



**IPB University**  
— Bogor Indonesia —

# JOINT SELF ASSESSMENT REPORT 2022



**Study Program of Nutrition and Feed Technology**  
**Study Program of Animal Production Technology**  
**Study Program of Technology and Management of Aquaculture**  
**Study Program of Silviculture**

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# A About the Accreditation Procedure

## General Data

Website of the Higher Education Institution	<a href="https://www.ipb.ac.id/">https://www.ipb.ac.id/</a>
Faculty/Department offering the Degree Programme	<a href="http://intp.fapet.ipb.ac.id/web/">http://intp.fapet.ipb.ac.id/web/</a> <a href="http://iptp.fapet.ipb.ac.id/">http://iptp.fapet.ipb.ac.id/</a> <a href="http://bdp.fpik.ipb.ac.id/">http://bdp.fpik.ipb.ac.id/</a> <a href="http://silvikultur.ipb.ac.id/">http://silvikultur.ipb.ac.id/</a>

## Seals applied for

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for <sup>1</sup>	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)
Nutrisi dan Teknologi Pakan	Nutrition and Feed Technology	ASIIN	<u>AUN, 13 April 2014</u> – <u>12 April 2018</u>	
Ilmu Produksi dan Teknologi Peternakan	Animal Production and Technology	ASIIN	<u>AUN, 13 April 2014</u> – <u>12 April 2018</u>	
Teknologi dan Manajemen Perikanan Budidaya	Technology and Management of Aquaculture	ASIIN	<u>AUN, 3 May 2013</u> – <u>2 May 2017</u>	
Silvikultur	Silviculture	ASIIN	<u>AUN, 16 February 2015 - 15 February 2019</u>	

## B Characteristics of the Degree Programme(s)

Name	Final degree (original/English translation)	Areas of Specialisation	Corresponding level of the EQF <sup>2</sup>	Mode of Study	Double/Joint Degree	Duration	Credit points/unit	First time of offer
Nutrition and Feed Technology	Sarjana Peternakan (S.Pt)/Bachelor of Science in Animal Science	Nutrition and Feed Technology	Level 6	Full time	N/A	8 semesters	230.40 ECTS	1 September 2005
Animal Production and Technology	Sarjana Peternakan (S.Pt)/Bachelor of Science in Animal Science	Animal Production	Level 6	Full time	N/A	8 semesters	230.40 ECTS	1 September 2005
Technology and Management of Aquaculture	Sarjana Perikanan (S.Pi)/Bachelor of Science in Fisheries	Aquaculture	Level 6	Full time	N/A	8 semester	230.40 ECTS	1 September 2005
Silviculture	Sarjana Kehutanan (S.Hut)/ Bachelor of Science in Forestry (BSc.F)	Silviculture	Level 6	Full time	N/A	8 semester	230.40 ECTS	1 September 2005

<b>Name</b>	<b>Intake rhythm</b>	<b>Intake Capacity per cohort</b>	<b>Average starting cohort size</b>	<b>Average number of graduates per cohort</b>	<b>Average time required to complete studies</b>
Nutrition and Feed Technology	Annually	Max. 125 students	120 students	89 students	8.5 semesters / 4.2 years
Animal Production and Technology	Anually	Max 105 students	99 students	93 Students	8.6 semesters / 4.3 years
Technology and Management of Aquaculture	Annually	Max. 120 students	111 Students	88 Students	8.9 semesters / 4.5 years
Silviculture	Annually	Max. 90 students	83 Students	75 Students	8.4 semesters / 4.2 years

## C Self-assessment for the ASIIN-Seal

### 1. The Degree Programme: Concept, content & implementation

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

Department of Nutrition and Feed Technology, Department of Animal Production Technology, Department of Technology and Management of Aquaculture, and Department of Silviculture are among departments in IPB University that conducted the Bachelor degree program and postgraduate degree programs (Master degree and Doctoral degree). The Nutrition and Feed Technology (**NFT**) is a bachelor of science degree program (B.Sc Degree Program) in Department of Nutrition and Feed Technology while Animal Production Technology (**APT**) in Department of Animal Production Technology. Both departments are under Faculty of Animal Science. The Technology and Management of Aquaculture (**TMA**) is a B.Sc Degree Program in Department of Technology and Management of Aquaculture, Faculty of Fisheries and Marine Sciences. Silviculture (**SVC**) is a B.Sc Degree Program in Department of Silviculture, Faculty of Forestry and Environment. All of the B.Sc Degree Programs have been continuously accredited “A” by National Accreditation Agency (BAN PT). In addition, all of the degree programs has been certified by Asean University Network Quality Assessment (AUN QA) with total score 4.93, 4.20, 4.00 and 4.00 for NFT (2014-2018), APT (2014-2018), TMA (2013-2017), and SVC (2015-2019), respectively.

The objectives and learning outcomes (LOs) of NFT and APT are arranged in line with the vision and mission of IPB University and the Faculty of Animal Science. The vision and mission of IPB University are presented in the Statuta IPB 2013, whereas the vision and mission of the Faculty of Animal Science of IPB are presented in the Faculty Strategic Plan, while the vision and mission of NFT and APT stated in their respective strategic plan. The objectives and LOs of TMA are composed of the vision, mission, objectives, and mandates of the Department of Aquaculture, the Faculty of Fisheries and Marine Sciences and IPB University, while LOs of the SVC are formulated by considering the Vision and Mission of IPB University and Faculty of Forestry and Environment, as well as the Department of Silviculture.

All of the bachelor of science degree programs formulated their strategic objectives and LOs to implement the vision and missions. Setting objectives and learning outcomes involves Faculty members, Staff members, alumni and users. The processes were carried out through regular lecturers’ and special forums (workshops) inviting faculty leaders, lecturers and staff, alumni and graduate users, and all stakeholders. Efforts to disseminate and socialize the objectives and learning outcomes of the degree program for the Faculty

members, students, and all of the stakeholders are conducted through various mechanisms as follows: 1) Regular Wednesday meetings for all Faculty members that are held on the first and third weeks of each month, and 2) Website of each of degree program (<http://intp.fapet.ipb.ac.id/> for NFT; <http://iptp.fapet.ipb.ac.id/> for APT; <http://bdp.fpik.ipb.ac.id/> for TMA, and <http://silvikultur.ipb.ac.id/> for SVC.

**The objectives** of the bachelor of science degree programs are described in Box 1.1.1 below:

Box 1.1.1 Strategic objectives of the the bachelor of science degree programs

**Objectives of NFT**

- Obj#1-NFT To produce qualified graduates who capable of competing in global market through continuous improvement of knowledge and skills
- Obj#2-NFT To produce high quality research in field of nutrition science and technology of tropical feed especially in utilization of local resources
- Obj#3-NFT To serve the community and government in solving problems related to nutritional science and feed technology

**Objectives of APT**

- Obj#1-APT To organize creative and innovative educational programs that are able to adopt technological developments
- Obj#2-APT To create an academic atmosphere that supports the production of animal science graduates who are competent, professional, and have an entrepreneurial spirit in the field of animal production and animal product technology, and are able to compete at national and international levels.
- Obj#3-APT To implement a curriculum that includes the principles of animal welfare, safety of animal products, sustainability of genetic resources and the environment.
- Obj#4-APT To implement research in the field of animal production and animal product technology by taking into account the animal welfare, safety of animal origin products, preservation of genetic resources and the environment.
- Obj#5-APT To conduct community service in the field of animal production and animal product technology at regional and national levels.



**Objectives of TMA**

- Obj#1-TMA Development and dissemination scientific principles and technology in freshwater, brackish-water, and marine-water aquaculture industries
- Obj#2-TMA Management of freshwater, brackish-water, and marine-water aquaculture industries and related sub-systems
- Obj#3-TMA Application of sustainability and ecological approach in aquaculture industries

**Objectives of SVC**

- Obj#1-SVC To produce qualified graduates who are capable in developing and applying science, technology, and the art of silviculture
- Obj#2-SVC To produce eco-friendly innovations of science, technology and art in tropical silviculture to support national development and human welfare
- Obj#3-SVC To become the proactive and anticipative degree program to overcome the community issues and the development obstacles that are changing fast at the national and international level
- Obj#4-SVC To become a degree program that strengthens moral on technology innovation and intellectual property of civil society

The LOs are formulated based on inputs and the need of stakeholders, involving academic staff, students, alumni, users, and supporting staff of the Department and other Departments of the Faculty, and senior alumni who work in different professions. Formulating the learning outcomes has been a comprehensive evaluation to produce highly competent graduates. Several steps have been conducted to formulate the LOs: (1) gathering stakeholder needs through tracer study and having a group discussion between lecturers, students, and people who are in charge of the administration of the degree program (head of the department, head of the degree program, etc.); alumni, users, and professional society, (2) formulating of learning outcomes based on the tracer study and input from users, (3) socializing the result of the learning outcomes as to gain input from the academic staffs, (4) discussing with the professor and head of divisions to finalize the learning outcomes, and (5) conducting workshop among the academic staffs, alumni and labor markets to establish the learning outcomes.

Decision-making process of learning objectives of the graduates also considered the future professions of the next 5-10 years, K-2020 structure, the Indonesian National Standard of Higher Education (Research, Technology and Higher Education- RTHE Minister Regulation No. 44/2015, Jo RTHE Minister Decree No. 50/2018, Indonesia National Qualification Scheme, KKNI (President of Republic of Indonesia Regulation No. 8/2012 and Man Power Minister Regulation No. 21/2014), National Accreditation Board for Higher Education (BAN-PT) standard, The defined LOc for graduates was approved by teaching staff which is expressed by Rector's decree No. 291/IT3/DT/2018 on Guidance for Bachelor

Degree Program IPB University edition 2018). All of the study programs implemented the K-2014 curriculum structure until Academic year 1999/2000. The K2020 curriculum started from Academic Year 2000/2001, as a result of curriculum evaluation.

Learning outcomes were also published in the website of the degree programs, leaflets, and brochures. The arrangement of the LOs is presented in **Figure 1.1.1**

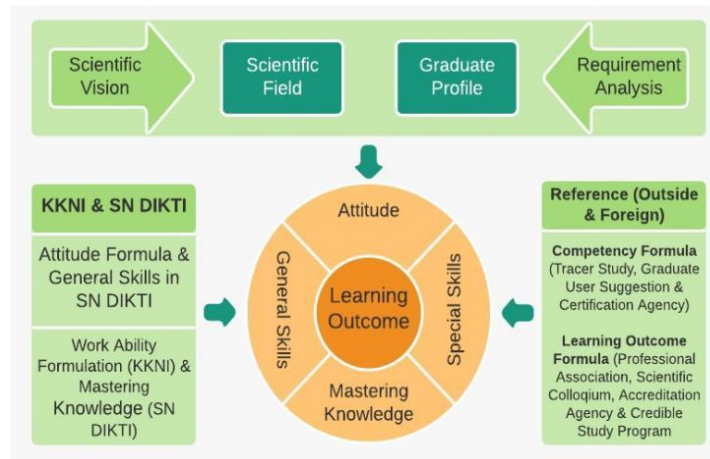


Figure 1.1.1 Design Mechanism Scheme of Learning Outcomes of the degree programs

The LOs have been developed in line with the Program Objectives of the degree programs. A list of the LOs of each degree program is presented in Box 1.1.2, while the correlation between Program Objectives and Learning Outcomes is shown in Tables 1.1.1 – 1.1.4.

**Box 1.1.2 Learning outcomes (LOs) of each degree program**

<b>LOs of NFT</b>	
LO#1-NFT	Able to explain tropical potential feedstuffs and forage as well as to apply feed technology as to improve feed quality and feed efficiency
LO#2-NFT	Able to establish/construct pasture area, and to produce forage based on available potential areas
LO#3-NFT	Able to explain the functions, utilizations, and metabolism of nutrients as well as nutrition engineering for efficient animal production with less polluted/healthy environment
LO#4-NFT	Able to apply feed production technology and feeding system as to produce wholesome and high quality and efficient animal products
LO#5-NFT	Able to formulate animal diet/feed, to design feed production, and to control feed quality in the feed industries
LO#6-NFT	Able to solve problems in the field of nutrition and feed technology through data analysis, and to interpret the result using scientific appropriate methods

LO#7-NFT	Able to communicate with colleagues, think analytically/critical thinking, creative, and innovative in their duties/tasks
LO#8-NFT	Able to take responsibility, to lead in group(s) as well as in individual, have flexibility and sustainability
LO#9-NFT	Able to use data, facts, ideas, for problem solving with ethical profession and allow “life-long learning” in accordance with the development in science and technology
<b>LOs of APT</b>	
LO#1-APT	Capable to explain and describe basic knowledge of animal science.
LO#2-APT	Capable to analyze animal and animal product characteristics.
LO#3-APT	Capable to organize and examine production technology within Good Farming Practices.
LO#4-APT	Capable to identify and differentiate processing of animal products in accordance with Good Manufacturing Practices.
LO#5-APT	Capable to explain and identify logistic management in the animal distribution process.
LO#6-APT	Capable to implement technology and management of animal production.
LO#7-APT	Capable to design and develop entrepreneurship in the animal production field.
LO#8-APT	Capable to execute techniques of animal product processing.
LO#9-APT	Capable to operate research for problem-solving in the animal husbandry field based on the data and information.
LO#10-APT	Capable to lead, manage and collaborate in teamwork, in addition, capable to work with professional, autonomous, critical, analytical, creative, and innovative.
LO#11-APT	Capable to communicate effectively both verbal and nonverbal, norm and ethics implementation, utilize the information to develop self-potency, also capable to adapt in the alteration of science and technology.
LO#12-APT	Capable to compile and formulate animal husbandry policy.
LO#13-APT	Capable to communicate and disseminate innovation on animal husbandry for farmers.
<b>LOs of TMA</b>	
LO#1-TMA	Ability to culture various finfish, shellfish, and aquatic plant species (marinewater brackishwater and freshwater)
LO#2-TMA	Ability to perform breeding of various fish and shellfish species (marinewater, brackishwater and freshwater)
LO#3-TMA	Ability to formulate feed for artificial feed production in aquaculture
LO#4-TMA	Ability to produce phytoplankton, zooplankton and benthos, both as live food and as industrial raw materials
LO#5-TMA	Ability to apply good aquaculture practices

LO#6-TMA	Ability to identify disease agent, diagnose treat diseased fish
LO#7-TMA	Ability to perform laboratory activities that are related to aquaculture (in fish reproduction and genetics, fish nutrition, aquaculture environment, fish health and production systems) and interpret the analytical results
LO#8-TMA	Ability to measure and manage the quality of aquaculture media
LO#9-TMA	Ability to perform planning and designing of aquaculture containers (including size, shape and layout)
LO#10-TMA	Ability to operate and manage hatchery production, grow out production, harvesting and marketing of aquaculture products
LO#11-TMA	Ability to evaluate the growth and health status of the cultured species
LO#12-TMA	Ability to evaluate the benefit and risk of aquaculture activities
LO#13-TMA	Ability to interpret data and to provide various alternative solutions
LO#14-TMA	Ability to demonstrate the scope of knowledge and technology application in fisheries business
LO#15-TMA	Ability to clearly deliver information regarding aquaculture to the society
LO#16-TMA	Ability to operate aquaculture activities as business activities
LO#17-TMA	Ability to collaborate and to adapt to their environmental condition, to act communicatively, innovative, and entrepreneurial

#### **LOs of SVC**

LO#1-SVC	Be devoted to God Almighty, have noble character, national insight, and integrity, have the motivation continuously to develop themselves, be disciplined, and be responsible
LO#2-SVC	Have a strong leadership, able to work well in teams in the national and international scope; able to think logically and systematically, communicate effectively both orally and in writing, always follow the development of science and technology, and be able to adapt to environmental changes.
LO#3-SVC	Able to analyze problems and formulate alternative solutions for tropical Silviculture in general and specifically for the silviculture field, based on data and information analysis using relevant mathematical, statistical, biological, physical, and chemical theories and approaches, forest engineering, forestry economics, and policies, utilization, senses, forest product management, and conservation of living natural resources, and environmental ethics
LO#4-SVC	Able to produce high-quality seeds, seeds, and trees in terms of genetic, physiological, and physical through conventional or biotechnological approaches
LO#5-SVC	Able to design appropriate models and techniques for building, managing, monitoring, and evaluating seedbeds, planting, maintaining, protecting, and harvesting in various silvicultural systems
LO#6-SVC	Able to examine and analyze the influence of the physical environment, nutrient cycle, and energy cycle, including hydrology and climate, for the success of ecosystem-based Silviculture

LO#7-SVC	Able to integrate science and technology in the field of silviculture, including forest productivity, silvicultural systems, agroforestry, ecological fields including dendrology, forest ecology, forest syn-ecology, tropical tree ecology, and forest protection including management of pests, diseases and forest fires with forest and environmental dynamics to increase the quality and productivity of natural and plantation forests for the achievement of sustainable forest and environmental management
LO#8-SVC	Able to synergize the latest silvicultural science, art, and technology based on local wisdom in the implementation, monitoring, and evaluation of Silviculture activities, including agroforestry and restoration and rehabilitation of degraded land to ensure the achievement of desired values and goals with the principle of ecosystem-based sustainability for the welfare of the community
LO#9-SVC	Able to apply fundamental science and applied silviculture based on the principles of scientific research and writing

The LOs are designed to fulfil the requirements of Undergraduate Education Program Competency Standards based on Indonesian Qualification Framework/IQF (*Kerangka Kualifikasi Nasional Indonesia* (KKNI)) in accordance with educational policy in Indonesia. KKNI is a manifestation of the identity and quality characteristics of Indonesia related to the Indonesian system for education and training. KKNI is the National standard for Higher Education that was required in the education system, so that it can be adjusted to create excellent graduates that are ready to work according to the perspective stakeholder needs analysis.

Competency of undergraduates of the degree programs are formulated on the basis of Indonesian National Qualification Framework which comprise of three pillars, those are: (1) Ability in employment/job opportunities (2) Working scope on the basis of knowledge being mastered, and (3) Managerial ability, which is subsequently manifested in nine SSP's learning outcomes (LO). Based on the aforementioned policy, bachelor degree program in Indonesia should possess level 6 IQF competency which consist of (1) ability to apply their designated expertise by utilizing science and technology in their respective fields to solve relevant problems and adapt to changing environments (2) Ability to master theoretical concepts in their respected field of knowledge and thoroughly understand their specific field of knowledge in order to formulate specific problem solving method (3) Ability to make an appropriate decision/ guidance to decide on alternative option through adequate data and information analysis (4) Possess a sense of responsibility when working as an individuals or as a team. The relationship between Program objectives and LOs based on KKNI are presented in Tables 1.1.1, 1.1.2, 1.1.3, and 1.1.4. From the matrices we can learn that most of the learning outcome of the bacheleor degree programs has high correlation

with the objectives of the degree program, indicates that the LOs strongly support the achievement of the graduated competencies as stated in the objectives.

