S PROGRAM OF
ANIMAL SCIENCE 2020/2021**



**FACULTY OF ANIMAL SCIENCE
UNIVERSITAS BRAWIJAYA
MALANG
2024**

PREFACE

Academic handbook 2023/2024 for Master Program of Animal Science, Faculty of Animal Science, Universitas Brawijaya (MPAS, FAS, UB) is published in order to accelerate the dissemination of information and implementation of the teaching and learning process at MPAS, FAS, UB.

This academic handbook is a translation of the implementation of Sisdiknas Regulation No. 12 Year 2012 about higher education and PRD No.4/2016 about the status of Universitas Brawijaya dan Dean decree No. 77 Year 2016 which is expected to provide a clearer explanation to lecturers, students and the community regarding the implementation of education in Faculty of Animal Science UB. The curriculum in academic handbook is formulated based on learning outcomes that refer to Indonesian Qualification Framework (IQF) (PP No.8 tahun 2012). The other things that have not been regulated in this handbook follow the academic handbook of Universitas Brawijaya (www.ub.ac.id).

Finally, we hope that this academic handbook can fulfill its function as a reference in implementing the teaching and learning process.

Faculty of Animal Science
Universitas Brawijaya
Dean,

Prof. Dr. Ir. M. Halim Natsir, S.Pt. MP.IPM. ASEAN Eng

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CHAPTER I

INTRODUCTION

A. History

Faculty of Animal Science established on October 26, 1961, which was still called the Faculty of Veterinary Medicine and Animal Science. Based on the Decree of the Minister of PTIP Number: 92 dated August 1, 1962, FKHP was given state status and since July 1, 1962, it was under Airlangga University.

Meanwhile, in Probolinggo in October 28, 1961, the Probolinggo Higher Education Foundation opened a College for the Department of Marine Fisheries. This department later became one of the Faculty of Veterinary Medicine and Animal Science departments, namely based on the Decree of the Minister of PTIP No. 163 the year 1963 dated May 25, 1963.

In January 5, 1963, UB and all its faculties were state status by the Decree of the Minister of PTIP No. 1 of 1963. The Faculty of Agriculture and the Faculty of Veterinary Medicine and Animal Science which were initially under Universitas Airlangga, were returned to Universitas Brawijaya.

Since February 3, 1972, the Probolinggo Marine Fisheries Department College joined FKHP, UB as the Department of Fisheries through the Rector's Decree Number 229/Pend.5/25-72. Meanwhile, at the end of 1970, the Department of Veterinary Medicine was established to have three Departments, namely the Department of Animal Science, Veterinary Medicine, and Fisheries. The Department

of Veterinary Medicine finally joined Airlangga University in Surabaya from August 1972 until now.

In subsequent developments, the Department of Fisheries in Probolinggo was moved to Malang to facilitate implementation and the possibility of its development. Based on the Decree of the Minister of Education and Culture Number 0220/B/1973 dated December 3, 1973, the name of FKHP was changed to the Faculty of Animal Science with two study programs (Animal Science and Fisheries) starting from January 1, 1973. The Decree of the Rector of Universitas Brawijaya No. 51/Sk/77 dated July 5, 1977 name of the Faculty of Animal Science become Faculty of Animal Science and Fisheries (FPP). On May 13, 1983, the Department of Fisheries obtained the status as the Faculty of Fisheries, Universitas Brawijaya with the Decree of the Minister of Education and Culture Number 39249/I/1983 FPP UB only has one department, namely the Department of Animal Science. Through the Decree Presidential of the Republic of Indonesia Number 59 of 1982 dated September 7, 1982. the name of FPP was changed back to the Faculty of Animal Science.

In 1984, through the Decree of the Director-General of Higher Education Number 118/Dikti/Kep./1984 UB's Faculty of Animal Science was allowed to hold two departments, namely the Department of Animal Feed and Nutrition, and the Department of Animal Production and three Study Programs under the Dean, namely: Reproduction and Animal Breeding Study Program, Animal Product Technology Study Program, and Livestock Socio Economy Study Program. Furthermore,

based on the Letter of the Director-General of Higher Education Number 225/Dikti/Kep/1996, there are four study programs in the Faculty of Animal Science, namely: Animal Production Study Program, Animal Feed and Nutrition Study Program, Animal Product Technology Study Program, and Livestock Socio Economy Study Program. The Faculty of Animal Science only consists of 1 Study Program, namely Animal Science, which consists of 5 interests, including Animal Production, Feed and Animal Nutrition, Animal Product Technology, Livestock Socio Economy, and Animal Breeding and Reproduction.

Universities to face the demands of change and the world of work for graduates, it must be able to adjust themselves so that good changes are needed both in an institutional and curriculum, according because that the Competency-Based Curriculum prepares as part of the process of unifying the study program which was named "Animal Science Study Program" which was determined based on the Decree of the Director-General of Higher Education No. 0034/D2.2/2008.

In 1981, UB and Universitas Gadjah Mada (UGM) pioneered Master Program of Animal Science (MPAS) by delivering a credit semester. MPAS was established in 1999 under UB Postgraduate management. Based on the Rector's Decree in 2006 (No.30/SK/2006, date 21 February 2006), MPAS management was handed over to Faculty of Animal Science.

B. Vision, Mission, and Educational Objectives

1. Vision

To become a leading institution in the animal science sector based on local resources at the national and international levels.

2. Mission

- a. Providing education in the sector of animal science that fulfills of national and international standards.
- b. Developing research that produces international standard scientific work, science and technology that is needed for society and industry.
- c. Developing and expanding the cooperation networks at domestic and abroad in the sectors of education, research and international scientific publications.
- d. Aligning the quality of learning with national and international standards to produce graduates who are competitive nationally and internationally and have competencies according to the needs of stakeholders.

3. Educational Objectives

- a. Producing graduates who are devoted to God Almighty, with the spirit of Pancasila.
- b. Producing graduates who have excellence in the development and application of science and technology, especially in the sectors of animal science who are competitive nationally and internationally.

- c. Producing graduates with high spirit of entrepreneurship who are able to manage and develop livestock business.
- d. Producing graduates who have qualified leadership abilities and encouragement for livestock development in the community (community leader).
- e. Producing graduates who have high managerial abilities and work in various agencies/industries in a professional and highly competitive manner in the workplace both at domestic and abroad.
- f. Able to develop and conserve local livestock resources to empower livestock on an industrial scale.
- g. Able to establish cooperation in the Tri Dharma of Higher Education with various related parties, both national and international.
- h. Able to follow the development of science and technology in the field of animal science.