Table 1.1.1 Matrix Correlation of Program Objectives and Learning Outcomes of NFT

Program Objectives	Learning Outcomes								
	1	2	3	4	5	6	7	8	9
Obj#1-NFT	H	H	H	H	H	H	H	H	H
Obj#2-NFT.	H	H	H	H	H	H	H	H	H
Obj#3-NFT	M	M	M	H	H	H	H	H	H

Note: H: High Correlation; M: Medium Correlation; L: Low Correlation

Table 1.1.2 Matrix Correlation of Program Objectives and Learning Outcomes of APT

Program Objectives	Learning Outcomes												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Obj#1-APT	H	H	H	H	H	H	H	H	H	M	M	M	M
Obj#2-APT	H	H	H	H	H	H	H	H	H	H	H	H	H
Obj#3-APT	H	H	H	H	H	H	H	H	H	M	M	M	M
Obj#4-APT	H	H	H	H	H	H	M	H	H	H	H	M	M
Obj#5-APT	H	H	H	H	H	H	M	H	M	H	H	M	H

Note: H: High Correlation; M: Medium Correlation; L: Low Correlation

Table 1.1.3 Matrix Correlation of Program Objectives and Learning Outcomes of TMA

Program Objectives	Learning outcomes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Obj#1-TMA	H	H	H	H	M	H	H	M	M	M	M	M	H	H	H	M	H
Obj#2-TMA	H	H	M	M	H	M	M	H	H	H	H	H	M	M	M	H	M
Obj#3-TMA	M	M	M	M	H	M	M	M	M	M	M	M	M	M	M	M	H

Note: H: High Correlation; M: Medium Correlation; L: Low Correlation

Table 1.1.4 Matrix Correlation of Program Objectives and Learning Outcomes of SVC

Program Objectives	Learning Outcomes								
	1	2	3	4	5	6	7	8	9
Obj#1-SVC	M	M	H	H	H	H	H	H	M
Obj#2-SVC	M	H	H	H	H	M	H	H	H
Obj#3-SVC	M	M	H	H	H	H	H	H	H
Obj#4-SVC	H	H	H	H	H	H	H	H	H

Note: H: High Correlation; M: Medium Correlation; L: Low Correlation

Competency of undergraduates of the degree programs are formulated on the basis of Indonesian National Qualification Framework (IQF) which comprise of three pillars, those

are: (1) Ability in employment/job opportunities (2) Working scope on the basis of knowledge being mastered, and (3) Managerial ability, which is subsequently manifested in nine SSP's learning outcomes (LO). Based on the aforementioned policy, bachelor degree program in Indonesia should possess level 6 IQF competency which consist of (1) ability to apply their designated expertise by utilizing science and technology in their respective fields to solve relevant problems and adapt to changing environments (2) Ability to master theoretical concepts in their respected field of knowledge and thoroughly understand their specific field of knowledge in order to formulate specific problem solving method (3) Ability to make an appropriate decision/guidance to decide on alternative option through adequate data and information analysis (4) Possess a sense of responsibility when working as an individuals or as a team. The relationship between Program objectives and LOs based on KKNi are presented in Table 1.1.5.

Table 1.1.5 Learning outcomes of the degree programs compared to the competencies defined by KKNi (National Qualification Framework)

Scope of KKNi	KKNi level 6 competency	Learning outcomes of program studies			
		NFT	APT	TMA	SVC
<b>Capability of the workforce</b>	Able to master theoretical concepts in their respected field of knowledge and thoroughly understand their specific field of knowledge to formulate specific problem-solving method	LO#1-NFT LO#2-NFT LO#3-NFT	LO#1-APT LO#2-APT LO#3-APT LO#4-APT LO#5-APT	LO#1-TMA LO#7-TMA LO#14-TMA LO#16-TMA	LO#3-SVC LO#4-SVC LO#5-SVC LO#6-SVC
<b>Science and technology proficiency</b>	Able to apply their designated expertise by utilizing the science and technology in their respective fields to solve relevant problems and adapt to changing environments.	LO#4-NFT LO#5-NFT LO#6-NFT	LO#6-APT LO#7-APT LO#8-APT LO#9-APT	LO#2-APT LO#3-APT LO#4-APT LO#6-APT LO#8-APT	LO#7-SVC LO#8-SVC LO#9-SVC
<b>Managerial proficiency</b>	Able to make an appropriate decision/guidance to decide on alternative option through adequate data and information analysis Possess a sense of responsibility when working as an individual or as a team	LO#7-NFT LO#8-NFT LO#9-NFT	LO#10-APT LO#11-APT LO#12-APT LO#13-APT	LO#5-APT LO#9-APT LO#10-APT LO#11-APT LO#12-APT LO#13-APT LO#15-APT LO#17-APT	LO#1-SVC LO#2-SVC

\*KKNi = Indonesia National Qualification Framework

The learning outcomes of the program studies mostly matches and in line the criteria of the Subject-Specific Criteria (SSC) for Agriculture, nutritional sciences, and landscape

architecture (ASIIN-SSC\_08), except for the subject of “medical science”. The subject of medical science is not stated in LOc explicitly. However, this subject is given to the students in order to prepare lectures before conducting fieldwork. [Evaluation of interrelated LOs and ASIIN-SSC 08](#) will also be future benchmark for development of the future curriculum of the degree programs.

Each course in each degree program has PLO as an implementation from and support of LO. Matrix of the relation between PLO and courses at the [NFT](#), [APT](#), [TMA](#) and [SVC](#) are presented in **Table 1.1.6**, **Table 1.1.7**, **Table 1.1.8**, and **Table 1.1.9**, respectively. The course structure provides an opportunity for students to obtain PLO degree program through teaching-learning process and examination. The balance of general and specific subjects facilitates students in receiving material education, either through lectures or practices. The courses hierarchy in each semester also shows its depth which covers the different core of knowledge from the general knowledge to basic knowledge of nutrition and feed technology as well as specialized knowledge. Learning process and achievement of PLO/LO are monitored by quality assurance unit supervised by the Head of Department and Dean of the Faculty.



Table 1.1.6 Matrix of expected learning outcomes and courses at the NFT

Code of Courses	Course Name	Expected Learning Outcomes								
		PLO1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
IPB100	Religion							→	→	→
IPB105	Pancasila and Nationality Education								→	→
IPB106	Indonesian							→	→	→
IPB107	Introduction of Agricultural Science							→		
IPB108	English							→		
IPB109	Sports and Arts*								→	
MAT100	Fundamental Mathematics					→	→			→
KIM101	Chemistry			→			→		→	→
BIO100	Biology			→			→		→	→
FIS100	Physics						→		→	→
EKO100	General Economy					→	→		→	→
KPM103	General Sociology						→		→	→
AGB100	Entrepreneurship						→	→	→	→
STK211	Method of Statistics						→	→		→
GFM221	Climatology	→	→	→						

Code of Courses	Course Name	Expected Learning Outcomes								
		PLO1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
AGB221	Entrepreneurship							→	→	→
PTP311	Technology of Dairy Production			→	→		→	→	→	→
PTP321	Technology of Meat Animal Production			→	→		→	→	→	→
PTP331	Technology of Poultry Production			→	→		→	→	→	→
IPT341	Animal Genetics			→	→		→	→	→	→
FKH301	Management of Tropical Animal Health			→	→		→		→	→
KRP331	Reproduction Science and Technology						→		→	→
NTP211	Feedstuffs	→					→	→	→	→
NTP222	Nutrition Physiology			→	→		→		→	→
NTP231	Principle to Animal Nutrition	→		→	→		→		→	→
NTP241	Principle to Pasture Management	→	→				→	→	→	→
NTP221	Nutrition Biochemistry			→			→		→	→
NTP323	Nutrition Microbiology			→	→		→		→	→
NTP332	Poultry Nutrition	→		→	→	→	→	→	→	→
NTP333	Dairy Nutrition	→	→	→	→	→	→	→	→	→
NTP334	Meat Animal Nutrition	→	→	→	→	→	→	→	→	→

Code of Courses	Course Name	Expected Learning Outcomes								
		PLO1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
NTP435	Draught and Sport Animal Nutrition	→	→		→	→	→	→	→	→
NTP436	Feed FormulationTechnique	→		→		→	→		→	→
NTP337	Research Methodology and Experimental Design						→	→	→	→
NTP342	Pasture Management	→	→				→	→	→	→
NTP312	Feed Processing Technology	→			→		→	→	→	→
NTP313	Feed Industry	→				→	→	→	→	→
NTP415	Feed Policy and Quality Control	→		→	→	→	→	→	→	→
NTP443	Forage Planning and Providing		→				→	→	→	→
NTP414	Feedmill Management					→	→	→	→	→
NTP224	Pasture Ecology	→			→			→	→	→
NTP438	Nutrition of Various Animal			→			→	→	→	→
NTP392	Laboratory Technique of Nutrition and Feed			→			→	→	→	→
NTP497	Field Work				→	→	→	→	→	→
NTP391	Technology Application of Nutrition and Feed	→	→	→	→	→	→	→	→	→
NTP345	Introduction to Feed Plant Physiology	→			→			→	→	→
NTP498	Seminar						→	→	→	→

Code of Courses	Course Name	Expected Learning Outcomes								
		PLO1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
NTP499	Thesis			→			→	→	→	→

→ Applied

Table 1.1.7 Matrix of expected learning outcomes and courses of APT

Courses Code	Course Name	Expected Learning Outcomes												
		1	2	3	4	5	6	7	8	9	10	11	12	13
PTP 101	Introduction of Animal Husbandry	→	→								→			
PTP 201	Behaviour and Animal Welfare	→	→	→		→	→							
PTP 211	Dairy Production Technology	→		→			→				→			
PTP 321	Large Ruminat Production		→	→	→			→			→			
PTP 222	Pig and Horse Production		→	→			→				→			
PTP 231	Commercial Poultry Production		→	→			→		→		→			
PTP 341	Animal Genetics	→	→				→							
PTP 321	Prospective Animal Production		→	→			→				→			
PTP 331	Laying Production			→	→		→				→			
PTP 401	Slaughter House management			→		→	→	→	→		→			→
PTP 305	Environmental Management of Animal Science			→			→				→			

Courses Code	Course Name	Expected Learning Outcomes												
		1	2	3	4	5	6	7	8	9	10	11	12	13
FPT 401	Community Internship									→		→	→	→
PTP 353	Egg and Poultry Meat Processing Technique		→	→	→					→				
PTP 322	Small Ruminants Production			→			→				→			
PTP 341	Animal Breeding	→	→	→			→			→				
PTP 301	Building and Equipment of Animal Science			→			→	→			→			
PTP 355	Handling and Processing Animal by Product			→	→		→		→		→			
PTP 351	Milk Processing Technique			→	→		→		→		→			
FPT 407	Business Management of Animal Husbandry	→					→	→		→	→			→
PTP 302	Research Method and Experimental Design									→				→
PTP 353	Animal Waste Management		→	→	→		→	→	→		→			
PTP 305	Internship (PKL)			→			→	→		→				
PTP 354	Extension and Communication of Animal Science			→			→	→						
PTP 401	Undergraduate Thesis					→	→	→	→		→			
PTP 492	Seminar	→	→	→	→	→	→	→	→	→				→
FPT 301	Animal Logistic	→								→			→	→
PTP 493	Introduction of Animal Husbandry	→	→	→	→	→	→	→	→	→	→	→	→	→

Courses Code	Course Name	Expected Learning Outcomes															
		1	2	3	4	5	6	7	8	9	10	11	12	13			
PTP 491	Behaviour and Animal Welfare												→		→	→	→
FPT 406	Dairy Production Technology			→		→		→		→	→						
FPT 407	Large Ruminant Production	→		→				→		→	→						→

→ Applied

Table 1.1.8 Matrix of expected learning outcomes and courses of TMA

Course Code	Course Name	Expected Learning Outcomes																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
FPK 101	Introduction to Fisheries and Marine Science	→																→			
MSP223	Ichthyology	→					→	→													
ITK221	General Oceanography	→						→													
MSP225	Physiology of Aquatic Organism	→	→								→										
ITK221	Marine Biology	→					→	→													
THP200	Basic Fish Processing Technology							→			→							→			
MAN111	Introduction to Management													→							→

Course Code	Course Name	Expected Learning Outcomes																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
BIK200	General Biochemistry							→										
STK211	Statistics													→				
BDP200	Fundamental of Aquaculture	→				→						→	→					
BDP240	Fundamental of Aquatic microbiology					→	→	→										
BDP414	Technopreneurship in Aquaculture										→					→	→	→
BDP220	Fundamental of Fish Genetics		→					→										
BDP230	Fish Nutrition			→	→			→										
BDP250	Water Physics and Chemistry				→	→		→	→									
BDP339	Scientific Research Methods								→					→				
BDP301	Principles of Aquaculture Biotechnology								→						→			
BDP321	Reproductive Physiology of Aquatic Organisms			→							→							
BDP331	Feed Processing and Feeding Technology			→		→					→	→						
BDP341	Diseases of Aquatic Organisms					→	→											
BDP351	Water Quality Management					→			→									
BDP352	Aquacultural Engineering					→				→								

Course Code	Course Name	Expected Learning Outcomes																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
BDP302	Ornamental Fish and Aquascape	→				→												
BDP332	Production Technology of Plankton, Benthos and Algae				→	→												
BDP342	Health Management of Aquaculture Organisms					→	→					→						
BDP422	Fish Hatchery Management	→	→			→				→	→	→						
BDP400	System and Management of Aquaculture Quality	→				→				→		→			→			
BDP411	Mariculture Management	→				→					→	→						
BDP412	Freshwater Aquaculture Management	→				→					→	→						
BDP413	Aquaculture Industrial Planning	→				→					→							
BDP497	Aquaculture Field Practice	→				→									→			
BDP498	Seminar													→		→		
BDP499	Final Project													→				
FPK301	Fisheries and Marine Entrepreneurship														→		→	
FPK302	Identity of Fisheries and Marine Science Graduate																	→



Course Code	Course Name	Expected Learning Outcomes																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
KPM210	Basic Communication																	→		→	
PSP335	Underwater Observation Methods																	→			
MSP312	Water Pollution and Bioindicator					→								→							
MSP314	Aquatic Macrophytes and Macroalgae Science	→																			
PSP302	Marine and Fisheries Laws																			→	
ITK233	Basic Marine Instrumentation																	→			
KPM130	Business Communication																		→		→
MSP317	Aquatic Environmental Impact Analyses																	→			

→ Applied

Table 1.1.9 Matrix of expected learning outcomes and courses of SVC

Course Code	Course Code	SVC Learning Outcomes								
		1	2	3	4	5	6	7	8	9
IPB100-104 or IPB 110	<u>Religion Education</u>	→	→							
IPB106	<u>Bahasa Indonesia (Indonesian Language)</u>	→	→							→
IPB107	<u>Introduction to Agricultural Sciences</u>			→			→			
MAT101	<u>Basic Mathematics</u>			→						
KIM101	<u>Chemistry</u>			→		→				
BIO100	<u>Biology</u>			→	→	→				
EKO100	<u>General Economics</u>			→		→				
IPB111	<u>Civics Education</u>	→	→							
IPB108	<u>English</u>		→						→	→
IPB112	<u>Sports and Arts *)</u>		→							
FIS100	<u>Physics</u>			→	→					
KPM130	<u>General Sociology</u>		→						→	
AGB100	<u>Introductory of Entrepreneurships</u>	→	→							
MNH201	<u>Introduction to Forest Science and Environmental Etics</u>	→		→						
KSH201	<u>Living Resources Conservation</u>			→						
STK211	<u>Statistics</u>		→	→						→
HHT201	<u>Forest Products as Raw Materials</u>		→	→					→	

Course Code	Course Code	SVC Learning Outcomes								
		1	2	3	4	5	6	7	8	9
HHT202	<u>Forest Products Processing</u>	→		→		→			→	
TSL202	<u>Introduction to Soil Science</u>	→	→	→			→		→	
GFM221	<u>Climatology</u>	→		→			→		→	
SVK211	<u>Dendrology</u>	→	→					→	→	→
SVK222	<u>Silvics</u>	→	→	→	→		→			→
SVK214	<u>Basics of Tree Physiology</u>	→	→	→	→		→			→
SVK233	<u>Forest Microbiology</u>	→	→	→	→		→	→		→
MNH212	<u>Forest Resource Inventory</u>	→	→	→		→			→	
STK222	<u>Design of Experiment</u>	→		→						→
MNH315	<u>Geomatics and Forestry Sensing</u>	→	→	→		→				
SVK212	<u>Forest Ecology</u>	→	→	→			→	→	→	→
SVK232	<u>Forest Protection</u>	→	→	→		→		→	→	→
SVK317	<u>Forest Nutrition Management</u>	→		→	→		→	→	→	→
SVK322	<u>Silviculture</u>	→	→	→			→	→	→	→
SVK213	<u>Forest Soil Science</u>	→			→		→		→	→
SVK223	<u>Plantation Forest Silviculture</u>	→		→	→	→	→		→	→
FHT100	<u>General Forestry Practice</u>	→	→	→		→		→	→	→
MNH331	<u>Forest Harvesting</u>	→	→	→		→				→

Course Code	Course Code	SVC Learning Outcomes								
		1	2	3	4	5	6	7	8	9
SVK313	<u>Forest Syn-Ecology</u>	→		→			→	→		
SVK315	<u>Forest Influence</u>	→	→	→			→			→
SVK323	<u>Forest Genetics</u>	→	→	→	→					→
SVK332	<u>Forest Pest Science</u>	→	→	→		→		→		→
SVK326	<u>Forest Seed Technology</u>	→	→	→	→					→
SVK318	<u>Basics of Post-Mining Land Reclamation and Forest Restoration</u>	→	→	→			→		→	→
SVK312	<u>Growth Site Quality</u>	→	→	→			→			→
MNH314	<u>Forest Management</u>	→	→	→			→			→
MNH327	<u>Forest Management Economics</u>	→		→	→					
SVK314	<u>Tropical Forest Species Ecology</u>	→		→				→		
SVK324	<u>Tree Improvement</u>	→			→	→		→	→	
SVK325	<u>Forest Tree Propagation Technology</u>	→	→	→	→	→				→
SVK333	<u>Forest Pathology</u>	→	→	→		→		→		→
SVK335	<u>Forest and Land Fire</u>	→	→	→		→	→	→		→
SVK298	<u>Research Methods and Scientific Writing</u>	→	→	→						→
SVK497	<u>Internship</u>	→	→	→	→					→
SVK311	<u>Soil and Water Conservation in Forest Utilization</u>	→	→	→			→			→
SVK428	<u>Natural Forest Silviculture</u>	→	→	→		→				

Course Code	Course Code	SVC Learning Outcomes								
		1	2	3	4	5	6	7	8	9
SVK427	<u>Agroforestry</u>	→	→	→				→	→	
SVK431	<u>Integrated Forest Pest and Disease Management</u>	→	→			→		→		
SVK429	Plantation Forest Development Planning	→	→							
SVK436	Forest Health Monitoring	→	→			→		→		
SVK432	Forest and Land Fire Control Management	→	→			→		→		
SVK498	Seminar	→	→							→
SVK499	Undergraduate Thesis	→	→							→

→ Applied

The LOs of the degree programs have been able to fulfill market demand for specific labor in nutrition and feed technology and animal husbandry in general (NFT); animal production technology and animal husbandry in general (APT); aquaculture management and technology and fishery in general (TMA); and silviculture and forestry in general (SVC).

To understand the implication of learning outcomes for the market and stakeholders, the B.Sc Degree Programs performed tracer studies regularly every year. The tracer studies showed that graduates could fulfill the various positions and sectors. The competence of the graduates can be fulfilled through the achievement of LO. More than 80% of alumni of NFT work in the feed industry, farms, and agricultural companies as QC, supervisors, and nutritionists. The high percentage of graduates working in animal husbandry and a survey of alumni related to the suitability of the APT curriculum that tied to competencies that they may wish to work in the national and international work market showed that the competency-based undergraduate education is very much in line with the needs of the workforce for the livestock industry, especially livestock production.

In the case of TMA, some of the graduates are known to work in the government agency as researchers, policymakers, or other positions related to the aquaculture sector; while in the private company, the graduates work in the on-farm and off-farm aquaculture sectors. Some of the graduates of TMA are also developing their own aquaculture business. Graduates of SVC work in various institutions that are still related to forestry and silviculture sectors, from government bodies, researchers, oil palm and timber plantations, bank and finance institutions, and mining companies (for ex-mining restoration), to private sectors. Some graduates of SVC started their silviculture businesses, such as planters, plant breeders, nursery practitioners, and consultants for forestry-related sectors.

Every preparation of revised learning outcomes of the B.Sc Degree Programs to be adjusted to keep it up to date and marketable to various stakeholders such as government, industry, and university in the field of the respective degree programs, such as in the field of livestock for both domestic and abroad (NFT and APT), aquaculture (TMA), and forestry and silviculture (SVC). The learning outcomes were evaluated and adjusted based on inputs from stakeholders and development and application of new technology. If inputs from stakeholders indicates that curriculum should be adjusted to be able to accommodate the recent need of the markets that including education, institutional and government bodies, industries, and private sectors; the department head or head of degree program proposed a modification of its current curriculum which will be discuss thoroughly in the internal meetings that involved lecturers in the department.