CHAPTER II

ORGANIZATIONAL STRUCTURE AND PERSONNEL

A. Organizational Structure

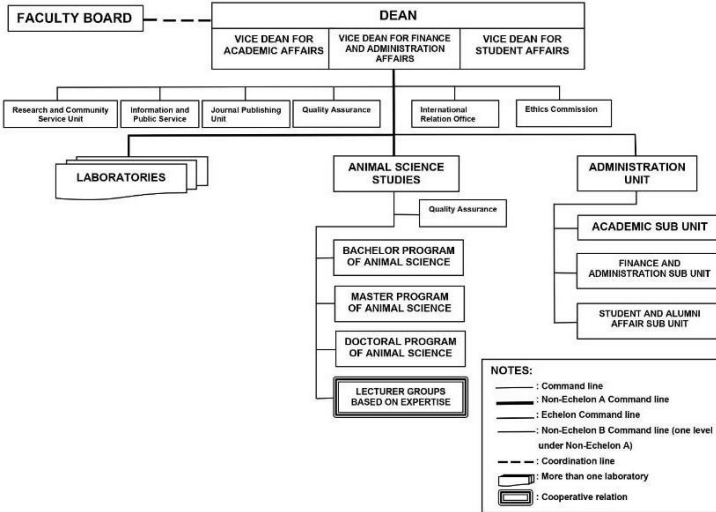


Figure 2. 1 Organizational Structure

B. Personnel

Position	Name
Dean	Prof. Dr. Ir. M. Halim Natsir, S.Pt., MP., IPM, ASEAN Eng.
Vice Dean for Academic Affairs	Ir. RIzki Praftri, S.Pt., M.A., Ph.D
Vice Dean on Finance and Administration Affairs	Dr. Agus Susilo, S.Pt., MP., IPM, ASEAN Eng.
Vice Dean for Student Affairs	Dr. Ir. Eko Widodo, M.Agr.Sc., M.Sc.

Head of Animal Science Studies	Dr. Irida Novianti, S.Pt., M.Agr.Sc.
Head of Bachelor Program of Animal Science	Dr. Adelina Ari Hamiyanti, S.Pt., MP.
Head of Master Program of Animal Science:	Dr. Ir. Marjuki, M.Sc.
Head of Doctoral Program of Animal Science	Prof.Dr.Ir. Osfar Sjojfan, M.Sc., IPU., ASEAN Eng.
Head of Animal Production Department	Dr. Faizal Andri, S.Pt., MP.
Head of Feed and Animal Nutrition Department	Dr. Heli Tistiana, S.Pt., MP.
Head of Animal Production Technology Department	Dr. Dedes Amertaningtyas, S.Pt., MP.
Head of Livestock Social Economic Department	Dr. Jaisy Aghniarahim Putritamara, S.Pt., MP.
Head of Faculty Quality Assurance	Dr. Asri Nurul Huda, S.Pt., MP., M.Sc.
Head of Journal Management Office	Dr. Abdul Manab, S.Pt., MP.
Head of Research and Community Services Office	Prof.Dr.Ir. Osfar Sjojfan, M.Sc., IPU., ASEAN Eng.
Head of Management Information System and Public Relation	Dr. Yuli Frita Nuningtyas, S.Pt., MP., M.Sc
Head of International Relation Office	Prof. Dr. Ir. V. M. Ani Nugartiningasih, M.Sc.

Lecturers

The number of lecturers in MPAS, FAS, UB of animal Science is 46 consisting of 19 Professors, 13 Assistant Professor and 14 associate Professor. Details of the name and the expertise of lecturers are presented in chapter 4 (Table 3.2).

C. Administrative Staff

Administrative Staff to support the smooth implementation of education at the Faculty of Animal Science, 48 staff members, all of whose employee's status are Civil Affairs; 10 staff members have Bachelor Degree as educational background.

CHAPTER III

EDUCATION SYSTEM

A. Interest or department

MPAS, FAS, UB is composed of five interests or department, i.e. :

1. Department of Animal Production
2. Department of Animal Feed and Nutrition
3. Department of Livestock Products Technology
4. Department of Livestock Agribusiness
5. Department of Animal Reproduction and Breeding

Each department is coordinated by a Head of Department who are responsible to organize and coordinate lecturer staff in the respective department, especially in appointing lecturer for subject, supervisors and thesis examiner in coordination with Head of MPAS, FAS, UB.

B. Program

MPAS, FAS, UB has been conducted two master degree programs, i.e.:

A. Regular Program

Regular program means that the academic processes are fully conducted at MPAS, FAS, UB according to Rules and Callender Academic of Universitas Brawijaya and Curriculum of MPAS, FAS, UB. In some cases student is possible to take subject from other study program or to do research thesis at FAS or in other faculties in Universitas Brawijaya or other university. In case of student taking subject from other study program at FAS or in other faculties in Universitas Brawijaya or other university, then credit transfer system is implemented. Upon finishing their

study, the students get Master Program Certificate from Universitas Brawijaya

B. Double Degree Program

Academic processes for Double Degree Program are jointly conducted by MPAS, FAS, UB with foreign university partner. As master program is targeted for four semester (two years), then the academic processes for Double Degree Program is conducted for two semesters at MPAS, FAS, UB and the other two semesters are conducted at foreign university partner. Upon finishing their study, the students get Master Program Certificate from Universitas Brawijaya. This Double Degree Program has been conducted by MPAS, FAS, UB with Prince of Songkla University, Hat Yai, Thailand in 2010 and National Pingtung University of Science and Technology, Pingtung, Taiwan since 2011. In 2025, this program will be conducted jointly with Shinshu University, Japan.

C. Workload and Credits

Universitas Brawijaya has formally adopted the Semester Credit System, stipulated by the Chancellor's Decree Number 22/SK/1917 dated May 3, 1976.

1. Semester Credit Unit for lectures

SCU is a system credits held in semester time units. The score of one-semester credit unit in a lecture is determined based on the activity load which includes all activities per week as follows:

a. Students

- 1) Sixty minutes of lectures per week for 1 semester.
- 2) One hundred minutes of structured assignment per week for 1 semester.
- 3) One hundred and twenty-five minutes of independent study per week for 1 semester.
- 4) Minimum score of Bahasa courses in undergraduate program is B

2. Semester Credit Score for Research

The score of one SCS for Research is 285 minutes per week scheduled for two semester (semester 3 and 4).

3. Workload of MPAS student

The workload of MPAS is as follows:

- a. The master student must obtain at least 54 SCU including thesis (Regulation of Ministry of Education, Culture, Research and Technology Number 53/2023: Quality Assurance for Higher Education)
- b. The master students with non-linear study program background are required to do Matriculation Program (non-credit) which has been determined. It has to be done before formal learning program began.
- c. Total credits for matriculation are 6 SCU (non-credit). The Matriculation subjects are Statistic and Experimental Design and Academic Writing.
- d. Subject composition:
 1. Compulsory subjects are taken in the first semester (18credits)
 2. Compulsory subjects 9 credits and Elective subjects (at least 7 credits) are taken in the second semester and
 3. Master Thesis in the third and fourth semester (22 credits). The learning outcome for thesis:
 - Scientific publication in international journals indexed by Scopus or Web of Science Core Collection (Thomson Reuter) or national journal accredited by Sinta 2, or UB journals determined by the Rector; or Scopus indexed proceedings according to the Rector's Regulation Number 52 of 2018.
 - The Master's Program is taken in a maximum of 4

years (8 semesters)

- e. For enrolment as a master student, the candidate need to obtain undergraduate degree except for students who take special programs such as the Fast-Track Program.