If it is required, the department will invite stakeholders from various position to give insight about what should be upgraded and added to the recent curriculum to ensure that the competencies that is taught in the degree programs are related to requirement of the markets. After consensus on new curriculum were already made, the new curriculum were

then proposed to the Dean to be discussed in the curriculum workshop. The curriculum workshop's final draft will then proposed to the Rector of IPB University, legalized, and applied to the degree program. Every year lecturers and degree program leaders visit various universities in the country and abroad to improve capabilities in the achievement of learning outcomes.

### Criterion 1.2 Name of the degree programme

The title of degree programs is presented in the Table 1.2.1. The title of degree programs in each of B.Sc Degree Programs in IPB University has been recorded in the nomenclature at the Directorate of Higher Education and regulated based on Education and Culture Minister Decree No. 036/U/1993, Minister of National Education Decree No. 178/U/2001, Minister of Education, Culture, Research and Technology Decree No. 6/2022. Therefore, all the degree titles are accepted nationally and internationally as indicated by acceptance of graduates in national and international Higher Education and research Institutions, government bodies, and private sectors.

Table 1.2.1 The name of degree titles, the name of degree programs, and accreditation status of the degree programs

	NFT	APT	TMA	SVC
<b>Title of the degree program</b>	Bachelor of Science in Animal Science	Bachelor of Science in Animal Science	Bachelor of Science in Fisheries	Bachelor of Science in Forestry
<b>The name of degree program</b>	Nutrition and feed technology- Bachelor of Science Degree Program	Animal production technology- Bachelor of Science Degree Program	Technology and Management of Aquaculture- Bachelor of Science Degree Program	Silviculture- Bachelor of Science Degree Program

The title of the degree programs and the name of the degree programs were already acknowledged by stakeholders in each of their respective fields and reflected the skill from the degree program. The degree programs routinely conduct promotions and socialization to the academic community, first-year students, prospective students, and the public. Those activities are carried out directly face-to-face, through social media (Facebook, message service, email, flyers, banners, etc.), student activities, the "Canvassing" program by IPB University, and student ambassadors who will explain to their origin High School. Due to some modifications in the "Competency-Based National Curriculum", the name of Animal Nutrition and Feed Science was changed to Nutrition and Feed Technology (NFT) in 2005. However, Animal Production Technology (APT) and Technology and Management of Aquaculture (TMA) Degree programs still use the same name as before 2005. While Siviculture (SVC) is the new department established in 2005.

The degree of NFT and APT graduates is *Sarjana Peternakan* which can be translated into Bachelor of Science of Animal Science. The NFT was established in 11 July 1996 based

on the Decree of the Ministry of Research, Technology, and Higher Education (Kemenristekdikti) No. 216/DIKTI/Kep/1996. In 2005, the name of Animal Nutrition and Feed Science was changed to Nutrition and Feed Technology (NFT).

In the APT, the name of the degree program: Animal Production, has reflected the main field of degree program producing fresh graduate with main skill in animal production. The APT was established in 1 September 1963 under the name of the Department of Animal Science, based on the Decree of Ministry of Higher Education and Science (Menteri Perguruan Tinggi dan Ilmu Pengetahuan) No. 91/1963 in line with the establishment of Faculty of Animal Science IPB with title of Degree Program is "*Insinyur (Ir.)*" and since 1994 is "*Sarjana Peternakan (S.Pt.)* or known as Bachelor of Science of Animal Science". In its development based on Decree of the Ministry of Research, Technology, and Higher Education (Kemenristekdikti) No 226 1996, APT is under the auspices of the Department of Animal Production and Technology.

The degree of TMA graduate is *Sarjana Perikanan* which can be translated into Bachelor of Science in Fisheries. The TMA was established in 8 December 1983 based on the Decree of the Ministry of National Education No. 0546/0/1983. The title of the degree program is already in line with job listings that available for the aquaculture or fisheries field. The title of the program is "Technology and Management of Aquaculture". The word "technology" and "management" emphasize competencies of alumni of this program to utilize current technology in aquaculture field and capability of the alumni to manage production system of various aquaculture activities.

The title of bachelor of forestry science for SVC is "*Sarjana Kehutanan*" (Bachelor of Science in Forestry) with major in silviculture. The title of Degree Program of "*Sarjana Kehutanan*" actually has been awarded to graduates of BSc.F since the Faculty of Forestry and Environment of IPB University was established in 1963. The title of "*Sarjana Kehutanan*" has already widely known, familiar, popular in the job market in Indonesia, while for international purposes, the translation of "*Sarjana Kehutanan*" is a Bachelor of Forestry Science. Job vacancies always request qualification of "*Sarjana Kehutanan*" not "*Sarjana Silviculture*" (Bachelor of Science in Silviculture). However, Bachelor of Science in Forestry majoring Silviculture reflected the main field of degree program producing fresh graduate with main skill in silviculture. The SVC was established in 2 August 2005 based on the Decree of IPB University's Rector No. 112/K13/OT/2005.

To avoid misunderstandings related to the name and to prevent any over expectation or under expectation of the graduates, the Degree programs routinely conducts promotions and socialization to the academic community, freshman, prospective students and public. Those activities are carried out directly by face-to-face, through social media (Facebook, message service, email, flyers, banners etc.), student activities, "Canvassing" program by IPB University, and through student ambassadors who will explain to their origin High School.



## Criterion 1.3 Curriculum

### 1.3.1 Content

The structure of curriculum at each degree program in IPB University from 2014-2019 should refer to IPB Rector Regulation on Order for the [Implementation of Undergraduate Programs No. 19/IT3/PP/2019](#). The courses in the academic curriculum are designed based on Learning Outcomes that have been formulated based on the established vision and mission of each degree program according to the IPB University mission. The LO is designed to fulfil the requirements of Undergraduate Education Program Competency Standards (Indonesian Qualification Framework (IQF)/KKNi) and National Standard of Education from the Directorate General of Higher Education and it is expected to generate specific graduate profile (**Table 1.3.1**). The curriculum structures are always updated and published in the [Undergraduate Education Program Book](#).

Table 1.3.1 Curriculum of each degree programs were designing based on KKNi

Degree Program	Graduate Profile
NFT	Graduates comprehend in designing, managing, and producing wholesome and high-quality animal products by applying Animal Nutrition, Feed Science, and Agrostology.
APT	Graduates are expected to be able to plan, develop and start their livestock business with reference to Animal Production Science. Competence or to have the ability to do in livestock business, APT graduates are able to work in the livestock industry, handling primary livestock products, and processing of dairy products.
TMA	Graduates are expected to be able to plan, develop and start their livestock business with reference to Animal Production Science. Competence or to have the ability to do in livestock business, APT graduates are able to work in the livestock industry, handling primary livestock products, and processing of dairy products.
SVC	Graduates are able to apply the silvicultural expertise and utilize science, knowledge, technology, and art of silviculture to solve problems and to ensure in a sustainable manner the ecological function, protection function, and production function of forest ecosystem in accordance with human's and environment's need.

The curriculum is evaluated periodically every 5 years to prevent module inconsistency with the Degree program concept and fulfil the stakeholder requirement. However, it may be done in less than 5 years if there are urgent matters for immediate improvement. Commonly, the curriculum review is done at the end of semester regularly. The curriculum development is carried out based on some input and feedback from stakeholders as well as alumni. For curriculum improvement, course content is also conducted based on national needs, development of science and technology, and reputable university benchmarking. Global issues related to silviculture such as climate change, deforestation and forest degradation, and land reclamation and rehabilitation, has become important factor considered for improving the curriculum.

The curriculum in NFT, APT, TMA, and SVC is designed to be completed within 8 semesters or less (maximum in 12 semesters) with minimum credits of 144 SCU (230.40 ECTS points). The structure of curriculum in four B.Sc Degree Programs are presented on **Table 1.3.2** The curriculum consists of General Competency Courses, Inter-department Courses, Major Courses, and Supporting Courses.

Table 1.3.2 Curriculum structure of NFT, APT, TMA, and SVC

Course Group	Recommended schedule by semester								Credit Units	Percentage (%)
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>		
General Competency Education Courses										
NFT	→	→							30	20.83
APT	→	→							31	21.53
TMA	→	→							32	22.22
SVC	→	→							31	21.53
Inter-department Courses										
NFT		→	→	→	→	→	→		29	20.14
APT		→	→	→	→	→	→		43	29.86
TMA		→	→						9	6.25
SVC		→	→	→	→	→			38	26.39
Major Courses										
NFT		→	→	→	→	→	→	→	76	52.78
APT		→	→	→	→	→	→	→	70	48.61
TMA		→	→	→	→	→	→	→	74	51.39
SVC			→	→	→	→	→	→	67	46.53
Supporting courses										
NFT						→	→		9	6.25

Course Group	Recommended schedule by semester								Credit Units	Percentage (%)
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>		
APT										0
TMA		→	→	→	→	→	→	→	29	20.14
SVC			→	→	→	→	→		8	5.55
Total										
NFT, APT, TMA, SVC									144	100

Generally, IPB University adheres to the system that the freshman in undergraduate program are required to pass a Common First Year Program or known as General Competency Education Program (PPKU, *Program Pendidikan Kompetensi Umum*) before entering any faculties or department <http://ppku.ipb.ac.id/>. Basic science competencies are given at the first level to meet generic learning outcomes to qualify bachelor degrees according to KKNI. On the second to fourth level (3<sup>rd</sup> to 8<sup>th</sup> semester), the curriculum is delivered to achieve generic learning outcomes for each degree program.

From the 2<sup>nd</sup> semester, all students in NFT, APT, TMA, and SVC may take inter-department course which are selected by a degree program from other departments within or outside the Faculty. It provides a solid foundation for deepening of the core competence and other competence in accordance with the Expected Learning Outcome (ELO) of the graduates such as management skills, communication skills, and entrepreneurial skills. The major courses covering all the core competencies ranging from basic to applied science, which is managed by each Degree program. These courses comprise all mandatory subjects in the degree program, including seminar and undergraduate thesis. These courses can be taken from 2<sup>nd</sup> to 8<sup>th</sup> semester. The supporting courses are courses offered by all degree programs in IPB that can be taken by the students. The courses are aimed to support learning outcomes for obtaining additional competencies for students. Supporting courses from the other Department of IPB directly will support students in acquiring knowledge and skills. The NFT, TMA, and SVC include supporting courses in their curriculums which can be taken by students in specific semester range from 2<sup>nd</sup> to 8<sup>th</sup> semester, while APT do not include supporting courses in the curriculum.

In order to strengthen and comprehend the graduate competencies as well as to fulfil the learning outcomes, other programs that have credit are also conducted, namely field practical work, student community service, internship program, and final year project. Field practical work designed to give students learning to apply their knowledge to the community, participate in addressing problems in the field, and provide experiences for students to interact with their future workplace. The Field Practical Work program is conducted directly in related institutions or companies for 1 month. Students are accompanied by an appointed Faculty member as a supervisor as well as a field supervisor

from a farm, institution or industry. Students are assessed for this program and required to report the results of field practical work. Assessments of the activities are conducted by authorized officers at the field practical work site, i.e., the owner or manager, the head of the institution, or the entrepreneur as well as the oral examination by the lecturer. During this pandemic Covid-19, all degree programs give students the option to do field work near their respective domiciles so that this program can be carried out according to the academic schedule. To maintain the Field practical work quality, the degree program determines the minimum working hours for students equivalent to credits of courses. In addition to this, the students are evaluated by lectures two times (at the beginning and middle term). During this evaluation process, the company representatives are involved. The internship programs is recommended to be taken by the students to enrich their knowledge and skills. This program is not obligatory, but degree program facilitates the administrative process for this internship program

To engage students with community service, students have an opportunity to join student community service program (KKN, *Kuliah Kerja Nyata*) approximately for a month. All degree programs implement the KKN program for 4<sup>th</sup> year students. On this program, students apply the knowledge and skills gained in each course at the previous semester. This program allows the students to enhance their soft skills such as in communication, leadership and team working as well as their capability in real-life problem solving. During KKN, students from different faculties are grouped to live in a village for a month. During the stay, they have to solve the local community's problems by using their theoretical backgrounds. The activities mostly conduct with Focus Group Discussion (FGD) with a community to explore the problem and potential solution, as well as to organize program activities. At the end of the program, students should write a report and do final assessment of Community Service Program.

After completing the courses requirement for approximately 7 semesters, students may take the final year project in their last semester. For their final project, the students are offered to choose various types of projects and reporting their project on undergraduate thesis. Type of final year project in each degree program is presented in

**Table 1.3.3**

Table 1.3.3 Type of final year project

Degree program	Experimental	Non-experimental	Literature review	Problem based- Internship program
NFT	→	→	→	
APT	→	→		
TMA	→	→	→	→
SVC	→	→	→	→

Students have opportunities to do the self-development by joining the student organization, extracurricular activities, sports and art, as well as the exchange program. Those activities were introduced and promoted periodically in students' meeting agenda and by academic supervisors. In addition, students are encouraged to obtain more skills independently through the student's association activities, such as community services, farming and education, festivals, workshop and teaching farm. In K2020 curriculum, student's extracurricular activities can be converted into as a supporting course study credit.

Starting from August 2020, a curriculum adjustment was applied to comply with the latest Higher Education Program stipulated by the Directorate General for Higher Education (DIKTI) year 2019 ([Permendikbud No. 3-7/2020](#)) and to accommodate the development in both the knowledge and technology in aquaculture and in teaching methodology. In this new curriculum, students are also required to take a minimum of 144 credits for graduation and to take the courses that consist of Common Core Program, Foundational Literacies/Academic Core Course, Capstone Courses, and In-depth Courses.

All students should take the Common Core Program (PPKU) courses in the first year to achieve the 4C's (***Critical thinking-problem solving Communication, Creativity, and Collaboration***) competencies building. The Common courses (CC) are basic knowledge courses, which are generally similar for all bachelor students in IPB. In the second and third years, students can take the Foundational Literacies/Academic Core Courses and In-depth Prodi Courses. The Foundational Literacy/Academic Core Course are courses taken by the students to obtain basic competencies in each degree program. Meanwhile, the In-Depth Prodi courses are aimed to add depth of knowledge to support the learning outcomes. The Capstone courses are integrative courses given on semester 5 and 6 that interconnect all the knowledge and skills gained in the previous semester. The Enrichment courses can be taken in any semester by students, including internship student exchange, competition, international exposure, entrepreneur schemes, etc. These courses are to accommodate Freedom to Learn (Merdeka Belajar) program launched by Government. In the last semester of the fourth year, students should take the Thematic Real Work Lecture (KKNT) and Internship Program, and finish the final year project.

Structure of courses in K2020 has been designed in such a way to ensure the accomplishment of learning outcomes and to give opportunities for students to determine individual focus and study progress. Major changes in the courses within the degree program are mainly related to restructuring the courses position within the overall study periods, so that all the courses can be completed within 6 semesters. Therefore, the 7<sup>th</sup> semester will be available for elective courses, exchange programs or internship. This was done to facilitate the Ministry's program (MBKM) that encouraged the students to take courses in other universities or to get field experiences through internship programs in

relevant institutions or private companies. Teaching method has also been modified to be student centered learning or project-based learning.

### 1.3.2 Structure of the programme

The curriculum has been designed to achieve the expected learning outcomes. In addition, the curriculum structure is also designed as the implementation framework to accomplish the vision and mission of IPB University, which is applied in the undergraduate program. The arrangement of Curriculum presented in **Figure 1.3.1**

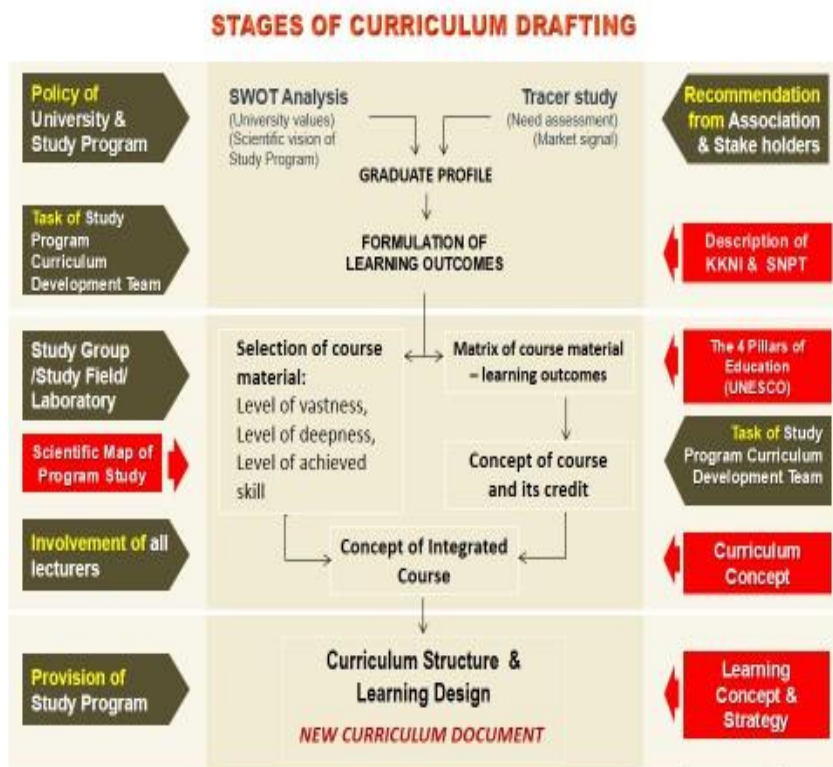


Figure 1.3.1 Mechanism of Curriculum Design

The content of the courses is evaluated every five years. The results of the courses' evaluation are presented in the seminar/workshop forum. The curriculum of degree programs has been designed so that the activities of teaching, learning, and assessment method can meet the learning outcome.

All of degree program courses were classified into four groups: 1) General Competency Education Program (basic university), 2) Inter-department courses (basic faculty), 3) Major courses, and 4) Additional/supporting courses group.

1. **General Competence Education Program** is given to the new students in their first year to strengthen their knowledge foundation for more advanced courses in the following years. These courses are also given to assure a similar basic knowledge between the new students who come from various high schools with varying qualities in education and backgrounds.

2. **Inter-department courses** comprises general and comprehensive courses in field of faculty. Animal science is for NFT and APT, fisheries is for TMA, and Forestry for SVC SP. The subjects which are the foundation of general skills in the field of as well as to provide general knowledge. These courses mainly given in the second year. However, some of inter-department courses also given in the fifth semester.
3. **Major course** are the primary courses in the degree program, which have been constructed for the students to achieve the expected learning outcomes. These courses are given on the third year and fourth years commonly, when the focus of the courses gradually moves to strengthen their professional knowledge and application in nutrition and feed technology for NFT, animal production technology for APT, aquaculture science and technology for TMA, and silviculture for SVC, including the field practice, the seminar, and the final project.
4. **Supporting courses** are aimed to support the main competences of the student such as entrepreneurship, basic and business communication, laws courses, character development, management, advance courses, etc. The students may take supporting courses from other departments in IPB University. The supporting courses is not a mandatory for the students of the degree programs.

All of Degree program curriculum is designed to be completed within 8 semesters or less or maximum in 12 semesters with a minimum credit is 144. The students have to study for 7 semesters then complete the final project in the last semester. Each subject provides several competencies, i.e. (1) science and skill courses, (2) works skill courses, (3) work behavior courses, (4) personality development courses, and (5) social aspect courses.

The curriculum structure of NFT is presented in **Table 1.3.4**, APT in **Table 1.3.5**. TMA is presented in **Table 1.3.6** and SVC in **Table 1.3.7**.