D. Curriculum Content

Curriculum of MPAS, FAS-UB was formulated to refer to Constitution of the Republic of Indonesia Number 20 of 2003 concerning the National Education System. Meanwhile the learning outcomes refers to the Presidential Regulation No. 8 of 2012 concerning the Indonesian National Qualifications Framework (IQF), Permendikbudristek Number 53/2023: Quality Assurance for Higher Education, the Regulation of UB Rector Number 2770, 23 April 2024: The implementation of Permendikbudristek Number 53/2023. This curriculum is used as guideline for teaching and learning process at MPAS, FAS-UB. The curriculum is as follows:

- a. University Compulsory Subject
 - Research Methods and Scientific Writing subject : 3 credits
 - Thesis : 22 credits
- b. Study Program Compulsory Subjects : 15 credits
- c. Minat compulsory subjects : 9 credits
- d. Elective Subjects : minimum 7 credits
- e. Total workload for lectures: 24 - 40 credits
- f. The maximum of total workload per semester is 18 credits

E. Study Evaluation

4. Study Evaluation

The categories that are to be evaluated:

- a. Students who have not been able to achieve GPA = 3.0 at the end of the first semester for the best eight credits will receive a warning from the faculty
- b. Students at the end of third semester (registered semester) have not been able to achieve a GPA 3.0 for the best 16 credits, the student concerned is declared a failure and is not allowed to continue his/her studies.
- c. The student may re-take a subject once
- d. For students who have achieved at least 14 credits with minimum GPA 3.0 and have passed Research Methods Subject, the person concerned can formally submit thesis proposal.
- e. The thesis proposal must be approved by the Supervisory Commission. Defending thesis proposal in front of the Thesis Proposal Assessment Team (supervisory commission and two examiners who have been appointed by Head of Master Study Program) is mandatory.
- f. Students who have passed the thesis proposal seminar and have revised it.

5. Failure of Study

Students are declared to be fail if :

- a. GPA at the end of the third semester <3.0 for the best 16 credits, or
- b. The student did not pass in the thesis proposal examination on the second chance, or
- c. The student did not pass in the final thesis examination on the second chance
- d. The study period is more than 8 semester as active student

F. Final Project Thesis

6. Definition

- a. Thesis is an academic paper made based on the results of independent research by master students under the supervision and guidance of a supervisory team
- b. Thesis is mandatory to be done by master students
- c. Total credit of thesis is 22 credits
- d. The topic of thesis is the development of science, technology in accordance with the scope of the scientific field in the study program where the student is registered
- e. The data or facts used as the basis for Thesis must come from research activities (included literature studies)
- f. The data have to be obtained according legal research activities and trustworthy measurements and avoid plagiarism

7. Thesis Workload

Thesis workload is 22 credits, consisting of:

- a. Preparation of thesis proposal
- b. Thesis proposal examination (2 credits)
- c. Conducting research
- d. Writing and publishing two scientific articles in scientific journals or proceedings (6 credits)
- e. Writing Thesis Report
- f. Seminar of thesis research results (2 credits)
- g. Thesis Final Examination (12 credits)

The proportion of each part of work activities in thesis to the final grade:

- a. Thesis Proposal Exam ($2/22 * 100\% = 9.09\%$)
- b. Result Seminar ($2/22 * 100\% = 9.09\%$)
- c. Scientific Publication (Journal and/or Proceedings)
($6/22 * 100\% = 27.27\%$)
- d. Thesis Final Exam ($12/22 * 100\% = 9.09\%$)

8. Thesis Research Proposal Examination

Requirements

- a. The student has to pass a minimum of 14 credits with minimum GPA of 3.00
- b. The student has to pass Research Methodology Subject with minimum grade B
- c. Already have thesis supervisory committee (two supervisors)

Implementation

- a. Thesis Proposal examination is assessed by a team of examiners consisting of a supervisory committee and two examiners
- b. Thesis Proposal examination must be attended by at least 3 out of 4 examiners.

Research/Literature Study and Thesis Writing

- a. The supervisory committee is obliged to monitor and evaluate the thesis research activities of the master students
- b. The assessment of thesis research activities is carried out by supervisory committee that considered these points:
 - Research Monitoring Card (KKP)
 - Research Log Book
 - Research Progress Report
 - Research supervision report and assessment form
 - Monitoring can be carried out on site or based on a written report
 - Assessment can be carried out through supervisory commission session forum and it is stated in the Number or Letter
 - Procedures and financial support for research monitoring and assessment are regulated by study program

9. Result Seminar of Thesis

Requirements

Result seminar of Thesis conducted by student which:

- The research was done and the draft of thesis is approved and signed by supervisory committee
- The journal articles draft has submitted to the supervisory committee. Student has participated in a minimum number set of result seminar

The Implementation of Seminar Thesis

- a. Thesis Research Results Seminar is assessed through presentations and open discussions by a team of examiners. The attendance of examiner team at least 3 out of 4 members.

10. Thesis Final Exam

- a. Final Thesis draft has been revised, approved and signed by all supervisors
- b. The thesis draft has been checked to prevent plagiarism by thesis committee of study program and declared a maximum similarity 20%
- c. The student has fulfilled all administrative requirement
- d. The registration for Final Thesis Exam can be done at least 7 days before the exam date.
- e. The articles have been published in a journal or seminar proceeding according to study program regulation

Implementation of the final thesis exam

- a. Thesis examination consists of a supervisory committee and two examiners. The proposal examination can be carried out if attended by at least 3 out of 4 members of the examiner team
- b. If the main supervisor is unable to attend thesis proposal seminar, the supervisor must delegate to the co-supervisor

Procedure for Thesis Examination Assessment

- a. Assessment is carried out by all examiners team members

- b. In special cases, master student who have outstanding achievements in international publications as determined by Rector can be graduate without final thesis exam. The examiners team can propose to Dean and/or head of study program to award grade A for his/her. The examiners team evaluates and decides regarding the student's publications whether students have outstanding achievements
- c. The criteria of outstanding achievement candidate:
 - Have scientific publications
 - o minimum 2 (two) scientific articles that have been published or accepted in accredited Journal of Sinta 2
 - o at least one article that has been published or accepted in the proceedings, or
 - o at least one article that has been published or accepted in an international journal indexed by Scopus or the Web of Science Core Collection (Thomson Reuters)
 - The average grade for all stages of Thesis is A
 - The Thesis Draft has been evaluated and reviewed by examiners team. The master student revised and have approved by supervisory committee

Qualifications, Determination, Rights and Obligations of Supervisors

Thesis preparation is directed by supervisory committee consist of 2 (two) members. The minimum educational

qualification of the supervisors as internal supervisors and external supervisors is a doctoral degree with an Assistant Professor position and a doctoral degree with Associate Professor or Assistant Researcher, respectively.

The supervisory committee are appointed by Head of Study Program and approved by Dean.

The Grade Scale Assessment

The grade scale of assessment is distributed in several grades ranged A-E of grade value and 0-100 of score (Table 1.).

Table 3. 1 The Assessment Grade

Score range	Grade Value	Grade Point	Remarks
>80-100	A	4	Excellent
>75-80	B+	3.5	Very good
>69-75	B	3	Good
>60-69	C+	2.5	Fail
>55-60	C	2	Fail
>50-55	D+	1.5	Fail
>44-50	D	1	Fail
0-44	E	0	Fail

Master Program Judiciary

The maximum of study duration of Master is 4 years. Judiciary is conducted after students complete all academic and administrative requirements:

- a. Completed lectures, thesis and other academic assignments.
- b. The minimum grade for all subjects is B.
- c. Complete other requirements set by the study program.

Master Graduation Predicate

Students who are declared passed receive graduation predicate with the criteria for master's graduation predicate are as follows:

- a. Graduated with honors (Cumlaude) with the following requirements are:
 - GPA >3.75
 - Have publication more than one article in scientific publications in the form of proceedings and or international scientific journals indexed by Scopus or Web of Science Core Collection, national journals that are accredited of Sinta 2, and UB journals as determined by Rector
 - The maximum study period is five semesters
- b. Graduated with the predicate Very Satisfactory, the requirements are:
 - Does not meet one of requirements in point (a)
 - GPA > 3.5
- c. Graduated with the predicate Satisfactory, the requirements are:
 - GPA 3.0 - 3.5
- d. The graduation predicate is determined by Examiner team and approved by Dean and/or Head of Study Program

CHAPTER IV

CURRICULUM

MPAS, FAS, UB curriculum is structured based on the Law of the Republic of Indonesia Number 12/ 2012 on Higher Education, Presidential Regulation of the Republic of Indonesia Number 8/2012 on the Indonesian National Qualifications Framework (IQF), Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 73/ 2013 on the Implementation of the Indonesian Qualifications Framework in Higher Education Sector, Permenristekdikti Number 44/2015 on National Standards for Higher Education (SN-DIKTI), Government Regulation Number 4/2012 on Implementation of Higher Education, and Permendikbud No. 32020 on National Standards of Higher Education. Permendikbudristek Number 53/2023: Quality Assurance for Higher Education, the Regulation of UB Rector Number 2770, 23 April 2024: The implementation of Permendikbudristek Number 53/2023. MPAS graduate profiles refer to IQF Level 8 with competences :

1. Capable to develop knowledge, technology, and/or art in the field of science or professional practice through research, so it produces innovative and tested works
2. Capable to solve problems of science, technology, and/or art in their field of science through an inter or multidisciplinary approach
3. Capable to manage research and development that is beneficial to society and science, and can gain national and international recognition

The structure of curriculum of MPAS, FAS, UB can be seen in Figure 3.1.

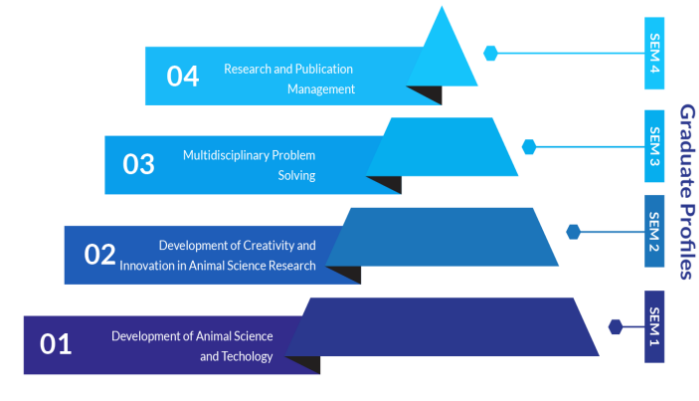


Figure 3. 1 Curriculum structure of Master Program of Animal Science, Faculty of Animal Science, UB

The Subject Description of Master Program

Prior to graduation, students must complete at least 56 credits, which is consisted of compulsory subjects 27 credits, elective subjects at least 7 credits and thesis 22 credits. Compulsory subjects are scheduled in the first semester (18 credits), and the rest of 9 credits plus elective subjects (at least 7 credits) are scheduled in the second semester. Master Thesis that includes thesis proposal examination, research, at least two articles publication, thesis seminar and thesis final examination are scheduled in the third and fourth semester (total of 22 credits). The distribution of credits earning by

students in each semester is presented in Table 1.

Table 1. The distribution of credits earning by students in each semester

Semester	Subject	N	Credit	Total
I (Subject)	- Compulsary subject of University	1	3	18
	- Compulsary subject of Study Program	2	6	
	- Compulsary subject of Department	3	9	
II (Subject)	- Compulsary subject of Study Program	3	9	16
	- Elective subject (at least)	3	7	
III (Thesis)	- Examination of thesis proposal	1	2	22
	- Publication 1	1	3	
	- Publication 2	1	3	
IV (Thesis)	- Seminar	1	2	
	- Final examination of thesis	1	12	
TOTAL (at least)				56

The list of all subjects in MPAS are as follows and the description of each subject is listed in Appendix 1.

Compulsary Subjects of Universitas Brawijaya

No	Subjects	Credit	Semester
1	Research Methodology and Scientific Writing	3 (2+1)	1
2	Thesis	22	3/4

Compulsary Subjects of Study Program

No	Subjects	Credit	Semester
1	Sustainable Livestock Industry Systems	3	1
2	Animal Welfare and Ethics	3 (2+1)	1

3	Big Data and Meta-Analysis in Animal Production	3	2
4	Artificial Intelligence and Precision Animal Production	3	2
5	Research Design and Data Analysis	3 (2+1)	2

Compulsary Subjects of Department

Compulsary Subjects of Animal Production Department

No	Subjects	Credit	Semester
1	Animal Production Physiology	3	1
2	Technology of Animal Production	3	1
3	Animal Production Development	3	1

Compulsary Subjects of Animal Feed and Nutrition Department

No	Subjects	Credit	Semester
1	The Science and Technology of Feed Processing	3	1
2	Development of Animal Feed and Nutrition	3	1
3	The Science and Techniques of Feed Evaluation	3	1

Compulsary Subjects of Livestock Products Technology Department

No	Subjects	Credit	Semester
1	Biotechnology of livestock-derived foods	3	1
2	Design and Processes of Livestock Products	3	1
3	Regulation of Livestock Product Industry	3	1

Compulsary Subjects of Livestock Agribusiness Department

No	Subjects	Credit	Semester
1	Agribusiness Supply Chain Management	3	1
2	Agribusiness Politics and Policy	3	1
3	Strategic Management of Livestock	3	1

	Agribusiness		
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Compulsary Subjects of Animal Reproduction and Breeding Department

No	Subjects	Credit	Semester
1	Animal Reproduction Efficiency	3 (2+1)	1
2	Animal Genetic Evaluation and Breeding Program Design	3	1
3	Animal Breeding Management	3	1

Elective Subjects

Elective Subjects of Animal Production Department

No	Subjects	Credit	Semester
1	Industry of Ruminant Production	3	2
2	Industry of Non-Ruminant Production	3	2
3	Animal Waste Management Industry	3	2

Elective Subjects of Animal Feed and Nutrition Department

No	Subjects	Credit	Semester
1	Development Strategy of Ruminant Feed and Nutrition	3	2
2	Development Strategy of Non-Ruminant Feed and Nutrition	3	2
3	Development Strategy of Forages	3	2

Elective Subjects of Livestock Products Technology Department

No	Subjects	Credit	Semester
1	Technology of Meat, Leather and By-product Industry	3	2
2	Technology of Dairy Industry and By-	3	2

	products Industry		
3	Technology of Egg and Honey Industry	3	2

Elective Subjects of Livestock Agribusiness Department

No	Subjects	Credit	Semester
1	Social Engineering	3	2
2	Livestock Business Communication	2	2
3	Agribusiness Risk Management	2	2

Elective Subjects of Animal Reproduction and Breeding Department

No	Subjects	Credit	Semester
1	Biotechnology of Animal Reproduction	3 (2+1)	2
2	Ruminant and Non-Ruminant Breeding	3	2
3	Animal Reproduction and Molecular Genetics	3 (2+1)	2

The most ideal plan for completion of study at MPAS, FAS UB is presented in Figure 3.2.