Table 1.3.4 The NFT curriculum structure and its correlation with LO

Competency group	Credits (%)	Knowledge and skill	Criteria in LO
General Competency Education Program (basic university)	30 (20.8%)	Basic science (Math, Chemistry, Biology, Physic etc), Knowledge of National Defense, Religion, Entrepreneurship	#7, #8, #9
Inter-department courses (basic faculty)	29 (20.1%)	Core and fundamental animal science	#1, #2, #3, #4, #5, #6
Major courses	76 (52.8%)	Specialisation and advanced knowledge in the field of Nutrition and Feed Technology	#1, #2, #3, #4, #5, #6
Additional/supporting courses	9 (6.3%) (Up to 16)	Communication, leadership, entrepreneurship, management, etc	#7, #8, #9

Total	144-160		
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Table 1.3.5 The APT curriculum structure and its correlation with LO

Competency group	Credits (%)	Knowledge and skill	Criteria in LO
General Competency Education Program (basic university)	31 (21.5%)	Basic science (Math, Chemistry, Biology, Physic etc), Knowledge of National Defense, Religion, Entrepreneurship	#2, #3, #6, #7, #8, #9, #10, #11, #13
Inter-department courses (basic faculty)	43 (29.9%)	Core and fundamental animal science	#1, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13
Major courses	70 (48.6%)	Specialization and advanced knowledge in the field of Animal Production Technology	#1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13
Additional/supporting courses	(Up to 16)	Communication, leadership, entrepreneurship, management, etc	#7, #10, #11, #13
Total	144-160		

Table 1.3.6 The TMA curriculum structure and its correlation with LO

Competency group	Credits (%)	Knowledge and skill	Criteria in LO
General Competency Education Program (basic university)	32 (22.2)	Basic science (Math, Chemistry, Biology, Physic etc), Knowledge of National Defense, Religion, Entrepreneurship	#7, #11, #12, #13, #14, #15, #17
Inter-department courses (basic faculty)	29 (20.1)	Core and fundamental fisheries science	#11, #12, #13, #14, #15, #17
Major courses	74 (51.4)	Specialization and advanced knowledge in the field of Technology and Management of Aquaculture	#1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #16
Additional/supporting courses	9 (6.3%) (Up to 16)	Communication, leadership, entrepreneurship, management, etc	#5, #12, #13, #14, #15, #17
Total	144-160		



Table 1.3.7 The SVC curriculum structure and its correlation with LO

<b>Competency group</b>	<b>Credits (%)</b>	<b>Knowledge and skill</b>	<b>Criteria in LO</b>
General Competency Education Program (basic university)	31 (21.5%)	Basic science (Math, Chemistry, Biology, Physic etc), Knowledge of National Defense, Religion, Entrepreneurship	#1,#2,#3, #4, #5,#6, #8, #9
Inter-department courses (basic faculty)	38 (26.4%)	Core and fundamental forestry science	#1,#2,#3, #5, #8, #9
Major courses	67 (46.5%)	Specialization and advanced knowledge in the field of Silviculture	#1,#2,#3,#4,#5,#6, #7,#8,#9
Additional/supporting courses	8 (5.6%) (Up to 16)	Communication, leadership, entrepreneurship, management, etc	#1,#2,#3,#4, #5,#6, #7, #8, #9
Total	144-160		

In 2020, Minister of Education and Culture issued the new regulation on National Higher Education Standards ([Permendikbud No. 3, 2020](#)). One of the policies regulates the independent learning system. Therefore, IPB launches the [2020 Curriculum \(K2020\)](#) which integrates future ready mindset and 21<sup>st</sup> century skillsets, as well as stimulates high-order thinking skills in the achievement perspective of learning outcomes and Independent Learning-Independent Campus. The 2020 Curriculum is designed to form the powerful agile learner graduates to respond the industrial era 4.0. The graduates are expected to be superior techno-sociopreneur graduates who have noble morals, high nationalism, professional competence, millennial soft skills, leadership, have a global perspective, and become trendsetters of innovation and change. In K2020, Student to get three new literacies, namely data, technology and human literacies. IPB specifies several components of K2020, namely Common Core Program (PPKU), Foundational Literacies/ Academic Core Courses, In-Depth Prodi Courses, Enrichment Courses, and Final Year Project.

[All of Degree program arranged the K2020 structure](#) based on IPB guidelines. To achieve K2020 goal which is to accommodate the development of industry 4.0 and to form powerful agile-learner graduates, the K2020 has several PLO including knowledge, professional skill and managerial skill.

### **1.3.3. Student mobility**

To improve student competency, student exchange is also encouraged through various effort. The student mobility program is one of IPB University's initiatives to enhance student competencies and to familiarize them with inter- and cross-disciplinary knowledge in a multicultural educational environment. The expected following outcomes are internationalization of IPB universities in the global scientific communities and pursuing collaborations with foreign partners. The International Collaboration Office at IPB University serves as a center for information exchange regarding international exchange programs. Funding is one of the common problem for the student mobility program. Through ICO, students can apply for financial assistance from IPB University by submitting a proposal outlining the program's goals and activities, the requested budget as well as the details of the planned expenses. ICO will then review the proposal, and decide the approval and the amount of the financial support. ICO will also help managing the administration such as the visa application, study permit, etc. Another alternative, students may also apply a financial support to the Department where they are enrolled. Similar procedure is applied as in ICO funding application. The Department will the decide the approval and the amount of the funding assistance.

The student is also encouraged to do self development and increase their creativity through their involvement in the various competition in local, national and international levels. The International Collaboration Office (ICO) coordinates the international programs,

including student exchanges, international student competitions, summer course programs, etc. Such programs have helped to increase the number of student mobility. The degree programs encourage students to participate in international seminars or workshops of the specific field. In addition, all Degree programs promotes individual student mobility program by doing inbound and outbound programs which is also support SIMAKER achievements. The students have an opportunity to enhance their ability, interests, and opportunities to actively learn through various international programs, including student exchange programs, summer courses, credit earnings, and seminars. All degree programs encourage students to join student competition event, both national (e.g., the Student Creativity Program competition) and international (young scientist event). The rule about the student mobility programs is stated on POB-IPB-S1-11. The students who intend their activities to be acknowledged by the degree program formally may apply to <https://simawa.ipb.ac.id/Account/Login>.

Table 1.3.8 Students inbound mobility

Parameter	Year				
	2016	2017	2018	2019	2020
<b>NFT</b>					
<b>Number of Students</b>	38	42	35	21	11
<b>Countries of Origin</b>	Australia, Malaysia, Thailand	Australia, Malaysia, Thailand	Malaysia, Australia, Japan	Sudan, Malaysia, Philippines, Thailand, Australia	India, Japan, Malaysia, Sudan, Philippines
<b>APT</b>					
<b>Number of Students</b>	26	65	37	37	58
<b>Countries of Origin</b>	Netherland, Malaysia, Palestine, Poland, Timor Leste, Australia	Palestine, Malaysia, Japan, Zimbabwe, Australia, Thailand, Czech Republic, Egypt	Palestine, Zimbabwe, Japan, India, Australia, Malaysia, Laos, Taiwan, Thailand, Vietnam, Myanmar, Czech Republic, Egypt, South Korea, South Africa, Netherland	Taiwan, South Korea, Malaysia, Thailand, Netherland, South Africa, Australia	China, Thailand, Turkey, Japan, Taiwan, Hungary, Malaysia, Australia
<b>TMA</b>					
<b>Number of Students</b>	5			5	8

Parameter	Year				
	2016	2017	2018	2019	2020
<b>Countries of Origin</b>	Malaysia, China			Malaysia	Thailand
<b>SVC</b>					
<b>Number of Students</b>	13	15	40	15	36
<b>Countries of Origin</b>	U.S.A, Japan, Denmark, Germany	U.S.A, Japan, Germany, Denmark	South Korea, Thailand, Taiwan, Malaysia, Philippines	Malaysia, Japan, Germany	Bangladesh, Netherland, China, Myanmar, Singapore, Japan, Cote d'Ivoire, Ethiopia, Malawi, Phillippines, Germany, Nigeria, Malaysia, Pakistan, Thailand

Student mobility activity (inbound and outbound) between 2016-2020 can be seen in Tables 1.3.8 and 1.3.9. The highest number of students who joined inbound mobility was in 2017 for NTP and APT, while the highest for SVC was in 2018. The summer course programs that held online in 2020 at Faculty of Animal Science and Faculty of Forestry attracted the participation from all of the world, increasing the number of students inbound mobility of NFT, APT and SVC.

Table 1.3.9 Students outbound mobility

Parameter	Year				
	2016	2017	2018	2019	2020
<b>NFT</b>					
<b>Number of Students</b>	13	11	15	35	80
<b>Countries of Origin</b>	Australia, Turkey, Malaysia, Thailand, Vietnam, Japan, South Korea	Australia, Turkey, Switzerland, Malaysia, Thailand, Vietnam, Japan, South Korea	France, Malaysia, Australia, Thailand, South Korea, China, Taiwan	France, New Zealand, Taiwan, Thailand, Singapore, Japan, South Korea, Australia, Malaysia	Japan, Australia, India, Thailand, Canada, France, Singapore, Netherland, U.S.A, Philippines, Germany, Italia, Malaysia
<b>APT</b>					
<b>Number of Students</b>	17	21	18	15	28

Parameter	Year				
	2016	2017	2018	2019	2020
<b>Countries of Origin</b>	Philippines, Japan, France, Australia, South Korea, Vietnam, Timor Leste, Singapore	Singapore, Thailand, Australia, Vietnam, South Korea, Malaysia, Japan, Taiwan	Australia, South Korea, Taiwan, Thailand, Japan, Singapore	Malaysia, Taiwan, Australia, Thailand, South Korea	Japan, South Korea, India
<b>TMA</b>					
<b>Number of Students</b>	16			10	2
<b>Countries of Origin</b>	Taiwan, Japan, Malaysia			Japan, Malaysia, Thailand	Japan
<b>SVC</b>					
<b>Number of Students</b>	8	12	17	15	16
<b>Countries of Origin</b>	South Korea, Japan, Malaysia, Austria, Germany	Austria, South Korea, Japan, Malaysia, Germany	South Korea, Malaysia, Japan, Thailand	Malaysia, Japan, Germany, South Korea, Singapore	Malaysia, Japan, South Korea, Germany

In terms of outbound mobility, students of the degree programs mostly choose the Asian countries as their destination. However, a number of students participating in the online workshops, webinars and international seminars has increased the number of student outbound mobility in 2020.

Starting from 2019, IPB has designed Diploma Supplement (SKPI) with an aim to recognize student activities outside lecture which can support their major competencies. Students can apply for these activities as a diploma supplement or SKPI. The SKPI is a letter containing information on non-academic activities and students' achievements. There are some challenges in the implementation of student mobility program faced by students, including related to language barrier, funding issue, and time suitability.

On the new curriculum K2020, pursuant to regulations of the implementation of Freedom to Learn - Free Campus (Merdeka Belajar Kampus Merdeka/MBKM) of the Ministry of Education and Culture, accomplishment and competencies acquired outside institution were further promoted and officially acknowledged as part of learning activities as well as could be claimed by students as semester credit unit (see chapter 5.2.). The MBKM program allows the students to independently take courses outside their own degree program for 1 semester and take 2 semesters of their study period to have learning activities outside the university such as industrial internship, community services, teaching

in educational unit, student exchange program, research, entrepreneurial activities, independent projects or humanitarian programs. In the implementation of the current curriculum (K2020), about 20 SCU is allocated for enrichment courses including extracurricular activities. Therefore, the inbound and outbound activity can be converted into credits to replace a certain course in the curriculum

IPB has set the Quality Target for graduation i.e., (1) Grade Point Average (GPA) of the graduates  $\geq 3.0$ , (2) students graduated on time ( $\leq 48$  months) more than 50% out of total students enrolled, and (3) drop out  $\leq 3\%$  out of total students enrolled. The passing rate and drop out of students enrolled in 2015-2020 is presented in **Table 1.3.10**. Referring to this standard, the graduation quality (by cohort) of SVC is improving as indicated by the percentage of students who graduate in 4 years increased from 2015 (24.69%) to 2017 (44.44%), while the graduation quality (by cohort) of NFT and APT decreased (44.33% to 25.44%, and 56.56% to 40.56%). However, the percentage of students of NFT, APT, TMA, and SVC who can graduate on time ( $\leq 48$  months) on last academic year (2020/2021) are 57.35%, 44.79%, 11.50%, and 63,24% (**Table 1.3.10**).

The range of drop out students of NFT, APT, TMA and SVC decreased in last five academic years (**Table 1.3.11**). The rate of students who are drop out in their 1<sup>st</sup> year in APT and NFT are more than 3%, while TMA and SVC are less than 3%. Students are often drop out in their first year due to they are accepted in a degree program which is more in line with their interests. In case of NFT and SVC, the students also drop out in 2<sup>nd</sup> or 3<sup>rd</sup> year due to several reasons. Generally, the dropout student preferred to work before completing the degree. To prevent it, the degree program monitor student progress every semester and tried to motivate those students to continue their studies through academic supervisor, academic commission and head of the degree program.

Table 1.3.10 Pass rate and dropout of the students within last 5 years

Academic Year	Cohort Size	% Completed first degree in			% Dropout during			
		3 Years	4 Years	>4 Years	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Years & Beyond
2015								
NFT	104	-	44.33	55.67	3.84	3.00	-	-
APT	104	-	56.56	43.44	4.81	-	-	-
TMA	92	-	8.64	91.35	-	10	1	-
SVC	81	-	24.69	67.90	1.23	-	1.23	-
2016								
NFT	112	-	30.84	69.16	3.57	0.93	-	-

Academic Year	Cohort Size	% Completed first degree in			% Dropout during			
		3 Years	4 Years	>4 Years	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Years & Beyond
APT	96	-	43.01	56.99	3.12	-	-	-
TMA	101	-	11.45	88.54	-	3	2	-
SVC	83	-	36.14	45.78	1.20	0.93	-	-
2017								
NFT	114	-	25.44	74.56	1.75	3.57	-	-
APT	109	-	40.56	59.44	0.93	-	-	-
TMA	113	-	1.00	99	-	9	1	-
SVC	81	-	44.44	46.91	1.23	-	-	-
2018								
NFT	123	-	-	-	6.50	-	-	-
APT	92	-	-	-	-	-	-	-
TMA	130	-	-	-	-	20	-	-
SVC	82	-	2.43	-	2.44	-	-	-
2019								
NFT	120	-	-	-	-	-	-	-
APT	85	-	-	-	-	-	-	-
TMA	119	-	-	-	-	8	-	-
SVC	74	-	-	-	-	-	-	-
2020								
NFT	148	-	-	-	1	-	-	-
APT	105	-	-	-	0.09	-	-	-
TMA	113	-	-	-	-	8	-	-
SVC	96	-	-	-	-	-	-	-

Table 1.3.11 Length of study of the Graduates during last 5 year

Academic Year	Number of Graduates	Average Length of Study	Number of graduates who have Length of study ≤ 48 Months (%)	Number of graduates who have Length of study ≥ 48 Months (%)
<b>2015/2016</b>				
NFT	76	51.58	34.21	78.95
APT	80	52,93	35,92	64.08

Academic Year	Number of Graduates	Average Length of Study	Number of graduates who have Length of study ≤ 48 Months (%)	Number of graduates who have Length of study ≥48 Months (%)
TMA	90	51.45	25.55	74.44
SVC	81	54.71	41.97	58.02
<b>2016/2017</b>				
NFT	118	51.52	38.98	61.02
APT	99	51.41	20.79	79.21
TMA	90	55.66	9.9	90.1
SVC	52	48.25	63.54	38.46
<b>2017/2018</b>				
NFT	92	50.87	45.65	54.35
APT	118	51.81	44.00	66.00
TMA	86	52.10	16.3	83.7
SVC	86	49.75	48.84	51.16
<b>2018/2019</b>				
NFT	90	51.87	47.78	52.22
APT	90	51.87	59.57	40.43
TMA	90	53.64	7.9	92.1
SVC	69	50.28	50.72	49.28
<b>2019/2020</b>				
NFT	87	50.86	37.93	62.07
APT	74	50.50	44.44	55.56
TMA	92	52.16	40	60
SVC	90	50.71	66.67	33.33
<b>2020/2021</b>				
NFT	68	49.88	57.35	42.65
APT	94	51.51	44.79	55.21
TMA	78	54.06	11.5	78.5
SVC	68	48.71	63.24	36.76

The length of study for NFT, APT, TMA, and SVC is presented in **Table 1.3.11** The average length of study of graduate in NFT, APT, TMA, and SVC in the last five years are 51.10 months, 51.67 months, 53.68 months, 50.42 months, respectively. According to the data the percentage of students on completed their degree within 4 years in NFT, APT, and TMA decreased in academic year of 2019 due to the Covid-19 pandemic situation. This is



mostly due to the delay of student’s research implementation due to the pandemic in 2020 (IPB Rector’s Regulation related to campus activity during the pandemic starting from 16 March 2020). However, it is not occurred in SVC.

There are 3 general reasons with actions that have been identified in all degree programs as shown in **Table 1.3.12** to accelerate study completion. However, further strategies to anticipate the impact of pandemic Covid-19 situations have been performed by degree program by socializing and encouraging the students to choose various types of final year project that allows them to be more flexible in conducting the activity in anywhere. In order to improve the rate of student graduation, degree programs provides a “Student Control Book” to monitor student academic progress and do monitoring for the student who takes the Final Year Project. In TMA, for instance, the supervisor appointed to guide the students for Aquaculture Field Practical Work has been determined to be the same as the lecturer who will supervise the students for their Final Assignment to make the supervising process more efficient. **Figure 1.3.2** demonstrated that about 51% of the students of TMA agree that the curriculum has been designed to support timely completion of their study.

Table 1.3.12 The reason of student’s problem in completing their degree

Reason	Actions
Students could not complete coursework due to lack of ability	<ul style="list-style-type: none"> <li>✓ Counselling student through academic supervisor and resolve problem</li> <li>✓ Careful selection of student</li> </ul>
Student could not pass examination	<ul style="list-style-type: none"> <li>✓ Support tutorial programs from senior students on students’ organization</li> <li>✓ Give a chance to take remedial test</li> </ul>
Student has inability in time management and priorities	<ul style="list-style-type: none"> <li>✓ Give a motivation and character-building train in the beginning of semester</li> <li>✓ Develop students monitoring program</li> </ul>

#### 1.3.4 Periodic review of the curriculum

The curriculum is evaluated periodically every 5 years to prevent module inconsistency with the Degree program concept and fulfil the stakeholder requirement. Along this evaluation, the learning outcomes, including the market labour and society are also evaluated. However, it may be done in less than 5 years if there are urgent matters for immediate improvement. Commonly, the curriculum review is done at the end of semester regularly. The curriculum development is carried out based on some input and feedback from stakeholders as well as alumni. For curriculum improvement, course content is also

conducted based on national needs, development of science and technology, and reputable university benchmarking. Global issues related to silviculture such as climate change, deforestation and forest degradation, and land reclamation and rehabilitation, has become important factor considered for improving the curriculum. The changes of curriculum are well documented in the archive departments.

The programme objectives in the curriculum are regularly evaluated by program studies. This evaluation is conducted every year through tracer studies under coordination of Directorate of Collaboration and Alumni Affairs. The detail evaluation including the type of questions from each program study can be seen in Chapter 5.