Departemen	Category	Semester			
		1	2	3	4
Animal Production	University compulsory subject	Research methodology and scientific writing (3)			
	Study program compulsory subject	Sustainable Livestock Industry Systems (3), Animal Welfare and Ethics (3)	Study program compulsory subject		
	Compulsory subject interested in animal Production	Animal Production Physiology (3), Technology of Animal Production (3), Animal Production Development (3)	Big data and Meta-Analysis in Animal Production (3), Artificial Intelligence and Precision Animal Production (3), Research Design and Data Analysis (3)		
Animal Feed and Nutrition	University compulsory subject	Research methodology and scientific writing (3)			
	Study program compulsory subject	Sustainable Livestock Industry Systems (3), Animal Welfare and Ethics (3)			
	Compulsory subject interested in Animal Feed and Nutrition	The Science and Technology of Animal Feed Processing (3), Development of Animal Feed and Nutrition (3), The Science and Techniques of Feed Evaluation (3)	Elective subject		
Animal Product Technology	University compulsory subject	Research methodology and scientific writing (3)			
	Study program compulsory subject	Sustainable Livestock Industry Systems (3), Animal Welfare and Ethics (3)	Industry of Ruminant Production (3), Industry of Non-Ruminant Production (3), Animal Waste Management Industry (3), Development Strategy of Ruminant Feed and Nutrition (3), Development Strategy of Forages (3), Technology of Meat, Leather and By-Product Industry (3), Technology of Dairy Industry and By Products Industry (3), Technology of Egg and Honey Industry (3), Social Engineering (3), Livestock Business Communication (2), Agribusiness Risk Management (2), Biotechnology of Animal Reproduction (3), Ruminant and Non-ruminant Breeding (3), Animal Reproduction and Molecular Genetic (3)	Master Thesis(10)	Master Thesis (10)
	Compulsory subject interested in animal products Technology	Biotechnology of Livestock-derived Foods (3), Design of Processes of Livestock Product (3), Regulation of Livestock Product Industry (3)			
Agribusiness	University compulsory subject	Research methodology and scientific writing (3)			
	Study program compulsory subject	Sustainable Livestock Industry Systems (3), Animal Welfare and Ethics (3)			
	Compulsory subject interested in agribusiness	Agribusiness Supply Chain Management (3), Agribusiness Politics and Policy (3), Strategic Management of Livestock (3)			
Animal Reproduction and Breeding	University compulsory subject	Research methodology and scientific writing (3)			
	Study program compulsory subject	Sustainable Livestock Industry Systems (3), Animal Welfare and Ethics (3)			
	Compulsory subject interested in animal Reproduction and Breeding	Animal Reproductive Efficiency (3), Animal Genetic Evaluation and Breeding Program Design (3), Animal Breeding Management (3)			

Figure 3. 2 The ideal plan for completion of study at MPAS, FAS, UB

Table 3. 2 The list of MPAS, FAS, UB lecturers

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
1	Professor/Full time	Livestock Agribusiness	Prof.Dr. Ir. BUDI HARTONO,MS., IPU., ASEAN Eng.	2030	90,665	Strategic Management of Livestock Agribusiness, Agribusiness Supply Chain Management Animal Food Industry
2	Professor/Fulltime	Ruminant Nutrition	Prof. Dr. Ir. SITI CHUZAEMI, MS.,IPU., ASEAN Eng.	2028	90,667	Ruminant Feed Development Strategy
3	Professor/Fulltime	Miscellaneous Animal Production and Waste Processing	Prof. Dr. Ir. MOCHAMMAD JUNUS, MS.	2025	68	Animal Waste Management Industry
4	Professor/Fulltime	Ruminant Nutrition	Prof.Dr. Ir. HARTUTIK, MP., IPU.,ASEAN Eng.	2026	68	Development of Feed and Nutrition, Feed Processing Science and

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
						Technology
5	Professor/Fulltime	Milk Technology	Prof. Dr. Ir. LILIK EKA RADIATI,MS., IPU	2029	68	Animal Food Biotechnology
6	Professor/Fulltime	Animal Breeding and Genetics	Prof.Dr. Ir. VERONICA MARGARETA ANI NURGIARTININGSIH, M.Sc.	2034	102	Animal Genetic Evaluation And Breeding Program Design, Animal Breeding Management
7	Professor/Fulltime	Poultry Nutrition	Prof.Dr. MUHAMMAD HALIM NATSIR, S.Pt., MP., IPM., ASEAN Eng.	2041	79,333	Research Methodology and Scientific Writing, Big Data and Artificial Intelligence in Animal Science, Non-Ruminant Feed Development Strategy
8	Professor/Fulltime	Animal Reproduction	Prof.Dr.Ir. SRI WAHJUNINGSIH, M.Si.	2029	228	Animal Reproductive Biotechnology

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
9	Associate professor/Fulltime	Animal Breeding and Genetics	Dr.Ir. AGUS BUDIARTO, MS.	2027	228	Animal Genetic Evaluation and Breeding Program Design, Animal Breeding Management
10	Associate professor/Fulltime	Food Technology	Dr.Ir. AGUS SUSILO, S.Pt., MP., IPM., ASEAN Eng.	2038	152	Regulation of Animal Product Industry, Technology of Meat, Leather and By-Product Industry
11	Associate professor/Fulltime	Poultry Production	Dr.Ir. EDHY SUDJARWO, MS.	2027	228	Animal Production Development, Industry of Non-Ruminant Production
12	Professor/Fulltime	Livestock Agribusiness	Prof. Ir. HARI DWI UTAMI, MS., M.AppL.Sc., Ph.D., IPM., ASEAN Eng.	2026	228	Strategic Management of Livestock Agribusiness, Agribusiness Supply Chain Management
13	Associate professor/Fulltime	Egg Technology	Dr. HERLY EVANUARINI, S.Pt., MP.	2040	114	Design and Processes of Animal Products, Animal Food Biotechnology,

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
						Technology of Egg and Honey Industry
14	Associate professor/Fulltime	Poultry Nutrition	Dr.Ir. IRFAN H.D., M.Sc., IPM.,ASEAN Eng.	2030	114	Development of Feed and Animal Nutrition, Non- Ruminant Feed Development Strategy
15	Assistant Professor/Fulltime	Miscellaneous Animal Production	Dr.Ir. ITA WAHJU NURSITA, M.Sc.	2028	76	Animal Production Physiology, Animal Waste Management Industry
16	Assistant professor/Fulltime	Food Biotechnology	Dr. KHOTHIBUL UMAM ALAWWALY, S.Pt., M.Si.	2039	76	Design and Processes of Animal Products, Regulation of Animal Product Industry
17	Professor /Full time	Meat Animal Production	Prof. Dr.Ir. KUSWATI, MS., IPM.,ASEAN Eng.	2028	152	Animal Production Technology, Industry of Ruminant Production

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
18	Associate professor/Fulltime	Milk Technology	Dr. Ir. MANIK EIRRY SAWITRI, MS.	2024	114	Design and Processes of Animal Products, Technology of Dairy and By- product Industry
19	Associate professor/Fulltime	Ruminant Nutrition	Dr. Ir. MARJUKI, M.Sc.	2028	76	Research Methodology and Scientific Writing, Ruminant Feed Development Strategy
20	Associate professor/Fulltime	Ruminant Nutrition	Dr. Ir. MASHUDI, M. Agr. Sc., IPM., ASEAN Eng.	2026	114	Ruminant Feed Development Strategy
21	Assistant professor/Fulltime	Livestock Agribusiness	Dr. Jaisy Aghniarahim Putritamara, S.Pt., MP.	2021	76	Strategic Management of Livestock Agribusiness
22	Professor/Fulltime	Dairy Animal Production	Prof. Dr. Ir. TRI EKO SUSILORINI, MP., IPM., ASEAN Eng.	2023	228	Animal Production Technology, Animal Production Development, Industry of Ruminant Production
23	Assistant Professor/Fulltime	Rural Sociology	Dr. Ir. PRIYO SUGENGWINARTO, M.A.	2026	76	Research Methodology and Scientific Writing, Social Engineering,

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
						Livestock Business 29Communication
24	Associate Professor/Fulltime	Socio economic	Dr. Siti Azizah, Spt.MSos.M.Commun	2040	152	Research Methodology and Scientific Writing, Social Engineering, Livestock Business Communication
25	Assistant Professor/Fulltime	Forage Science	Dr. Ir. Siti Nurul Kamaliyah, MP	2028	76	Forage Development Strategy
26	Assistant Professor/Fulltime	Miscellaneous Animal Production	Dr.Ir. SRI MINARTI, MP., IPM.,ASEAN Eng.	2026	152	Animal Production Development, Industry of Non-Ruminant Production
27	Associate Professor/Fulltime	Poultry Nutrition	Dr.Ir.Eko Widodo,M.Sgr.Sc.MSc	2028	228	Feed Processing Science and Technology, Non-Ruminant Feed Development Strategy

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
28	Professor/Fulltime	Animal Reproduction	Prof. Dr.Sc.Agr. Suyadi, MS., IPU, ASEAN Eng.	2032	156	Animal Reproduction and Molecular Genetics
29	Professor/Fulltime	Animal Reproduction	Prof. Dr. Ir. Nurul Isnaini, MP.	2026	152	Animal Reproduction Efficiency
30	Associate Professor/Fulltime	Food Technology	Dr. Ir. Eny Sri Widyastuti, MP.	2025	76	Technology of Meat, Leather and By-product Industry
31	Assistant Professor/Fulltime	Livestock Agribusiness	Ir. Rizky Prafitri, S.Pt., M.A., Ph.D	2047	76	Agribusiness Risk Management

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
32	Associate Professor/Fulltime	Food Technology	Dr. Ir. Aris Sri Widati, MS.	2025	76	Technology of Meat, Leatherand By-product Industry
33	Assistant Professor/Fulltime	Leatherand By-product Industry	Dr. Dedes Amertaningtyas, S.Pt., MP	2049	76	Technology of Meat, Leatherand By-product Industry
34	Professor/Fulltime	Dairy Animal Production	Prof. Dr. Ir. Pugh Surjowardojo, MP.	2027	152	Industry of Ruminant Production
35	Assistant Professor/Fulltime	Animal Reproduction	Dr. Achadiah Rachmawati, S.Pt., M.Si	2041	76	Biotechnology of Animal Reproduction

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
36	Professor/Fulltime	Poultry Nutrition	Prof. Dr. Ir. Osfar Sjojfan, M.Sc., IPU, ASEAN Eng.	2030	152	DevelopmentStrategy of Non-Ruminant Feed and Nutrition
37	Assistant Professor/Fulltime	Socio economic	Eko Nugroho, S.Pt., M.Sc, Ph.D	2045	76	Social Engineering
38	Associate Professor/Fulltime	Milk Technology	Dr. Abdul Manab, S.Pt., MP.	2035	76	Technology of Dairy Industry and By-products Industry
39	Professor/Fulltime	Animal Reproduction	Prof. Dr. Ir. Trinil Susilawati, MS., IPU, ASEAN Eng.	2032	152	Animal Breeding Management

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
40	Assistant Professor/Fulltime	Animal Breeding and Genetics	Dr. Irida Novianti, S.Pt., M.Agr.Sc	2046	76	Animal Reproduction and Molecular Genetics
41	Professor/Fulltime	Animal Breeding and Genetics	Prof. Dr. Ir. Sucik Maylinda, MS.	2026	152	Animal Reproduction and Molecular Genetics
42	Professor/Fulltime	Forage Science	Prof. Dr. Ir. Ifar Subagiyo, M.Agr.St.	2026	152	Development Strategy of Forages
43	Assistant Professor/Fulltime	Milk Technology	Dr. Premy Puspitawati Rahayu, S.Pt., MP.	2055	76	Technology of Dairy Industry and By-products Industry

No	Position + Full time/Part time	Denomination	Name	Expiring of contract	Teaching hours for the study program to be accredited	Further served study program
44	Professor/Fulltime	Ruminant Nutrition	Prof. Dr.Ir. Hendrawan Soetanto, M.Rur.Sc.	2028	152	DevelopmentStrategy of Ruminant Feed and Nutrition
45	Assistant Professor/Fulltime	Poultry Nutrition	Dr. Heli Tistiana, S.Pt., MP.	2039	76	DevelopmentStrategy of Non-Ruminant Feed and Nutrition
46	Associate Professor/Fulltime	Forage Science	Dr. Ir. Hermanto, MP.	2026	76	Development Strategy of Forages

Appendix 1. The Detail Description of Subjects of MPAS

University Compulsory Subjects

1. Research Methodology and Scientific Writing

2-1

PEF80001

Subject Description:

This subject covers how to prepare a research proposal, research report and scientific work in animal science field. The topics consist of preparation of research background, problems identification, determined research objectives and the benefits, hypothesis formulation, literature review development, scientific framework formulation, research operational framework determination, literature study, experimental design determination, data analysis, result and discussion preparation, established a conclusion.

2. Thesis

22

Subject Description:

The publication of scientific articles referred to here is the dissemination of science and technology from the results of thesis research or literature review, which is closely related to the thesis research topic. The task of scientific publication is part of the final thesis assignment that Master of Animal Science students must complete. Master of Animal Science Students are required to publish at least two scientific articles written based on the results of thesis research that has been carried out or one of them based on the results of a literature review that is closely related to their thesis research topic. The article is published in an international/national scientific journal or in an international proceeding in the appropriate scientific field. Articles must have been published or received an acceptance letter from a journal editorial board or proceedings stating that the article will be published without conditions. This assignment can be completed or completed by students as early as the third semester. Master of Animal Science Students are rewarded by credits point for publishing in peer reviewed or Scopus index listed journals.

Study Program Compulsory Subjects

- | | | |
|--------------------------------------------------|------------|----------|
| 1. Sustainable Livestock Industry Systems | 3-0 | - |
|--------------------------------------------------|------------|----------|

Subject Description:

This course explains the sustainable livestock industry system (sustainable livestock industry) as one of the industry's goals, in addition to increasing the production and availability of livestock products, sources of income and profits, animal welfare, and others. It also analyzes problems (gaps) in fulfilling the objectives and formulates alternative solutions.