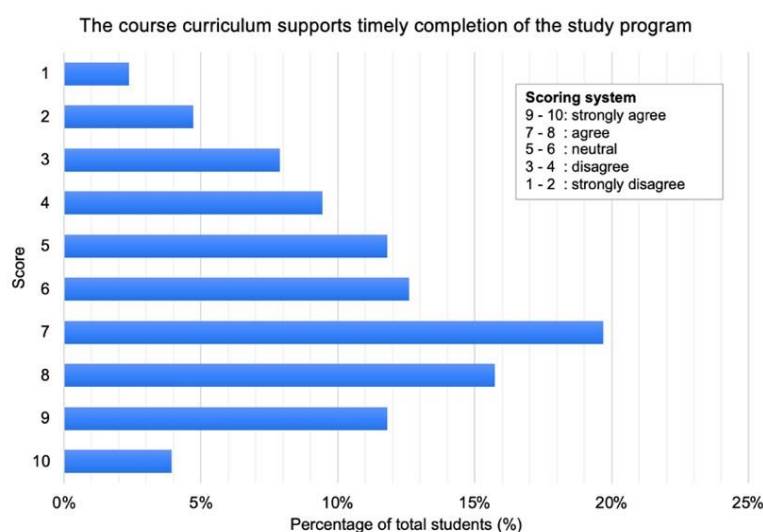


Figure 1.3.2 TMA Student's perception on how the course curriculum supports timely study completion

#### Criterion 1.4 Admission requirements

Assessment on new student is conducted to warrant that the quality of input, i.e. of new students, could meet the requirement for achieving the predetermined expected learning outcomes in **APT, NFT, TMA and SVC degree programs**. Admission Systems for incoming new students of all degree programs are centralized at the university level. Thus the requirements and admission procedures for incoming new students must follow the IPB University regulations. The terms and conditions for the admission of prospective IPB undergraduate students are available and can be seen in the Undergraduate Student Admission Guidebook of IPB based on the Decree of the [Rector of Bogor Agricultural University No. 291/IT3/DT/2018](#) and detail mechanism as described in [Standard Operating Procedure of IPB University \(POB-IPB-S1-\)](#). The selection method for undergraduate students on various intake paths is presented in Table 1.4.1. The general terms and conditions for the admission of IPB student candidates are as follows:

1. Prospective students of the IPB undergraduate students are Indonesian citizens or foreigners who have graduated from Senior High School (SLTA, *Sekolah Lanjutan Tingkat Atas*), graduates from diploma programs (at least D3), or other Higher Education (PT, *Perguruan Tinggi*) students, national or international who intend and meet the requirements to be admitted or move into IPB.
2. Admission of high school graduates to be admitted as new undergraduate students of IPB is carried out with the principle "Education for All Education for Everyone". The acceptance of senior high school graduates as undergraduate students will be selected through 9 pathways of admission scheme (Table 1.5), namely: (1). National Selection for Admission to State Universities (SNMPTN, *Seleksi Nasional Masuk Perguruan Tinggi Negeri*); (2). Joint Selection of Admission to State Universities (SBMPTN, *Seleksi Bersama Masuk Perguruan Tinggi Negeri*); (3). Special invitations for high school graduates who have national and international reputations; (4). Acceptance selection for new students with scholarships as representatives from the region (BUD, *Beasiswa Utusan Daerah*); (5). Independent Talent Test (UTM, *Ujian Talenta Mandiri*); (6). Affirmation Program; (7). Chairman of Student Council (Ketua OSIS); (8) Foreign Student Admission; and (9). Transfer Student Admission
3. General requirements for registration of Bogor Agricultural University freshman are: (1). Physically and mentally healthy; (2). Free alcohol or drug addiction; and (3). Agree to stay in Bogor Agricultural University dormitory during the first year of study.
4. New IPB undergraduate students who are taking education at IPB for the first time must maintain a certain cumulative overall GPA to avoid dismissed from the university.
5. Student candidate accepted in the first year is required to follow the General Competence Education Program (PKU, *Pendidikan Kompetensi Umum*)

Table 1.4.1 Selection method for undergraduate students on various intake paths according to the *Undergraduate Student Admission Guidebook of IPB*

No.	Admission Scheme	Selection Method and Admission Requirement
1	National Selection to Enter State Universities (SNMPTN, <i>Seleksi Nasional Masuk Perguruan Tinggi Negeri</i> )	Students are selected and recruited based on their academic performance during high school with a minimum passing grade of 7.5 (in a scale of 0-10) for Natural Science subjects (Biology, Physics, Chemistry, and Mathematics) and academic performance of their seniors coming from the same school in the previous year.

No.	Admission Scheme	Selection Method and Admission Requirement
2	Joint Selection to Enter State Universities (SBMPTN, <i>Seleksi Bersama Perguruan Tinggi Negeri</i> )	Written test for academic competency (basic mathematic, Indonesian language, English, verbal test, numerical test and figural test) and science and technology basic competency (science mathematic, biology, chemistry, and, physic).
3	Independent Talent Test (UTM, <i>Ujian Talenta Mandiri</i> )	UTM scheme is an admission for IPB University undergraduate program students, which are based on the leadership, entrepreneurship, and affinity of the prospective students towards agriculture. Prospective students have to be graduated from science majors in their high school or its equivalent with the criteria: a) graduated from high school in the last 3 years; b) healthy; c) not color blind. The selection is conducted through a written test of science subject and entrepreneurship talent. Graduates of the UTM scheme is expected to have leadership skills and entrepreneurial talent, so that they will conduct independent business and create new jobs of aquaculture, animal livestock and silviculture field
4	Selection of Regional Delegation Scholarship Student Admissions (BUD, <i>Beasiswa Utusan Daerah</i> )	This scheme considers the recommended and funded graduate of Senior High School by the government, or provincial government or regency/city government, as well as state and private companies. This scheme expects the graduated students to return to their origin to develop their area in context of aquaculture, animal livestock and silviculture. Registration is done institutionally by the scholarship provider, completing the registration form and received by IPB accordingly at a specified schedule.
5	International and National Achievement (PIN, <i>Prestasi Internasional &amp; Nasional</i> )	A special invitation to enter IPB-University is given to prospective graduates of senior high school of natural sciences in the current year who has a special achievement internationally or nationally in the activities of Competition for Scientific Work, Olympiad in Mathematics, Physics, Chemistry, Biology, Informatics and memorizing the Al Qur'an ( <i>hafiz/hafizah</i> ).

No.	Admission Scheme	Selection Method and Admission Requirement
6	Chairman of Student Council (Jalur Ketua OSIS)	The OSIS chairperson path is intended for prospective students who are outstanding and talented student council presidents in high school
7	Affirmacy Student Intake (Jalur Afirmasi)	Admission for prospective new students from less fortunate families. The affirmation program is carried out to provide greater access to higher education for Indonesian citizens who are in age group, living in the foremost area (the border of Indonesia with other countries)
8	Foreign Student Admission (International)	The International program of IPB is open for both Indonesian and foreign candidates. They must have graduated from Indonesian and foreign schools. The selection method is written examinations in a scholastic test.
9	Transfer Student Admission	The transfer of students from other national universities to IPB is possible by taking into account the reasons for moving from the leadership of the original university, the applicant's academic eligibility (GPA > 2.75), major capacity, and having taken at least 4 (four) semesters at the original university.

Registration for Student Selection is held online; the registration form is accessible via KEMENRISTEKDIKTI site ([www.snmpn.ac.id](http://www.snmpn.ac.id)), [www.sbmptn.ac.id](http://www.sbmptn.ac.id), and IPB University's website ([www.ipb.ac.id](http://www.ipb.ac.id)). All of the admission criteria and information are published and update at <https://admisi.ipb.ac.id/>. Prospective applicants apply to IPB University with a recommendation from respective school officials. The announcement of the registration and admission schedule of students applying to IPB University is posted two months before the registration period is due. All eligible candidates for each of the admission programs have the same opportunity to take all available admission programs.

The proportion of IPB University's capacity for each admission scheme refers to the stipulations given by the government. Student capacity for all degree program are specified by IPB University through a Coordination Meeting attended by the Chairman of IPB University, the Faculty, and the Department in order to determine the quota for each admission program, by considering the following factors:

- (1) IPB University's strategic plan, especially in relation to the development of science and IPB University mission to develop the nation
- (2) The Faculty/Department development plan

- (3) Selectivity level evaluation results from the admission of new students of prior years
- (4) The capacity of the facilities and human resources (lecturer) at the department hosting the degree program

Other than the considerations described above, the Dean and the Head of the Department also are involved in the selection of prospective students to give considerations related to the location/origin of high school all over Indonesia where main societal activities are in the field of fishery, forestry or animal production. Therefore, IPB University can produce competent graduates distributed all over Indonesia, advancing science and technology relevant to the needs of the community.

There is no alternative mechanism for the missing admission requirements. The student candidates must meet all qualification requirements, and no courses or matriculation programs will be offered to replace the missing requirements. However, there is an alternative scheme to help students meet the funding obligation. For this situation, financial scholarships or fee deductions will be made available. Prospective students who has been declared admitted to IPB University are obligated to stay at the freshman dorm for one academic year and is obligated to take the common first year program. Students from the SNMPTN track are also obligated to take common first year program organized by TPB- IPB University whose objective is the standardization of academic qualification of IPB University students, introduction to cultural diversity, and adaptation for the new learning system at IPB University. Freshman year study status is conducted by the Directorate of General Competence Education Program while on the following year, it is conducted by the faculty. In each semester, an evaluation of learning progress is regularly conducted. Student success is stated with Grade Point Average, namely: (1)  $GPA \leq 1.50$ ; the student is expelled/dropped out, (2)  $1.51 \leq GPA \leq 2.0$ ; the student receives a warning, (3)  $GPA \geq 2.0$ ; student passes with unconditional status.

Other than GPA-based evaluation, maximum university credit unit in the evaluation period are also taken to consideration. For example, if an 8th semester student (senior year) only achieves 96 credit unit with a  $GPA \geq 2.0$ , the student is expelled from IPB University. The same also happens if the study duration of a student surpasses 12 semesters (6 years) and this student has not yet graduated and is not showing progress. Students with problematic grades and achievements will receive a warning letter, as information of the continuation status of their studies. Warning letters are given 3 times during one's study, and if it can be concluded that the student does not show progress, the gets informed that he or she will be expelled from IPB University.

Most of the students who are selected by SNMPTN system show good to excellent academic performance. This admission scheme is appreciated by reputable Senior High Schools (SHS) as an accountable and credible admission scheme. Therefore, IPB University has a high possibility to select the best 10-50% of students of reputable SHS. Considering

those reasons, IPB University always gives the highest portion of the new student through this SNMPTN admission scheme. The IPB University policy on admission of new students is to have 50% of new student come from SNMPTN scheme, 30% of new students come from SBMPTN, and the rest comes from either through special invitation for high school students, special envoy scholarship program, general talent admission procedure, and affirmative program Implementation of monitoring and analysis of new student enrolment is coordinated by New Student Admission Committee (PPMB) IPB headed by Vice-Rector of Academic and Student Affairs

This admission requirement is in accordance with the expectations of freshmen from each degree program. The process carried out is that the degree program proposes a quota amount from SNMPTN, SBMPTN and UTM, then the admission selection involves the Dean to ensure that the students accepted are in line with expectations. If then there are students who do not meet expectations, there will be a program at PKU to strengthen their academic capability before attending lectures in the degree program.

#### **Criterion 1.5 Workload and credits**

IPB established a “Major-Minor Competency-Based Curriculum” in 2014. The undergraduate program curriculum for a bachelor's degree in IPB University has a workload of at least 144 SCU (230.4 ECTS) and a maximum of 160 SCU (256 ECTS). This workload is sufficient to be achieved within the timeline (8 semesters). All courses should be taken in appropriate sequence as stated in the curricula. According to the IPB Rector Regulation No. 6/IT3/PP/2016, No. 11/IT3/PP/2017, No. 10/IT3/PP/2018, and No. 19/IT3/PP/2019 in Order for the Implementation of Undergraduate Programs:

1. Field of expertise is discipline-based expertise (science) in a Department/Faculty.
2. IPB undergraduate program curriculum is formulated based on KKN I to produce graduates with level 6 learning outcomes (LO).
3. Competency-based curriculum, is a curriculum that emphasizes the complex outcomes of a learning process. In this system students take education in one major as a field of expertise (main competence) they may take other minor fields as a complementary field of expertise (competency) or a supporting course for their expertise.
4. The courses in the undergraduate program curriculum consist of General Competency Courses, Inter-department Courses, Major Courses, and Elective Courses.
5. The compulsory courses in each major that are held in the first year are introductory to the major which can consist of: (1) major courses; and/or (2) Inter-department courses.
6. The semester credit unit (SCU) is a measure used to express (1) the amount of student study load, (2) a measure of the success of the cumulative effort for a particular

program, and (3) a measure for the burden of educational administration, especially for lecturers.

7. Understanding the Credit System:

- a. The credit system is a system for administering educational programs expressed in semester credit units (SCU), with the smallest time is one semester.
- b. Semester is a unit of time for 19 weeks of educational activities, consisting of 14 weeks of lecture activities (lectures, practicum, or response), 2 (two) weeks of Mid-Semester Examination (UTS), and 1 (one) week of preparation for the Final Semester Examination (UAS), and 2 (two) weeks of Final Semester Examination (UAS)

For bachelor programs, a minimum total workload of 144 semester credit units is required which is distributed evenly throughout 8 semesters or less or a maximum in 12 semesters. Student workload can be estimated from the number of credits taken per semester. The number of credits is determined based on the GPA (IP) of the previous semester. Credits are recorded and monitored on <https://simak.ipb.ac.id/>.

Students have a right to take workload up to determined maximum Semester Credit Unit (SCU). The conversion of 1 SCU= 45 hours = 1.6 ECTS Points). Students with GPA<2.00 in the previous semester will be allowed to take 19 SCU (30.4 ECTS) in the following semester. This aims to support students' opportunities for adaptation, better time and activity management, and better physical and mental health (if it is the cause), so they will be more ready for the following semesters. They also need to discuss and consult the issue with their academic advisor/academic supervisor. Students with this case, however, are rarely found. In normal cases, 22 SCU (35.2 ECTS) are allowed (if students GPA is 2.00-2.75) in their previous semester. Students with GPA from the previous semester equal to or more than 2.76 are allowed to take 25 SCU (40.0 ECTS) in the following semester. The amount and arrangement of subjects taken by students in each semester are determined and expressed in Study Plan Card (KRS) which is prepared under guidance and approval by academic advisor/supervisor.

Detail of a 1-semester credit unit for each academic activity is available in **Table 1.5.1**. One semester credit unit that use lecture method includes 3 (three) hours of activities per week within one semester, with the following details (Student Guidebook). All activities are counted per week for one semester, or equal to 14 times of meeting outside the exam. Credit for each module is based on the targeted PLO and divided by the number of hours for lectures and practicum. To evaluate whether the credits awarded for each module is correspond to student workload, each degree program do the curriculum evaluation every end of semester.

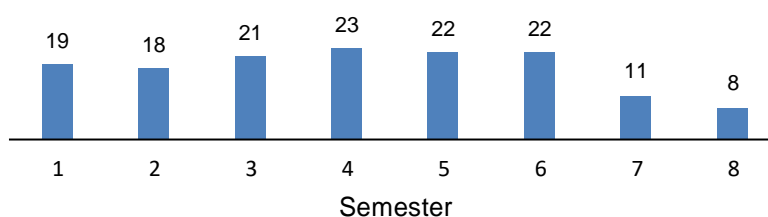


Table 1.5.1 Semester credit unit for each academic activity

Activity	Time duration/week
Class practice/tutorial	Face to face activity: 60-100 minutes Structured activity: 60 minutes Independent activity: 60 minutes
Practicum	2-4 hours (2-4 times 60 minutes)
Field practice/KKNT/KKP/Internship	4-5 hours (4-5 times 60 minutes)
Research and Final Year Project	3-5 hours

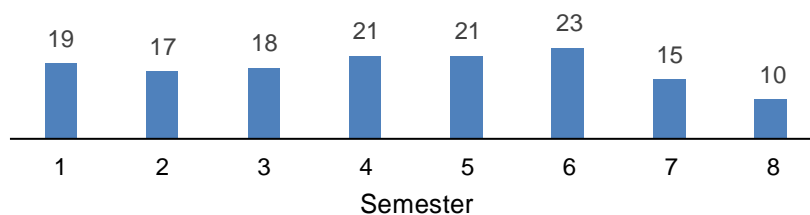
The number of credits obtained by students each semester that allows students to graduate in 4 years is shown in **Figure 1.5.1**. The average study period of Students of all degree program is around 8 to 9 semesters and the workload is distributed equally through the semesters.

**Number of credits (SCU)**



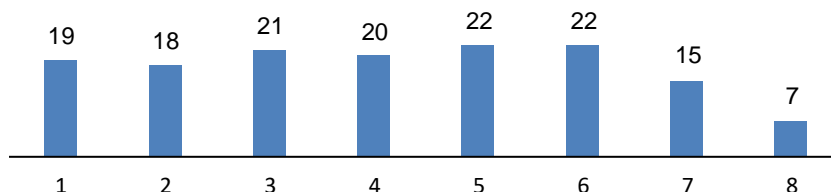
(a)

**Number of credits (SCU)**



(b)

**Number of credits (SCU)**



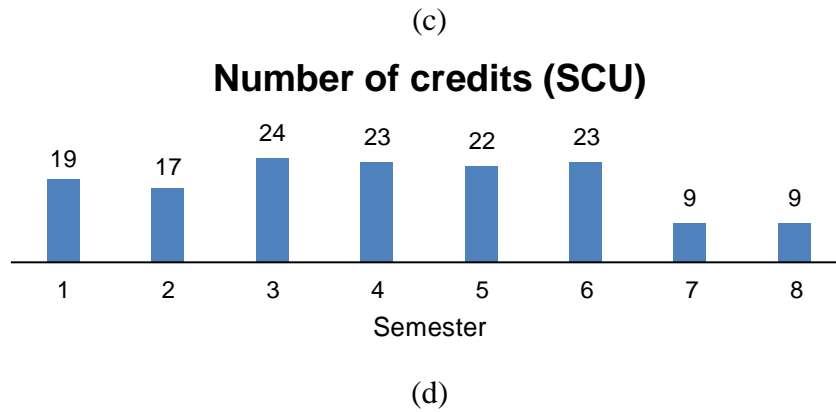


Figure 1.5.1 Students workload per semester in each degree program. (a) NFT, (b) APT, (c) TMA, (d) SVC.

At the end of each semester upon completion of every course, enrolled students will be granted a specified number of semester credit unit (SCU). Those who do not pass the compulsory courses have to retake the same course in another semester, and their load of work would not be counted. If students have passed evaluation/examination, they are expected to achieve the respective learning set by that particular course to encourage them to explore challenging courses. Students who get an E in a course are required to take Repetition Lecture. The repetition is only offered 2 (two) times of the whole lecture period. After attending 2 (two) times of repetition lectures and still got grade E, the student is not allowed to register again for the next semester and is being dropped out from IPB. Generally, these students receive direction from academic supervisors and departmental facilities such as providing study guides to be able to increase their grades in order to pass the course and not be drop out.

### **Criterion 1.6 Didactics and Teaching Methodology**

The nature of motivation and learning strategy use is vital to improving student learning outcomes. The Acts of the Republic of Indonesia No. 20 of 2003 concerning the National Education Systems defines education as a deliberate conscious effort being made to create an atmosphere of learning and the learning process so that learners can actively develop their potential to have a religious spiritual strength, self-control, personality, intelligence, noble character, and also the skills necessary for himself and citizens. The attainment of quality achievement in all learning does not only depend on faculty members but how students relate to each other and their teacher, and should be supported by all the elements involved in the implementation process. Thus, the interaction of students with Faculty members and academic support staff are well implemented in this event. It is in accordance with the purpose of the learning process where faculty members transfer

their knowledge, abilities, behavior, to students. Moreover, it is also event to develop student characters to build students' confidence.

Teaching had been the crucial factor for the successful implementation of the learning process which includes specialized skills and knowledge in higher learning institutes. In normal situation, the teaching-learning processes in IPB University are conducted in classrooms equipped with standard teaching equipment, e.g., white board, LCD, and projector. Generally, size of the class is approximately for 50-100 students. Due to the number of students, a course can be divided into 2-3 class parallel. The course was delivered by Bahasa Indonesia, but sometimes mixed with English. Some courses have a class which used English. The 'blended learning' was also applied for all courses through the centralized learning and aptitude support system (CLASS) ([class.ipb.ac.id](http://class.ipb.ac.id)). However, due to COVID-19 pandemic, the teaching-learning process is mostly conducted online.

Table 1.6.1 Teaching Method applied in All Degree Programs

Teaching method	NFT	APT	TMA	SVC
Lecture	→	→	→	→
Student center learning (SCL)		→		→
Problem based learning (PBL)	→	→	→	→
Project based learning (PjBL)	→	→	→	→
Practical work	→	→	→	→
Field observation		→	→	→
Seminar	→	→	→	→
Presentation	→	→	→	→
Group discussion	→	→	→	→
Paper writing	→	→	→	→

→ Applied

Teaching methods and instruments in each study program are designed to such an extent to facilitate students in accomplishing learning outcomes (LO). Generally, the course content is evaluated to conform to courses LO and graduate LO. The teaching methods and instruments are periodically updated as an effort to improve learning effectiveness. The study programs have designed to such an extent by considering the balance between class-study and self-study. Some courses have been designed to have a pattern on online learning which provides students with a great opportunity to self-study for the accomplishment of a particular competency. The online learning activity can be designed for synchronous and asynchronous performance. The class learning activities (offline or online) are implemented to award students with opportunity for discussion with lecturers. Meanwhile, asynchronous learning allows students to implement self-study with the instruction given by the lecturers. To facilitate students to improve their understanding on lecture topics, some lecturers opened the possibility to discuss through e-mail or popular social media. The exercises implemented as quiz, homework, essay, mid exam, final exam, seminar with presentation is

given to measure students' understanding of the lecture topic. **Table 1.6.1** showed the teaching method applied in each Study Program. All of lecturers can use the didactical instruments and methods shown on their EPBM in each semester.

Currently, the student-centred learning (SCL) is encouraged to use as teaching method in IPB University. The Problem Based Learning (PBL) and The Project based learning (PjBL) method have been applied in all courses mostly for laboratory work/assignment, field work and research. This method helps the students (1) to improve their capabilities in solving some problems related to some particular courses by searching some specific references, (2) to develop their skills involving some arguments, critical thinking, and discussions on some specific course materials, and (3) to enhance their capabilities in solving problems. Lecture and group discussion are the most used teaching method by the teaching staff. SCL method has been applied in all courses in NFT and APT and 10 courses in TMA and SVC.

During the COVID-19 pandemic situation, some strategies applied to ensure all teaching-learning activities run appropriately in order to achieve course learning outcomes effectively. These strategies are presented in **Table 1.6.2**.

Table 1.6.2 The strategies of teaching methodology to overcome Covid-19 situation

Method	Strategies	Description
Synchronous	Online Meeting	Various online meeting platforms are used, such as zoom meeting, Webex, and google meet to do live/synchronous sessions.
Synchronous, Asynchronous	Online Learning Management System	online CLASS developed by IPB to share lecture materials, videos, quiz etc.
Asynchronous	YouTube channel	YouTube channel used as alternative way to share video recordings about video lectures and instructions for students.
Synchronous	Practicum	Practicum is run face-to-face with strict health protocol. Students are organized in groups. Activities in laboratories are scheduled strictly.

The lecturers can evaluate and measure the knowledge and competence of students who show the achievement of learning outcome of the course, so as to improve the

learning process also by directly correcting if there is a lack in achievement of learning outcome of the lecture. The lecturers may evaluate whether the didactical instruments and methods used in each modul promote the intended learning outcomes by evaluating the student score in each modul. Also, the evaluation of learning activity per semester annually based on the results of student feedback called EPBM (**Chapter 6**).

Teaching and learning processes include course content, teaching process, teaching methodology, and teaching support equipment are also regularly evaluated by students each semester by filling out an evaluation form. Evaluation of the teaching and learning process in IPB University is always carried out at the end of the semester through the mechanism of distributing the questionnaire to the students, called Evaluation of Teaching and Learning Process (EPBM) as inputs for the improvement of teaching and learning process of the next semester. Nowadays, the EPBM is carried out 2 times at mid and end of semester. Based on the result of evaluations (NFT and APT); (TMA and SVC) all of the lecturers can deliver the lecture material using teaching methods.

An on-line evaluation to obtain feedback from students and to measure their level of satisfaction during their studies before graduation. This on-line evaluation data is stored, processed, and evaluated by the Quality Management Office of the IPB and disseminated to each degree program. This process is done to ensure academic quality management at the University level. The satisfaction level questionnaire is made available by degree program to measure the satisfaction levels of the student after their accomplishment of study. Monitoring, support, and feedback, and mentoring were assessed periodically to find out the best practice in achieving national and international standards. Therefore, students get adequate academic advice, support, and feedback for their academic performance.

To enhance lifelong learning, which is an essential challenge for inventing the future of our societies. Accordingly, all degree programs encourage students to be active in extracurricular activities. In this activity, students have the opportunity to compete for grant research through Student Creativity Program (PKM, *Program Kreativitas Mahasiswa*). PKM provides students opportunities to develop their skills, expertise, and to improve teamwork skills. Thus, PKM can be experimental research for students before they do their thesis research. Appointed Faculty members assist students to prepare their PKM proposal, and if their proposal is accepted the faculty members will supervise the students' works, and prepare their reports for presentation.

Research conducted for Final Year Project is started in semester 7. A student is supervised by the supervisor commission consisting of the head of supervisor and one member of a commission. Students have to propose their supervisors at the end of their 6<sup>th</sup> semester. They have to fill out the thesis submission form and also provide their topics and supervisors. The Head of Department issues an assignment letter to the thesis supervisors. After the lectures get the letter of assignment as thesis supervisor, they will assist students to prepare a proposal and conducting researches. Students should do and organize the seminar of their proposal. They are expected to learn how to present their

papers to others/the public. The undergraduate thesis will be assessed based on their end product/report and an oral presentation/defense.

To support the academic atmosphere for lectures, lab work, research, seminars, and discussion rooms the adequate infrastructures are provided in each degree program. The lecturers' rooms are located near or inside their respective laboratories, thus facilitating research activities, discussion and student counselling. Each Degree Program has special rooms for student seminars, thesis examination, and academic commission affairs. Student discussion room is also available in each laboratory so that it can be shared by students. Adequate laboratories for analytic and field work were also available. New tools and facilities for students' practicum activities have been continuously improved by the department to ensure high learning quality. Integrated practicum facilities such as fish ponds at a commercial scale, Gunung Walat Educational Forest (GWEF), Jonggol Animal Science Teaching and Research Unit (JASTRU), and new laboratory equipment are also available and improved to support the achievement of student's competencies and to enhance student's exposure to industrial word and advanced technology. Detail of facilities and infrastructure to support and practicums to achieve the PLO are described in **Chapter 4**.

## 2. Exams: System, Concept & Organisation

### Criterion 2. 1 System and concept

The assessments of teaching and learning in achieving the learning objectives must follow the Standard Operational Procedure (SOP). It is the implementation of the Rector Decree No. 8/IT3/DT/2016 on examination and evaluation of courses for the undergraduate program.

There are three types of exams that are devised to measure students have reached the learning outcomes consist of class course exams, off-class course exams, and final undergraduate exam in NFT, TMA and SVC degree program, specifically for the APT SP plus undergraduate pre-research exam. Type of assessments is presented in **Table 2.1.1**

Table 2.1.1 Type of assessments for undergraduate students in NFT, APT, TMA and SVC degree program

No	Types	Components	PROPORTION (%)			
			NFT	APT	TMA	SVC
1	Assessments for class courses	- Midterm and Final exam	60	60	60	60
		- Assignments/task	30	30	30	30
		- Quizzes	5	5	5	5
		- Attendance	5	5	5	5
2	Assessments for off-class courses	- Assessment component (attendance, discipline, initiative, activeness and teamwork)	30	30	30	30
		- Oral examination	30	30	30	30
		- Final report	40	40	40	40
3	Assessments for undergraduate pre-research*	- Seminar draft - Presentation and discussions		50 50		
4	Assessments for undergraduate theses (final project)	- Undergraduate thesis draft	50	50	50	50
		- Discussion	30	30	30	30
		- Presentation	20	20	20	20

Structure of curriculum is knowledge, skill and competencies-based with total credit points of 144-160 for study period 8-12 semesters. This curriculum is arranged to generate graduates with learning outcome at level 6 in accordance with Indonesian Qualification Framework. Evaluation of learning outcomes is organized and set forth in a document of

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Standard Operating Procedure (SOP) at Faculty refer to IPB level. Regulation of summative test for student assessment is managed on "[SOP-IPB-S1-9 Exam and Academic Assessment Implementation](#)".

The student assessments standards, including the rules for make-up exams, non-attendance, cases of illness, are explicit and communicated to students through:

1. Undergraduate Guideline Book that is delivered to all students and lecturers every year
2. Soft file SOP student assessment can be accessed by all stakeholders on <http://kmmmai.ipb.ac.id/standar-mutu-ipb/pob-sarjana/?hilite=%27POB%27;>
3. Student assessment planning in each course is socialized and agreed with students through "course contract" approval at the beginning of each course. Form of course contract is made by degree program compile with student attendance list
4. The student assessment construction of each course is implemented consistently based on the syllabus.
5. Form of exams implemented can be administered in a conventional way, that is classroom exam and online exam by 'centralized learning and aptitude support system (Class) via <https://class.ipb.ac.id/>.

Exam questions are provided by person in charge of the course and lecturer team of a particular course and approved by head of division, afterward they are verified and validated by a team of Quality Control Circle in accordance with the conformity with Semester Learning Plan and question types variation.

The assessment methods in each course are varied on type and time, except written exams (midterm and final exam) that are scheduled for all courses. Student assessments including timelines and methods are explicitly described in the program specifications as well as in the course syllabus that published on <https://class.ipb.ac.id/> are made available for students. The examination timeline is issued by IPB (Directorate of Administration and Academic/Dit. AP) at the beginning of the semester. Examples of exam schedules are available in <https://simak.ipb.ac.id/Publik/JadwalUjian>.

Team teaching to develop assessment methods related to course topics, such as midterm exam to assess course topic from 1-7 weeks and final semester exam from 8-14 weeks. Student attendance must meet the minimum of 80% for lectures, and 100% for practicums is a term to take the exams. The timeline for exam met the workload of the study. Prior to exam, the study week (one week) is provided in order to a better preparation for the exam. The follow-up exam is a test held if the student cannot take the exam due to legitimate reasons and accompanied by a valid certificate (doctor's certificate, a medical certificate from a parent/guardian, and a certificate from the institution) approved by the Head of Departement. Students can take a follow-up exam according to the schedule set by the department or course coordinator. The specific exam management (e.g., date of exam, correction time) had no negative effect on the study progress due to the well- organized scheduling.

Evaluation of student assessment methods is conducted after the learning process, i.e.:  
1) lecturers meeting at the end of each semester and 2) student satisfaction of examination result. Students can access the result from the correction of exam paper or grade



information on class.ipb.ac.id. Students are allowed to make a complaint about dissatisfaction and to take the solution to the course coordinator. Students are allowed to fill a complaint note of written examination results and discuss them with the course coordinator. If there is a mistake in assessing the test file then a re-calculation of test scores can be done. In addition, students are also allowed to take remedial examinations 2 weeks after the exam's scores are published. The course coordinator will schedule a remedial exam and inform all students. Students who can perform a remedial exam if the value obtained was a D or E score. The value given to the student is selected from the best value after the improvement test.

Grading is decided by course coordinators that should be handed to the degree program admins and announced within two weeks after the exam. Students who have not completed all of the assessment will be had the status of incomplete grade (BL) from the Coordinator of course.

### **Criterion 2.2 Class Course Exam**

Student's requirement to be able to take exam are mentioned in IPB University Undergraduate Guide Book. A minimum of student's presence in lecture classes of at least 80%, and the presence in practical classes of 100%. The course exam is performed in two stages, namely Middle of Semester Exam (UTS/Ujian Tengah Semester) and End of Semester Exam (UAS/Ujian Akhir Semester). Types of exam questions and problems are categorized into several types, namely correct and false statements, multiple choices, brief filling in, statement matching, and essay. Exams are also conducted both for the subject courses and practical classes. Exam questions and problems are made to measure the level Learning Achievement (CP). Multiple choice questions provide several alternative answers to be chosen out of the best, to measure more learning outcomes in one exam session by presenting lists of similar choices to be distinguished and reduce guessing factor in simple alternative choices decision (such as in correct/false questions). Correct/false questions are used to test the ability in identifying the correct fact or opinion statements, identifying correlation (including the cause), identifying attitude, value and belief, identifying situations of principles apply. Matching questions are used to test a more extended material understanding by filling in empty columns used for memory exam by reducing the possibility of guessing the answers. Essay questions are aimed to test the ability to apply, analyze, synthesize, or evaluate relevant products, processes, information, ideas, or procedures. Essay question forms are mostly given on course exams. Question depth is varied from C1, C2, C3, C4, C5, or C6 according to Bloom Taxonomy.

Variation of question type is also based on learning outcome of each course. The percentage of question form are considered by the teaching team to be particularly suited to verify the achieved learning outcomes. Course coordinators fulfill the calibration of exam questions and Quality Control Unit verifies the questions depend on compatibility to learning outcomes. Student assignments consist of practical report, final paper, student

presentation and final practical test. Most of the courses give student assignment in each topic of practicum and some courses asked the students to present a final paper and/or oral presentation. Rubrics assesment is applied to assess course tasks that weight distribution are also varied.

Table 2.2.1 Composition of Each Element

No.	Exam composition	Approximate Percentage			
		NFT	APT	TMA	SVC
1	Course exams (mid-term exam and final exam) : Multiple choice, True/false, Matching, Short answer, Essay	65-70	60-70	55 – 60	50-60
2	Practical Work	20	20-30	30 – 35	30-40
3	Student Assignment	10-15	10-20	10	10

When students cannot take the exam at the specified time because of any valid and justifiable reasons (because illness or urgency and emergency cases) they are allowed to take a make-up exam which takes place after the mid-term exam and final exam time schedule. Another exam that held if necessary is an improvement (remedial) exam. Remedial is an exam provided by the lecturer(s) of certain course where the participant's score have not met the assessment minimum grade. The make-up and remedial exams can be held a week after the scheduled exam finished. There were not many experiences handling students with disabilities and unable to fulfill exam requirements. When special cases were found, the teaching team discussed to assist them so that the problem in taking the exam can be solved.

### Evaluation Criteria

The evaluation criteria for student presentation and final paper are identified and presented in **Table 2.2.2** and **Table 2.2.3**, respectively.

Table 2.2.2 Evaluation Criteria for Presentation Task

Aspects	Criteria
Quality of Power Point	Systematic and clear presentation
	Efficient, informative (not wordy)
	Describe with Tables, Figures are important
Topic comperehension	Information is delivered very clearly

Aspects	Criteria
	Strong background, up dated and relevant cited references, clear and correct conclusion
	Use language/bahasa well
<b>Presentation Technique</b>	On time presentation
	Loud and clear pronunciation
	Self-confident, on camera
<b>Discussion</b>	Very clear and correct explanation
	Active discussion
<b>Group Collaboration</b>	Able to deliver the task
	Good collaboration in discussion

Table 2.2.3 Evaluation Criteria for Practical Final Paper

Aspects	Criteria
<b>Reference</b>	Total citated from Journal
	Citaded from International journal
	Published less than 5 years ago.
<b>Writing Skills</b>	Able to put the idea into writing well
	Use language/bahasa well
	Information through Graph and Table is delivered obviously
<b>Contents</b>	Systematic content and have key features
	There were definition and aim of project
	Discuss methodology clearly
	Deep discussion and critical opinions
	Conclusion and suggestion are short and clear

The academic calendar is announced by the University including the timeline for Class exams and collecting the Course's grades which takes place 2 weeks after the End of Semester Exam finished. Official letter from Vice Rector 1 is sent to each degree program for reminder. The grades are expressed with the Quality Letter/Huruf Mutu/HM). Exam results will be announced through application of **IPB Mobile for Student** and also through website [studentportal.ipb.ac.id](http://studentportal.ipb.ac.id).

### **IPB University Standard Grading Criteria**

The exam score of each subject course is expressed in absolute numbers / figures, ranging from 0 to 100. Results of final assessment of a subject course is expressed in Quality Letter (HM) and Quality Figures (AM) namely: A = 4; AB = 3,5; B = 3; BC = 2,5; C = 2; D = 1; and E = 0.

### **Criterion 2.3 Off-Class Exams**

#### **2.3.1 Community Service Program**

IPB Community Learning Program (KKNT) become a medium for students to obtain experience of learning together with people community outside campus for 1 month, which is accompanied Field Guidance Lecturer (DPL) which has been determined by IPB. Activities of KKNT refer to [IPB Rector Decree No 3/IT3/PN/2017](#) and [Guidelines for KKNT](#) of IPB. The student completed at least two courses outside the institution, i.e, Community Service Program and Field Practice Courses. Other off class courses which conducted in several degree program, i.e, laboratory works and internship in the farm or company. Assessments of off-class courses focus on the assessment scale for student hard skills as student effort to improve their skills during field or laboratory works, and soft skills evaluation whether students are able to develop soft skills, especially in teamwork, leadership, communication, responsibility, group report making, and presentation.

The learning outcomes of Community Service Program are as follows:

- a) Students are able to identify, plan, implement and evaluate community empowerment programs in the field of agriculture in a broad sense, agriculture-based industry and the environment in an integrated manner (multi and inter-disciplinary between professions at IPB).
- b) Students have high concern and commitment, are skilled at communicating, and collaborate between professions to contribute in overcoming problems that exist in society.
- c) Students are able to initiate and develop a network of stakeholder cooperation in an effort to solve problems to meet the needs of the dynamics of actual life in the community.

d) Students have a sense of caring and empathy for the problems faced in society, as well as an understanding of the customs and culture of the community as well as national insight.

Community Service Program and field practice course assessment involves proposal, student activity that is evaluated by field supervisor from farm or the companies, final presentation, and final report. Community Service Program is conducted by students at the beginning of the 7<sup>th</sup> semester as a field study to identify problems, interact with people, work together in teams, and practice how to solve problems and find the best solutions to problems in the field.

The test/evaluation carried out is to ensure that the Community Service Program learning outcomes can be achieved. The assessment is based on the results of the preparation exam, field implementation, final exam and the group report of the Community Service Program. The assessments component for Community Service Program are attendance (25%), initiative (25%), individual performance (25%) and teamwork and collaboration (25%). Community Service Program has scores in the 70-100 point range for those 4 components. Community Service Program has 4 credits and the assessment process for Community Service Program activities is presented in the [Assessment of Community Service Program](#). The test/evaluation carried out is to ensure that the Community Service Program learning outcomes can be achieved. [The assessment](#) is based on the results of the preparation exam, field implementation, Community Service Program final exam and reports. Determination of final grade is determined based on the average value as follows:

Table 2.3.1 Determination for Grade of Community Service Program

No.	Average Score	Final Grade
1	≥ 80	A
2	75 - < 80	AB
3	70 - < 75	B
4	60 - < 70	BC
5	55 - < 60	C
6	45 - < 55	D
7	< 45	E

### 2.3.2 Field Practice Course

The other off-class activity and exam is Field Practice Course. Field Practice Course are conducted for students who have followed learning process up to 4<sup>th</sup> semester for SVC, 6<sup>th</sup> semester for NFT. The activities are initiated with provision of briefing classes to the students in relation with preparation for practical classes in the field. Besides that, there are also quizzes which should be followed by all students. Students are divided into groups

and are distributed to several locations of practical classes. In the end of the session, students are obliged to submit final report and follow examination of field practical classes or Field Practice Seminar for TMA SP Students. Field practice assessment involves proposal, student activity that is evaluated by field supervisor from farm or the companies, final presentation, dan final report. After finishing the program, student presented the final report and the assessment conducted by field and academic supervisors. Field practice supervisor evaluates for the technical skills and soft skills, especially in teamwork, leadership, communication, responsibility. Academic supervisor graded the presentation (Power Point quality, topic comprehension, presentation technique, and comprehensive answers of questions) and final report (writing skills, contents, and spesific topic). The presentation and final report of field practice are evaluated in a rubric. The Field practice assessments are the average scores of assessment component (30%), oral examination (30%) and their final report (40%). While the assessment component is attendance (20%), discipline (20%), initiative (20%), activeness (20%) and teamwork/collaboration (20%). Determination of the final grade of Field practice for each students is based on the following criteria:

Table 2.3.2 Determination of Grade of Field Practice

No.	Score Class	Grade
1.	$\geq 80$	A
2.	$\geq 75 - < 80$	AB
3.	$\geq 70 - < 75$	B
4.	$\geq 65 - < 70$	BC
5.	$\geq 60 - < 65$	C
6.	$< 60$	D

### 2.3.3 Forestry Field Practice Classes (PLK)

Forestry Field Practice Classes (PLK) is a student academic activity organized and conducted by the Faculty of Forestry and Environment of IPB University. The scope of PLK comprises an introduction to forest ecosystem types, an introduction to the flora-fauna richness of each forest ecosystem, and an introduction to forest management activities. The learning achievements of PLK are as follows:

1. Students are able to identify forest ecosystem types, including their components, interaction, process, role, and functions of each forest ecosystem type in Indonesia, ranging from coastal to mountainous areas.
2. Students are able to identify and measure the parameters of components of ecosystems, ranging from coastal to mountainous areas.