- | | | |
|-------------------------------------|------------|----------|
| 2. Animal Welfare and Ethics | 2-1 | - |
|-------------------------------------|------------|----------|

Subject Description:

This course discusses various aspects of livestock welfare, including the five freedoms of livestock, methods and indicators for assessing livestock welfare, intrinsic and extrinsic factors that influence livestock welfare (genetics, environment, management, and interactions with humans), ethical theories and principles in various contexts before experiments were carried out on animals and livestock, regulations and legislation related to national and international livestock welfare as well as the application of technology to improve livestock welfare to make livestock living comfortably (friendly animal housing) to make livestock healthy, happy and productive.

- | | | |
|-----------------------------------------------------------|------------|----------|
| 3. Big Data and Meta-Analysis in Animal Production | 3-0 | - |
|-----------------------------------------------------------|------------|----------|

Subject Description:

The Big Data and Meta-Analysis course will discuss the basic concepts of Big data, Machine Learning, Regression Models (RM), PRISMA, SYRCLE, and datasets. The course is a meta-analysis model method that has been created. Model interpretation also requires knowing the influence of each predictor on the predicted results.

4. Artificial Intelligence and Precision Animal Production 3 -

Subject Description:

This subject discusses the application of artificial intelligence in livestock industry and the utilization of big data to solve a problem in livestock industry now and later.

5. Research Design and Data Analysis 2-1 -

Subject Description:

This course explains the sustainable livestock industry system (sustainable livestock industry) as one of the goals of the livestock industry, in addition to the aim of increasing production and availability of livestock products, sources of income and profits, animal welfare, and others as well as analysis of problems (gaps) in fulfill the objectives and formulate alternative solutions.

Department of Animal Production Compulsory Units

1. Animal Production Physiology 3-0 PEP80001

Subject Description:

This subject explains the physiological mechanism of the production process including internal and external factors that support livestock productivity, including; growth and development, physiology of parturition, lactation, egg formation, and environmental adaptation.

2. Technology of Animal Production	3-0	PEP80002
<p>Subject Description:</p> <p>This subject explains the development of livestock production potential by applying technique and innovation to dairy cattle, broilers, poultry and miscellaneous livestock on an industrial level, including breeding and increasing productivity (breeding, feeding, management), molecular technology and evaluation of production based on livestock welfare.</p>		
3. Animal Production Development	3-0	PEP80003
<p>Subject Description:</p> <p>This subject explores livestock management and designs the development of dairy, meat, poultry, and miscellaneous livestock production according to Good Farming Practices (GFP), animal welfare, and regulations.</p>		
Department of Animal Production Elective Units		
1. Industry of Ruminant Production	3-0	PEP80004
<p>Subject Description:</p> <p>This subject describes the development and application of optimal management of the ruminant livestock industry based on good farming practices/good dairy practices and regulations to</p>		

produce quality products with traceability and traceability of supply chains sustainable.

2. Industry of Non-Ruminant Production **3-0** **PEP80005**

Subject Description:

This subject describes the development and application of optimal management of the non-ruminant livestock industry based on good farming practices and regulations to produce quality products with traceability and sustainable supply chains.

3. Animal Waste Management Industry **3-0** **PEP80006**

Subject Description:

This subject discusses livestock industry waste management technology with learning sub-achievements: open management technology (aerobic/air/blowing/added air) and closed management technology (anaerobic/without oxygen) as well as product quality evaluation technology to be marketed/commercialized.

Department of Nutrition and Animal Feed Compulsory Units

1. The Science and Technology of Feed Processing **3-0** **PEN80001**

Subject Description:

This subject discusses feed ingredient processing technology (protection, fermentation, preservation) and feed additive production technology for ruminant, non-ruminant and forage livestock. Furthermore, this subject examines the formulation of non-ruminant and ruminant animal feed.

2. Development of Animal Feed and Nutrition

3-0

PEN80002

Subject Description:

This subject explains the development and function of animal feed nutrition science and technology in a livestock business that can produce livestock products (high productivity and large scale livestock business), ASUH (safe, healthy, intact and halal), friendly and safe for the environment, as well as sustainable to meet/balance the number of requests/needs for livestock products which are continually increasing rapidly. The material discussed mainly focuses on the development of science that underlies the role and function of nutrition and animal feed science and technology in achieving the current and future demands of the livestock business and its products.

3. The Science and Techniques of Feed Evaluation

3-0

PEN80003

Subject Description:

This subject discusses:

1. Various feed evaluation methods have been developed or modified to predict feed quality.
2. Various techniques for evaluating feed and forage ingredients, antinutrients, contaminants and feed biotechnology products physically, chemically and biologically.
3. Quality standards of feed (ISO, KAN, HCCP and Sigma)
4. Evaluation of feed associated with various parameters in research. It is obtaining quality feed that can support the potential for livestock productivity.
5. Interpretation of data from the evaluation of nutrition and its benefits for livestock to support livestock business following the development of science.
6. No more discussing the evaluation procedure technique

Department of Nutrition and Animal Feed Elective Units

1. Development Strategy of Ruminant Feed and Nutrition 3-0 PEN80004

Subject Description:

This subject is a follow-up to the three compulsory subjects for Nutrition and Animal Feed Department that have been given in semester 1, especially those related to ruminants. This subject subject is focused on comprehensive studies in terms of technical aspects and the impact of the application of research results or the results of the application of a strategy/technique to increase the efficiency of feed utilization by livestock both to increase the production of high ruminant livestock, ASUH, friendly and environmentally safe and sustainable, as well as opportunities for their development. Some of these strategies/techniques start from selecting the feed ingredients, processing, formulating and giving them to livestock (precision feeding), including feed additives (rumen fermentation manipulation). This subject material is in the form of reviewing research articles or applying a strategy/technique to increase the efficiency of feed by livestock for the above production purposes.

2. Development Strategy of Non-Ruminant Feed and Nutrition 3-0 PEN80005

Subject Description:

This subject discusses the efforts to improve the quality and effectiveness of feeding non-ruminants, including aspects of supply and quality of local feed raw materials, application of microbial-based feed additive technology, substantive active substances and metabolic substances, feeding strategies related to environmental problems and agricultural locations, increasing nutritional efficiency, through the concept of Nutri biome, meta-analysis studies on aspects of nutrition and non-ruminant animal feed, as well as reviewing non-ruminant feed formulations.

3. Regulation of Livestock Product Industry

3-0

PET80003

Subject Description:

This subject discusses the policies and regulations issued by the government regarding processed livestock products including milk, meat, eggs, honey and leather products. This includes distribution permits, import policies for livestock products from abroad, veterinary control number certification, PIRT/MD/ML licensing, free market policies, halal requirements, packaging requirements and labels.

Department of Livestock Product Technology Elective Units

1. Technology of Meat, Leather and By-product Industry

3-0

PET80004

Subject Description:

This subject aims to improve students' understanding of Meat, Leather and By-products: This subject discusses the industrial development and technology of meat, leather and by-products which are important and strategic commodities from the nutritional aspect, from the preparation of industrial raw materials to proper environmental management. caused by industry. Selection and assessment of raw materials, HACCP on processing, Handling and maintenance of core tools and equipment in the industry, as well as simple testing methods for its products.