3. Students obtain practical experience in forest management, with deepening and enhancement of comprehension of concept and theory, through information collection and understanding of the theory implementation by the local forest management units (State Owned Forestry Company, Conservation Area, Wood, and non-wood processing industry, and people community); and development of technical ability through working by applying theory in the practical class location.
4. Students obtain and develop personality, teamwork ability, work ethics, and professional ethics.

For evaluating the learning achievement of PLK, there will be conducted Quiz of pre-field practice, practice implementation in the field, practice implementation report, and practice material quiz with score weighting as shown in Table 2.3.3:

Table 2.3.3 Score Assessment of Forestry Field Practices

No.	Assessed Parameter	Weight (%)	Weight of Total Score (%)
1.	Quiz of pre-field practice		15
2.	Practice implementation in the field.		30
3.	Practice Implementation report		40
	(1) Completeness of the report	20	
	(2) Facts presented	30	
	(3) Discussion	30	
	(4) Conclusions and suggestions	20	
4.	Practice material quiz		15
Total Score			100

Students are obliged to make the final report as one of the indicator of Learning Achievement (CP). The assessment team (lecturer and field assistant) is evaluated by completing the assessment forms. Determination of the final grade of PLK for each students is based on the following criteria:

Table 2.3.4 Determination of Grade

No.	Score Class	Grade
1.	≥ 80	A
2.	≥75 - < 80	AB
3.	≥ 70 - < 75	B
4.	≥65 - < 70	BC
5.	≥ 60 - < 65	C
6.	< 60	D

### Criterion 2.3.4 Internship

Internships are independent activities carried out by students in private institutions, research institutes, forestry industries, government agencies, non-profit organizations, multilateral organizations and other institutions, both nationally and internationally. Internship activity refers to [Guidelines for undergraduate program](#). Internship academic load is based on calculation of assignment load which equals with 4-5 hours (4 – 5 times 60 minutes) activity per week in one semester, or equals with 204-255 hours. Students can do internships for 2 to 3 months. The implementation of the internship aims to guarantee the implementation of internships through providing students with experience to learn directly in the workplace, both aspects of hard skills (complex problem solving, analytical skills, etc.), as well as soft skills (professional/work ethics, integrity, communication, collaboration, etc.).

[The assessment](#) is carried out based on Fulfillment of Learning Hours and attendance, Internship Selection Process, Field Assessment by lecturers and partners, Activity output, Final report assessment and presentation. Here are the official report of internship of [NFT and APT](#); [TMA and SVC](#). The weights and assessment standards are as follows:

Table 2.3.5 Standard for internship assessment

No.	Description	Weight	Assessment Standard
1	Fulfillment of Learning attendance  Hours (activity hours) and	Pre-condition	<ul style="list-style-type: none"> <li>✓ Fulfilling activity hours according to the number of credits from the recognition Court</li> <li>✓ Meet the number of attendance from the requirements determined by the EC activity manager</li> <li>✓ Internship period of 6 months</li> <li>✓ Planned systems and recognition</li> </ul>



No.	Description	Weight	Assessment Standard
2	Internship Selection Process (Pre-activity)	15%	<ul style="list-style-type: none"> <li>· Approved by the activity supervisor and student's parents</li> <li>· Passed the internship selection from the company</li> <li>· Complete the required files</li> </ul>
3	Field Assessment (Based on the assessment form) by the supervisor (50 percent) and partners (50 percent)	50%	Based on the assessment form, minimum attendance of 80%
4	Activity output (Daily, monthly reports)	20%	Weekly reports, daily reports, and monthly reports
5	Final report assessment and presentation	15%	Final report in the form of papers and presentations

Table 2.3.6 Assessment criteria

Criteria	Assessment criteria			
	<60	60-69	70-79	80≤
Attendance Activity	Attendance less than 50%	Attendance 50%	Attendance 51% - 75%	Attendance 76% - 100%
Activity Outputs	Final Reports, Reports	Final Reports, Reports	Final Reports, Reports	Final Reports, Reports
Skill	Show competence/skills: creativity, critical thinking, solution to problem complex, communication, collaboration (less)	Show competence/skills: creativity, critical thinking, solution to problem complex, communication, collaboration (good)	Show competence/skills: creativity, critical thinking, solution to problem complex, communication, collaboration (good)	Show competence/skills: creativity, critical thinking, solution to problem complex, communication, collaboration (very good)
Attitude	<ul style="list-style-type: none"> <li>· Discipline</li> <li>· Responsibility</li> </ul>	<ul style="list-style-type: none"> <li>· Discipline</li> <li>· Responsibility</li> <li>· Initiative</li> </ul>	<ul style="list-style-type: none"> <li>· Discipline</li> <li>· Responsibility</li> <li>· Initiative</li> <li>· Persistence</li> </ul>	<ul style="list-style-type: none"> <li>· Ethics</li> <li>· Professional</li> <li>· Discipline</li> <li>· Responsibility</li> <li>· Initiative</li> <li>· Public speaking</li> </ul>

## Criterion 2.4 Undergraduate thesis

The primary requirement for an undergraduate student to earn a Bachelor's degree at IPB University is conducting a final project and writing an undergraduate thesis. This task is important to demonstrate and encourage the independency of the students. Their scientific work is based on empirical studies, research, or internships. The final undergraduate exam is conducted based on the [SOP-IPB-S1-15 Final Study Assesment](#) and [SOP-Final Assignment Implementation](#) from NFT SP and APT SP, [Quality Management System ISO 9001:2015 of the Faculty of Animal Husbandry, and Faculty of Fisheries and Marine Science IPB University](#), [Dean Decree No. 1331-IT3.F4-HK.00.02-2019 \(NFT and APT SP\)](#), [Dean Decree No. POB FPIK 05/2018 \(TMA\)](#) and [Dean Decree No. 09/IT3.5/HK.00.02/2018 \(SVC\)](#). In the NFT, students have to pass the preliminary exam to evaluate their basic competencies. Thesis writing aims to introduce and train students to gain potential in science and technology and solve problems encountered in the field. Data for the thesis can be obtained from research design or internships. There are two types of research: experimental-based and non-experimental-based research, such as a survey study by distributing questionnaire forms. Both the laboratory experiment and the field research are classified into experimental research. The source of experimental research is primary data or a combination of primary and secondary data. However, non-experimental research lacks the manipulation of an independent variable, random assignment of participants to conditions or orders of conditions, or both. Three important types of non-experimental research are correlational, quasi-experimental, and qualitative. Furthermore, the research design is the plan, structure, and strategy of investigation conceived to obtain an answer to the research question and test the hypothesis that covers either social, economic or engineering designs.

Research for undergraduate thesis started in semester 7. The realization of the activity and write-up of the thesis performed under the supervision of a full-time department lecturer as a primary supervisor and can be added up by a secondary supervisor from the same department or another department or from outside IPB University. Supervision can be done in the case of research performed outside of the university by inviting outside supervisors with specific requirements (i.e., expertise in such field and holding a bachelor's degree at minimum). The requirements are designed to ensure the quality of the undergraduate thesis is met. The supervisor is appointed by the Dean and is proposed by the Head of Department. Assessment components of experimental research for the Bachelor' Final Exam are undergraduate thesis draft, discussion, and presentation. Passing grades for the final exam marks are as follows: (A) if average score =  $\geq 80$ ; (AB) if average score =  $\leq 75 - < 80$ ; (B) if average score =  $70 - < 75$ ; and (C) if average score =  $60 - < 70$ . Below 60 = Re-exam once.

The final undergraduate exams consist of 2 courses: the seminar course (1 credit) and the final graduate examination (6 credits). The courses schedule depends on the individual's ability to complete both courses. The final project is available for students that have fulfilled a minimum of 105 credits in the compulsory undergraduate program.

The seminar course is conducted to discuss a scientific topic from proposal writing, literature study, or research result in the student's and lecturer's forum. Seminar course assessment is weighted 40% for writing tests (review, discussion, and references) and 60% for oral (communication and presentation) and evaluated using the rubric. The seminar takes about an hour to evaluate student presentation and the ability to answer the questions from the seminar audience and examiner. The supervisors give feedback at the end of the section.

The standard rules of the Final Undergraduate Examination are presented in Undergraduate Guidance Book with some detailed procedures for TMA SP, which are available in the SOP Faculty level and Quality Management System ISO 9001: 2015 of the Faculty of Fisheries and Marine Science IPB University No. POB FPIM 05. The Final Exam is conducted after completing the Seminar course. The final undergraduate exam for SVC SP is carried out after the student has passed all the required courses, passed the seminar on the results of the final project in the form of a thesis, and has collected at least 138 credits (= 5.52 ECT) with an average GPA from all courses of at least 2.00 per competency group (inter-departmental, major, minor, except for the PKU Program), no courses with an E grade, and be an active student in the current semester. The learning outcome of the undergraduate final exam is that students can understand and master their final project and have adequate general knowledge of forestry.

The Final Undergraduate Examination assessment is weighted 60% for writing (introduction, research method, discussion, and research topic novelty) and 40% for oral (presentation technique, discussion, communication, and scientific knowledge). The final undergraduate exam is a comprehensive exam in which the exam lasts approximately 2 hours. The final graduate examination uses mostly the oral method or writing (optional) of 4 examiners, consisting of 2 supervisors and 2 lecturers (non-supervisors) as examiners. Non-supervisor examiners comprised 1 guest examiner for all degree programs and 1 representative of the degree program (for TMA and SVC) or the addition of a guest examiner (for NFT and APT). The additional guest examiner can be from another degree program which the Chairman of the Examiner Boards determines. If the student earns a C grade for a final graduate examination, the assessment must be repeated.

Progress reports are prepared by the students and monitored by the supervisor every semester to assess students' progression in their thesis research. Immediate feedback/comments on specific aspects of the research or technical problems are provided to the students. For seminar courses, feedback on student presentation strengths and weaknesses is made in verbal comments of lecturers and other students at the end of the seminar.

The final exam results are determined based on the results of the assessment by the examiners with the following assessment proportion:

Table 2.4.1 Assessment weights for the Final Undergraduate Exam

No.	Examiner Team	NFT	APT	TMA	SVC
1	Main Advisor	25%	35%	35%	35%
2	Member Advisor	25%	35%	30%	25%
3	Outside Examiner/ Advisory Commission	50%	30%	20%	30%
4	Degree program representative/Chairman of Examiner Boards	-	-	15%	10%

Table 2.4.2 Average value along with quality letter

No.	Average Score	Final Grade
1	≥ 80	A
2	75 - < 80	AB
3	70 - < 75	B
4	65 - < 70	BC
5	60 - < 65	C (Not Passed)

a student does not pass the exam, they can take a remedial exam within 1 month or at least 3 months after the first exam is conducted.

Honors of commencement of graduation is an academic award for achievement made by a student while they have been a student at IPB University. Table 2.4.3 presents information about the predicates and their graduation requirements.

Table 2.4.3 Graduation predicate guideline

Graduation Predicate	GPA	Criteria
1) Cum Laude (CL)	GPA ≥ 3.51	All credits obtain from bachelor program in IPB
		Never take the same course twice and never cancel minor or supporting course with E marks
		No D marks

Graduation Predicate	GPA	Criteria
		Maximum one C mark only in supporting course
		Less than or equal to 5 years
		Never had written academic sanction
2) Very Satisfactory (SM)	$GPA \geq 3.51$	Not fulfilled Cum Laude (CL) conditions
	$2.76 \leq GPA < 3.51$	No D marks
		Never take the same course twice and never cancel course with E marks
		Less than or equal to 5 years
		Never had written academic sanction
3) Satisfactory	$GPA \geq 3.51$	Not fulfilled Cum Laude (CL) conditions
	$2.76 \leq GPA < 3.51$	Not fulfilled Very Satisfactory (SM) conditions
	$2.00 \leq GPA < 2.76$	

### Criterion 2.5 Organization

Student assessments including timelines and methods are explicitly described in the program specifications as well as in the course syllabus that published on <https://class.ipb.ac.id> are made available for students at the beginning of the new academic year. The examination timeline is issued by IPB University (Directorate of Administration and Academic/Dit. AP) at the beginning of the semester. Dit. AP is responsible for the exam schedule, then it will be checked and verified by the all SP. the Department will check to ensure that all the course code, course name, PIC of the course are correct and make sure that no conflict exams scheduled in it. Any changes, the correction results will be sent to the Dit. AP. They will make the revision and send back to the Department to be announced. Two weeks prior to the scheduled exams, the Department will release the schedule to students and lecturers. Examples of exam schedules are available in <https://simak.ipb.ac.id/Publik/JadwalUjian>.

Exams involve primarily the teaching team. Course coordinator is the responsible person for the composition of examination materials. Prior to be given to the administrative staff, draft of the examination questions are developed, discussed, and verified among the teaching team. Teaching team to develop assessment methods

related to course topics, such as midterm exam to assess course topic from 1-7 weeks and final exam from 8-14 weeks. Student attendance must meet the minimum of 80% for lectures, and 100% for practicums is a term to take the exams. The follow-up exam is a test held if the student cannot take the exam due to legitimate reasons and accompanied by a valid certificate (doctor's certificate, a medical certificate from a parent/guardian, and a certificate from the institution) approved by the Head of Department. Students can take a follow-up exam according to the schedule set by the department or course coordinator. The specific exam management (e.g., date of exam, correction time) had no negative effect on the study progress due to the well-organized scheduling.

IPB University has a task unit to ensure quality standards of academic and non-academic services (administration and management), namely the Office of Quality Management (KMM-IPB) that responsible to the Rector of IPB based on the Rector's Decree Number 006/13/OT/2008 concerning the IPB Quality Assurance System 2008-2012). In addition, quality assurance is assisted by the Quality Assurance Group (GPM) for the Faculty level and the Quality Control Group (GKM) for the Department level. GKM Department is chaired directly by the Secretary of the Department.

The duties of the GKM Department are the following:

1. Monitoring the implementation of all academic and non-academic activities in accordance with applicable procedures, provisions, and legislation.
2. Monitoring the implementation of all academic and non-academic activities in order to meet the quality standards and quality targets that have been set.
3. Conduct an evaluation with the Head of the Department for earlier corrective action on the implementation of all academic and non-academic activities in the degree program.
4. Coordinate the preparation of self-evaluation reports in accordance with established standards and parameters.

The final examination questions draft then will be sent to GKM for validation in a special meeting program. Checking of the quality control of the exam questions among other is matching examination questions with the course learning outcomes. Verification of test questions is conducted by GKM.

Copies of examination materials and the corresponding answer sheets are prepared by the administrative staff in the Teaching Program. Course coordinator is requested to submit the examination materials at least one week before the scheduled exam. During the exam, *Minutes of Exam (Berita Acara Ujian)* has to be signed by Faculty members or other person in charge to supervise the Exam, students and administrative staffs and have to be reported to the Head of the Department. Examination answers from students are collected and sealed for transferred to the teaching team for assessment and marking.

The submission of the result, i.e. marking, should be announced two weeks after the exam date.

Evaluation of student assessment methods is conducted after the learning process, i.e.: 1) lecturers meeting of all degree program at the end of each semester and 2) student satisfaction of examination result. Students can access the result from the correction of exam paper or grade information on [class.ipb.ac.id](http://class.ipb.ac.id). Students are allowed to make a complaint about dissatisfaction and to take the solution to the course coordinator. Students are allowed to fill a complaint note of written examination results and discuss them with the course coordinator. If there is a mistake in assessing the test file then a recalculation of test scores can be done. In addition, students are also allowed to take remedial examinations 2 weeks after the exam's scores are published. The course coordinator will schedule a remedial exam and inform all students. Students who can perform a remedial exam if the value obtained was a D or E score. The value given to the student is selected from the best value after the improvement test.

Grading is decided by course coordinators that should be handed to the degree program admins and announced within two weeks after the exam. Students who have not completed all of the assessment will be had the status of incomplete grade (BL) from the Coordinator of course. If within 3 (three) days of the entry deadline (2 weeks after the exam period) the student has not completed the assessment component, Coordinator will provides zero value on the incomplete component and specifies the quality letter.

## **Criterion 2.6 Exams Transparency**

To ensure transparency for exams, information on the provisions for the assessment of the student is available in "Panduan Program Pendidikan Sarjana Institut Pertanian Bogor, Edisi Tahun 2020" (Guide to the Undergraduate Program of IPB University, Ed. 2020). This book is accessible at <https://simak.ipb.ac.id/Publik/BukuPanduan>. Methods to ensure transparency for students include:

### **2.6.1 Lecture introduction session and assignment instructions**

A specific assessment rule for each course is presented at the beginning of the course through a lecture contract signed by the lecturer and student representative. The final grade consists of student attending, examination and assignment. Examination grade comes from midterm and final exam grade. While, assignment grades come from quizzes, lecture assignments and laboratory work/practical assignments. Students can have opportuinites to discuss with the lecturer directly or submitting the complain forms. In addition, the exam results are shared in order to inform students how well they did the exam and how far they reach the objectives. The resluts and evaluation of final exam for bachelor

thesis are also provided. The external examiners and supervisors are providing the comments and feedback in order to improve the quality of final thesis.

### **2.6.2 Assessment rubrics**

The assessment rubric explains how to assess and grade exams and assignments. Assessment methods consist of lab reports, written examinations, oral presentations and debate/discussion. Grade criteria consist of excellent, good, acceptable, need improvement and fail.

### **2.6.3 Online grade information system through SIMAK**

The final grade will be uploaded to SIMAK by GKM



## 3. Resources

### Criterion 3.1 Academic staff quality

#### 3.1.1 Profile and competency of academic staff

##### 3.1.1.1 Academic Background

Lecturer's academic background is relevant to their qualification to run teaching and research activities in the university. The academic training should elevate the level of lecturers which further benefit their duties in the university. Accordingly, having academic background from reputable academic institutions benefits the lecturer by exposure to the higher quality education system, resources and facilities and influential networks. IPB University is one of top-leading University in the country. Accordingly, the lecturers are expected to be trained in at least same level of the academic institutions, or even better. In addition, the lecturers are also encouraged to have academic training in the developed country with better academic and research ecosystem. The system is expected to inspire the lecturers for further innovative and cutting-edge skills to deliver in their teaching and research in IPB University.

The qualification of the academic staff are suitable for successfully executing the degree programme, and this has been proofed by many academic staff has graduated from foreign universities. Table 3.1.1 showed the distribution of countries where the staffs received their highest degree. Academic staffs of the four bachelor degree programs (NFT, APT, TMA and SVC) were academically trained both nationally and international. In particular, academic staffs and SVC staffs were dominantly educated in foreign university (>50%). Meanwhile, 41.37% and 38.46 staffs of APT and SVC were graduated from foreign universities, respectively. The detail of foreign universities where the faculty members pursued their highest program is presented the Table 3.1.1. The department understands that international education is a Catalyst for Change of the world. Promoting the expertise of Faculty members for international academic atmospheres, through their international education, is therefore important. The foreign countries where the staff earned their highest academic degree include Japan, Germany, Australia, France, South Korea, Sweden, Swtizerland, Italia, Malaysia, Philiphine, Dutch, Belgium and UK. To note, those who received the degree from Indonesia were under IPB University. Notable, IPB University is under Top 62 under QS World University Ranking by Subject on Agriculture and Forestry 2021. Under this category, IPB University is also ranked as the best university among ASEAN countries.