2. Technology of Dairy Industry and By-products Industry

3-0

PET80005

Subject Description:

This subject discusses national dairy and international trade, the process of processing milk which is an important and strategic

commodity from the aspect and fulfillment of nutrition for the community in the industry, starting from the preparation of industrial raw materials to the proper handling of by-products and increasing added value.

3. Technology of Egg and Honey

Industry

3-0

PET80006

Subject Description:

The Egg and Honey Industry Technology subject discusses the egg and honey industry which is an important and strategic commodity from the aspect and fulfillment nutrition for people in industry from the preparation of raw materials to the proper handling of the environment caused by the industry.

Department of Livestock Agribusiness Compulsory Units

1. Agribusiness Supply Chain

Management

3-0

PES80001

Subject Description:

This subject aims to improve student skills in aspects of Competitive advantage, understanding the concept of Integrated Supply Chain and Competitive Advantage, Supply Chain Management and Strategic Lead Time Management, Information Technology in Supply Chain Management and integrated corporate systems, the core concept of e-Supply Chain, B-to-B Landscape in e-Supply Chain and Chain, Extraprise Value Network, Strategy of Integrating Two Systems and Collaboration of Information Technology between Companies, Concept of Digital Economy in Supply Chain and Concept of Value Matrix in Virtual Value Chain, shifting from Linear Supply Chain to Networked Supply Chain and Case Study : Supply Chain Management in Industrial Era 4.0 vs New Normal Era.

2. Agribusiness Politics and Policy

3-0

PES80002

Subject Description:

This subject aims to improve student skills through aspects of understanding agribusiness, agribusiness structures, agribusiness development models, agribusiness problems and prospects, and agribusiness policies.

3. Strategic Management of Livestock Agribusiness

3-0

PES80003

Subject Description:

The focus of strategic management has shifted from business policy towards competitive advantage and finally to corporate governance. The direction of strategic management has also been changed from focusing on long-term planning, five force model analysis, strategic advantages, core competencies, and blue ocean strategy, to combining flexible corporate strategies that are suitable for modern environments which are changing rapidly.

The subject material introduces students to the concept of strategic management. Through the strategy design process, students are introduced to the mission, vision and approach to setting strategic goals. Methods for evaluating external factors and competitiveness as well as internal strengths and weaknesses are included (EFE and IFE matrices, Competitiveness matrix and PEST analysis). Different business strategies (expansion, mergers and acquisitions, vertical integration, diversification). Strategy selection and analysis includes the application of SWOT, SPACE, BCG and QSPM matrix. The core objectives of this subject are to understand strategic planning processes, concepts, and tools and be able to apply them to certain business situations, develop knowledge related to the current livestock agribusiness sector, which includes the driving forces of change, industry trends, and industry scope, develop and perfecting analytical, communication and teamwork skills.

Department of Livestock Agribusiness Elective Units

1. Social Engineering

3-0

PES80004

Subject Description:

This subject includes activities to provide students with an understanding in identifying and mapping existing social situations related to the nodes of activities in the livestock sector; then students can work on institutional intervention opportunities for livestock agribusiness development in accordance with agribusiness interests, the dynamics of social change and applicable regulations. Based on the intended objectives, the lectures are given materials: Understanding of social change and social-capital, Production-regime and organization of production, Social-analysis, Sustainable-Livelihoods approach and analysis, Regulations and policies for the development of livestock agribusiness , Land-tenure systems and livestock agribusiness, SDGs in agriculture-livestock, Climate change and smart-agriculture, Concepts of sovereignty and food security, Internet of things (IoT) in agriculture, Social inclusion and gender in agriculture, Agribusiness development with millennial youth , as well as research and development agenda of social institutions in agribusiness.

2. Livestock Business

Communication

2-0

PES80005

Subject Description:

Students are able to apply the concept of business communication in animal husbandry which includes a basic understanding of agricultural development, communication systems, actors in business, communication messages, message delivery methods, media and communication and communication technology in supporting supply chains

3. Agribusiness Risk Management 2-0 PES80006

Subject Description:

This subject aims to improve students' abilities in risk line analysis based on the concept of uncertainty, risk management, understanding individual behavior in dealing with risk, correlating between risk and income, individual behavior in dealing with risk (risk averse, risk taker, risk neutral), identifying and skilled in applying corporate risk management, understanding the types and sources of Agribusiness risks, skilled in decision making and calculating risky income with several methods and able to design risk management strategies.

**Department of Animal Reproduction and Breeding
Compulsory Units**

1. Animal Reproduction Efficiency 2-1 PER80001

Subject Description:

This subject discusses about the strategy produces reproductive efficiency so that it contains knowledge from reproductive physiology and regulation to achieve reproductive efficiency through accelerating puberty. Normal estrus cycle, mating system that produces high success with increased productivity, produces healthy offspring until weaning, and no reproductive disorder occurs

2. Animal Genetic Evaluation and Breeding Program Design 3-0 PER80002

Subject Description:

This subject discusses about the concept of genetic diversity, the concept of inheritance and repetition of traits and their applications, animal genetic quality improvement programs, quantitative genetic models and estimation of variance components, genetic evaluation methods and models, genetic

changes for several traits, increasing selection accuracy, utilization of heterosis and inbreeding pressure in breeding programs, application of software for genetic analysis, molecular genetics in animal breeding, analysis of genetic diversity and population genetics at the molecular level

3. Animal Breeding Management 3-0 PER80003

Subject Description:

This subject discusses about the concept of reproduction and breeding in management to produce animal breeds (factors that affect animal performance, understanding of genetic potential), the mating system includes the application of Artificial Insemination Techniques (AI), embryo transfer, Assisted Reproductive Technology (ATR), assessment of mating success and its calculations using reproductive parameters (NRR, S/C, CR, PR, Calving Interval, calving rate, calf crop and weaning rate), recording and correcting data, selection program on male/female through performance test and progeny test, calculation of population structure and animal development patterns, calculation of the need for breeds and animal supply as well as methods and evaluation of crossbreeding programs to produce breeds.

**Department of Animal Reproduction and Breeding
Elective Units**

**1. Biotechnology of Animal
Reproduction 2-1 PER80004**

Subject Description:

This subject focuses on the potential of animal production development uses technology engineering and its innovation on dairy, meat, poultry and others livestock including breeding, feeding and management, molecular technology and animal production evaluation based on animal welfare.

**2. Ruminant and Non-Ruminant
Breeding**

3-0

PER80005

Subject Description:

This subject discusses about recording system, methods, procedures and preparation of breeding patterns for ruminants (beef cattle, dairy cattle, goats and sheep) and non-ruminants (poultry) to increase animal productivity as well as animal breeding policies and the formation of new breeds in Indonesia and several developed countries.

**3. Animal Reproduction and
Molecular Genetics**

**2-
1**

**PER8
0006**

Subject Description:

This subject discusses about three main aspects in reproductive molecular genetics, namely: (1) the mechanism of expression of reproductive traits (starting from the performance of DNA, RNA, RNA transcription for reproductive traits, non-genetic factors that affect reproductive traits), (2) the main aspects in regulating the expression of reproductive traits in male cattle (spermatogenesis processes, semen production; folliculogenesis, genetics in pregnancy and embryonic growth, reproductive disorders, nutrigenomics and reproduction); and (3) molecular analysis for reproductive traits using electrophoresis PCR, RFLP, SNP, genomic techniques and RNA sequencing