Table 3.1.1 Distribution of academic staff studied in the country

Countries	% Academic staff studied in the country			
	NFT	APT	TMA	SVC
Indonesia	48,4	58,63	46	61,54
Japan	24,24	10,35	35	19,23
Germany	15,15	6,9		3,85
Australia	3,03	17,25		
France	3,03		4	3,85
South Korea	3,03			
Switzerland	3,03		4	
Italia		1,45		
Malaysia		1,45		7,69
Dutch			4	
Belgium			8	
UK				3,85

In addition, the composition of academic staffs are suitable for successfully executing the degree programme (Table 3.1.2). Currently, the NFT, APT, TMA and SVC employ total of full-time academic staff with different ranks/grades (See Table 3.1.2 for more detailed). Grade of lecturers reflect their quality, whereby the highly qualified lecturers should have promoted to the better grade. Indonesia recognizes four level academic grades, including lecturer, assistant professor, associate professor and professor. Promotion to the higher grade requires certain credit points earned from teaching, research (publication – innovation) and community empowerment activities. Higher credit points should be earned by the lecturers with more output activities. Consequently, higher grade lecturers indicated more achievements that the lower grade lecturers. Based on the qualification, each lecturer has rights and obligations as set forth in the Decision of the Minister of State Apparatus Utilization and Bureaucracy Reformation No. 17/2013 on Functional Position and lecturer number. Among these four bachelor degree programs, only SVC is dominated by professor, while NFT and TMA are dominated by Associate Professor by 43.47 and 50%, respectively. Meanwhile, Assistant Professor dominates academic staff grade distribution in APT. The NFT and SVC were dominated by professors by 33 and 36%, respectively. Meanwhile, Associate Professors dominated the TMA, while the most of

academic staffs in APT are dominated by assistant professor (See Table 3.1.2 for more detailed). There is no standard for the ideal ratio among the grades designated by the Ministry of Higher Education. Nevertheless, it is understable that this ratio is acceptable for the promotion rate of academic rank for the lower grade rank of professor to improve the professional performance of the study program.

Table 3.1.2 Distribution of academic rank of the academic staffs

Academic Position	Percentage (%)			
	NFT	APT	TMA	SVC
Professor	33.33	24.32	15.38	36.00
Associate professor	43.47	16.67	50.00	24.00
Assistant professor	18.18	33.33	15.38	20.00
Lecturer	18.18	25.00	19.23	20.00
Total	100	100	100	100

Promotion of academic position/lecturer position is an inseparable part of lecturer career development; thus, the assessment mechanism and promotion of academic position/lecture position will be integrated online. The assessment components in lecturer academic position comprise (i) main elements such as: education (including school education and education implementation (teaching), research (including research implementation and producing scientific/technology/art/literature works), and public services as well as (ii) supporting elements which are supporting activities to the lecturer main duties. The minimum total number of cumulative credits that must be met by each lecturer to be able to be appointed in academic position requires at least 90% (ninety percent) credit number from the main elements excluding education of Operational Manual for Promotion Credit Number Assessment/Lecturer Academic Position in 10 schools granted certificate/title and Pre-position Education and Training, according to [Permen PAN and RB No. 46 Year 2013](#) and [Permen PAN and RB No. 13 Year 2013](#) ; as well as supporting elements maximum requires 10% (ten percent) credit number or may not have.

In their science development, every lecturer is obliged to conduct research and public services with funding from either Directorate of Higher Education, Ministry of Education and Culture or independent research. To be able to have a certain academic position and/or rank, lecturers must meet the cumulative credit number with distribution of main elements and certain supplements (see Permendikbud Number 92 Year 2014). Lecturer is a profession requiring skills in teaching and supervising students either academic or personality, and able to explore and apply science and technology to improve people standard of living. A lecturer's quality will develop with teaching and supervising students experience as well as experience from science development and real-life application.

The academic qualification of faculty members is demonstrated in their outstanding track records on their faculty research and publication productivity for numerous scientific publications (journal, conference, or other events). These achievements have contributed to the desired level of education program. Moreover, this achievements have impacted to a certain academic position and/or rank as lecturers must meet the cumulative credit number with distribution of main elements and certain supplements (see Permendikbud Number 92 Year 2014). Lecturer is a profession requiring skills in teaching and supervising students either academic or personality, and able to explore and apply science and technology to improve people standard of living. A lecturer's quality will develop with teaching and supervising students experience as well as experience from science development and real-life application.

Table 3.1.3 shows the distribution of the H-index of the productivity and citation impact of the publications of Faculty members of the department. The index is taken from Scopus data which measure both the productivity and impact of the published work of a scientist or scholar. Overall, only few lectures in the degree programs have no H-index which is mostly are young lecturers who freshly recruited after their Bachelor or master's degree. To note, recruitment process for new lecturers in IPB University, as well as in other universities in Indoensia, is open for Bsc and MSc holders, whereby after the recruitments, they will be requested to pursue their higher degree in the field needed by the Degree programs. BSc graduates are typically have no publication throughout their study. Meanwhile, some M.Sc graduate are having at least 1 indexed publication (as the graduation requirement), but the H-index was not recorded due to time-taken for the publication to be cited by others. In general, most of the department staffs are having H- index in Scopus which indicated that they are scientifically qualified to teach science-based teaching.

Table 3.1.3 Distribution of H-index

	No H-index	H index of 1 - 2	H index of 3 - 5	H index of 6 - 8	H index of 9 - 10	H index of 11 - 12	H-index 13-15	H-index > 15
NFT	1	9	9	10	1	0	0	1
APT	6	14	8	5	3	0	1	0
TMA	1	8	7	5	1	2	2	0
SVC	3	7	8	4	4	0	0	0

In line with H-index records, the citation record of each department also indicated that most of staffs are well cited in their publication records during the last 5 years (2016-2021). As H-index record, only few lecturers in each of department have no citation under Scopus Database. Citation number reflects the impact of scientific works of the lecturers to other people works. Citing the papers might imply that the work is relevant to be refer in the scope. To note, citation under Scopus Database is limited to only the number of citations by other scientific reports indexed in Scopus Database. The citation outside of this database is therefore not counted. Accordingly, there is possibility that the staff with have no citation under Scopus database are having citation in other database (Google Scholar, or others). Nevertheless, most of lecturers are having citation records under Scopus Database, with some lectures having more than 150 in their citations. This strongly indicated that the academic staffs are indeed having scientific qualification to run the academic teaching in the department.

Table 3.1.4. Distribution of Citation (2016 – 2021)

	No citation	1 - 10	11 - 25	26 - 50	50 - 75	76 - 100	101- 150	151 and above	Overall citation
NFT	1	6	6	3	2	2	3	8	1528
APT	9	9	3	5	1	1	1	8	3511
TMA	2	6	6	4	2	2	1	3	1511
SVC	2	5	5	3	2	3	1	5	1005

To note that the H-index and number of citations are not the only parameters during the staff recruitment. The staff recruitments by reference to the regulation on Civil Servants recruitment system, which is by referring to the [Law of Staffing Principles No. 43](#)

of 1999, Law of Employment No. 13 of 2003, PP No. 11 of 2002, MWA stipulation No.17/MWA-IPB/2003 on ART-IPB Bab XII (IPB 2004) and Standard Operational Procedure of IPB Code POB SDM-1. The system applied in IPB is open recruitment announced in the Employment Services Office, IPB website and printed media with available qualifications and positions. The recruitment conducted was based on the suggestion of lecturers needed by the working unit, announcement of new lecturers' allocation recruitment by DIKTI, written exam stage, competency exam stage, and interview stage.

The lecturers' recruitment was conducted by considering the prospective lectures' competency and scientific relevance. Lecturers who applied could come from inside or outside the institution with minimum GPA 3 for bachelor degree and minimum 3.5 for master degree. In 2007, formation for IPB prospective lecturers was having master qualification. The prospective lecturers who administratively meeting the requirements, who were passing 3 stages of exam including written exam, Academic Potential Exam, and Intellectual Potential Exam (psychological exam), then were interviewed relating to their competency. The recruitment system in 2014 referred to the Notice Number 106760/A4/KP/2014 on the civil servant recruitment candidate selection (CPNS) Kementerian Pendidikan dan Kebudayaan (Ministry of Education and Culture 2014). The recruitment stages were selection opening, formation announcement, registration, 3-stage selection process, Basic Competency Exam, administrative exam, field competency exam. The candidates passing the selection then participated in document stage and obtained NIP so they were entitled to hold CPNS status. Lecturer candidates whose competency meeting the requirement proposed by the Department to IPB would be assigned to the corresponding positions. New staff recruitment was to meet the need of lecturers and long-term education process continuity.

The academic staffs are sufficient to perform individual subject-specific and general counselling, supervision and support of students. This information is supported by the ratio between the number of lecturers over total students as well as the ration between the number of lectures per lecturer over the total students and students in final year are presented in Table 3.1.5. The ratio of students and lecturers stipulated by the Ministry of Higher Education is in the range of 1:30 (for science) oor 1:45 (for social science). As shown in the Table 3, the ratio of lecturers: students in all department are lower than 1:30 (ranging from 1:9 – 1:16), which indicated that the ratio of all degree programs are ideal. Furthermore, the ratio of student final year and lecturers are ranging from 1:3.5 to 1:5. This ratio refers to number of students conducting the final year project for the thesis per lecturer. There is no standard ratio for the final year project students per lecturers, nevertheless, the ratio of all degree programs were considerably good to allow the lecturers to focus on the person-to-person supervision process. Process of new lecturers in the degree programs also often be conducted to meet the ideal ratio.

Table 3.1.5. Ratio of students and academic staffs (as of 2020/2021 academic year)

Degree Program	Ratio of students and lecturers	Ratio of student final year and lecturers
NFT	1 : 12	1:4
APT	1: 12	1:4
TMA	1 : 16	1 : 5
SVC	1: 9	1 : 3.4

For quality improvement, the academic staffs have the opportunity to further develop their professional and didactic skills and these have been supported by the departments. For example, the staff of each department have become members of a various national and international professional organizations. In addition, they have also actively participated in various scientific meetings (conferences, symposiums, workshops, and other related events) to share their academic/research works and learn advanced knowledge from their colleagues. Those events also enabled them to initiate and/or strengthen their networks for further academic/research collaboration which will be beneficial for their teaching activities. In some cases, under the established networks some faculty members had opportunities to invite guest lecturers related to their projects. In line with the continuous quality improvement spirit, the department also actively distribute information pertaining to the research projects opportunities, calls for conferences/workshops, trainings courses and other relevant events. Furthermore, the DAPT also assigned some of its Faculty members to undertake certain training courses to improve their skills, and also to improve their professional performance. Recently some Faculty members have participated in some professional and research programs (outbound), under the sponsorships of IPB University or other funding organizations.

In order to contribute adequately to delivery the degree programme, the degree program have regularly reviewed of the subject-specific and didactic qualifications of the lecturers. The evaluation of quality of Faculty members' teaching at the end of the learning activities students are assigned to assess their teachers' teaching methods utilizing the Teaching and Learning Process Evaluation (EPBM, *Evaluasi Proses Belajar Mengajar*). The average score was higher than 3.00, and it is categorized as competent Faculty member. Monitoring and evaluation of lecturers are also conducted by utilizing Lecturer Performance Review (BKD, *Beban Kinerja Dosen*). For Staff members at IPB University, their monitoring process is guided by Employee Performance Evaluation (SKP, *Sasaran Kinerja Pegawai*) to evaluate the Staff members performance, as to how they serve students in the classes, in practical works, research projects, academic workshops, and extension services.

To support the academic staffs' sustainability, DAPT allocated about IDR 1,4 billion annually for supporting activities related to staff quality development, bonus and others.

In executing the academic activity, the appointment letter is officially issued by the Dean which covers the descriptions of the Faculty members, as follows: (1) A Faculty member for certain courses/subjects; (2) A supervisor for the student's final year projects; and (3) Examiner for the final year projects; and (4). Other relevant academic activities. The appointment basis for all staff that they should be a person suited by reason of his qualifications. The Faculty member will only engage the course/subjects related to their expertise to ensure that the knowledge sharing flows well and correctly during the teaching. Similarly, appointments as the examiner or supervisor for the final year project are also on the basis of their expertise. In some cases, the degree programs also allows appointing of an external supervisor/examiner, when it is deemed necessary to have the expertise from outside the department. This is a part of the department commitment to assure the quality of the academic activities.

### **Criterion 3.2 Staff Development**

#### **3.2.1 Age Cohort**

The recruitment and selection criteria of academic staff are based on the guidelines of civil officer recruitment from the Indonesian Minister of Administrative Reform (MENPAN) since 2014. All information publishes and accessible on the website at <http://menpan.go.id>. The academic standard of lecturers has been appointed by the Indonesian Minister of Research Technology and High Education through Permenristekdikti RI Number 44 of 2015 and The Amendment of Permenristekdikti RI Number 50 of 2018. The regulation also included the standard of invited lectures that have already hold a doctoral degree and expertise in the specified field. The quality of the education process from invited lecturers would be measured through small tests after lecturing or in the mid/final semester test.



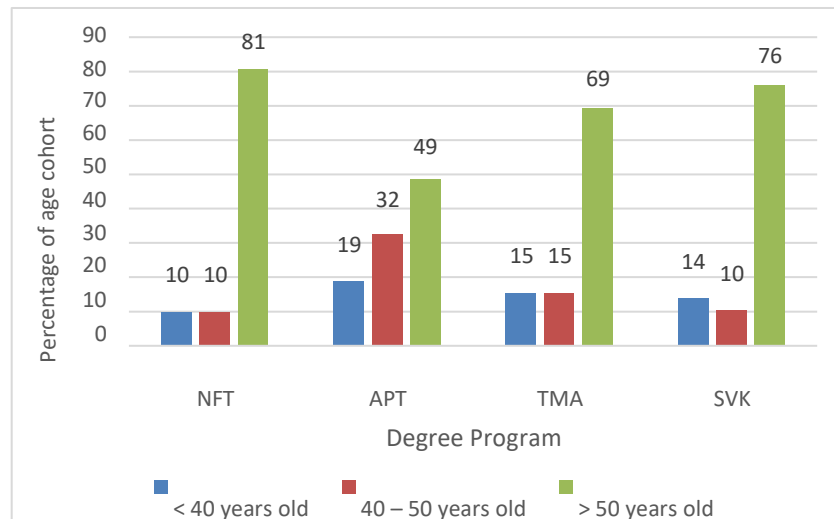


Figure 3.2.1 Distribution of lecturers in four degree program according to age

Figure 3.2.1 shows the distribution of lecturers in four degree program according to age. The data shows that the majority of lecturers are over the age of 50 in three degree program including NFT, APT, TMA and SVC. One of the causes is that when in 1980s the Indonesian system evolved to mass higher education more staff had to be appointed. When this growth came to an end, the number of existing staff was stable until the time of retirement as it would mean a loss of much experience and expertise.

The supporting staffs are sufficient to perform administrative and technical tasks. All of degree program use Man Power Planning as consideration for the IPB Directorate of Human Resources (SDM) in preparing plan number of required academic staff projection until 2030. Academic staff number and specifications are adjusted to the requirement and development of staff in degree program. In order to achieve a more balanced age distribution, all of bachelorof science degree program purposes the young academics recruitment to ensuring an adequate supply of suitable academics.

Regeneration is indeed necessary to ensure the adequacy of academic staff in handling academic activities. The recruitment of lecturers in all degree program is guided by the Decree of the Minister of Research, Technology and Higher Education Number 50/2018, which states that candidates must have at least a Master's degree in a related field. The vacancy is opened when the Division (as the first-line unit under the department - Division) requests further approval by the respective Dean, then it will be forwarded to the Director of Human Resources Development (HRD) of the university in this case is IPB.

### 3.2.2 Training

In staff development, the department as the party responsible for each degree program has a program to increase the capacity of each staff. Both lecturers and supporting staff are given the opportunity to take part in training in order to increase scientific capacity

to support the performance of lecturers and supporting staff in carrying out academic activities (Table 3.2.1).

Table 3.2.1 Training attended by lecturers and supporting staff

Training	Degree program			
	NFT	APT	TMA	SVC
Lecturer	20	42	24	26
Supporting Staff	72	30	32	21
Total	92	72	56	47

The training and development need of academic staff are identified by degree program. This identification is initially conducted at the departmental level and subsequently is proposed to the faculty and IPB level. The improvement of human resources of academic staff in IPB is conducted through various methods such as self-study, coaching/mentoring, seminars, congresses, workshops, training, courses, certification programs and further education/learning tasks. The degree program provides permission to support the improvement of learning process quality through increasing scientific knowledge on study, trainings, workshops and others.

Lecturer development can be done through increasing academic competence through increasing the level of education for both lecturers and employees, both for studying at universities at home and abroad. Improving teaching skills is carried out through AA-Pekerti training and SCL (student center learning) workshops, improving research proposal writing and publication skills through training in writing international scientific journals and quality management skills through internal audit training.

To improve their competence in research, lecturers are given training related to ethical clearance for handling experimental animals, data analysis, and others. Lecturers also take part in the Indonesian Engineer Education Certification/PII to obtain a Professional Engineer Certificate and study industrial processes in the Animal Husbandry and Feed Industry, Certification for the implementation of forest seed and vegetative seed handling in collaboration with the Professional Certification Institute - National Institute for Professional Certification (LSP - BNSP). Academic and administrative staff have joined many parts of the training and workshops conducted by IPB University, Ministry of Research, Technology and Higher Education, state and private institutions to improve their abilities and skills.

### 3.2.3 Inbond and Outbond

The development of academic staff capacity is also conducted by inviting Indonesian and foreign scientists to exchange knowledge and technology and developing research collaborations with Indonesian and foreign universities, state and private agencies, the local communities, and the other stakeholders. Those activities were conducted in the guest lectures, seminars, stadium generals, and training. In developing their careers, lecturers are

given the opportunity to join outbound in the context of seminars/conferences or training abroad both in Asia and Europe.

Table 3.2.2 Number of Inbond (expert visits from abroad) and Outbound (IPB lecturers who visit universities or other institutions abroad)

Type of Activity	Degree Program			
	NFT	APT	TMA	SVC
Inbond	107	115	53	32
Outbond	83	145	54	38
Total	190	260	107	70

### 3.2.4 Research

As a research university, IPB requires its lecturers and academics to conduct research. Lecturers are required to conduct research and guide students to conduct research in order to complete the final project as a condition for graduation (Table 3.2.3). Research involving IPB lecturers in 4 degree program from 2015 to 2020 includes lecturer research funded by the Directorate General of Higher Education, Ministry of Education and Culture of the Republic of Indonesia, independent research, and research involving lecturers as supervising lecturers in their students' final assignments at undergraduate, master or doctoral (<https://ipb.link/bdp-penelitian>).

Table 3.2.3 Lecturer research, undergraduate, master student and doctoral students

Research	Degree Program			
	NFT	APT	TMA	SVC
Lecturer	106	332	162	112
Undergraduate Students	439	320	486	413
Master students	139	120	162	106
Doctoral Students	106	40	64	29
Total	790	812	874	660

The results of this research are then published in national and international journals, national and international proceedings, books, posters, etc. (<https://ipb.link/bdp-publikasi>). IPB University can recognize, measure, and monitor the scientific activities, journals, posters, and book publications of academic staff as a productivity parameter through the information system of scientific publications (SIPAKARIL-IPB) at <https://sipakaril.ipb.ac.id>. For academic achievements, such as the staff who want to continue higher formal degrees, IPB University provides encouragement and information regarding scholarships or research funding.

IPB University has regulated publication incentives for staff. For example, incentives for academic staff who have published their paper in high reputable journals, mainly Scopus indexed Journals (Q4-Q1). IPB University provides incentive amount IDR 20.000.000 (USD 1.413) to the authors who have IPB affiliation and published their journals at the Q1 level. The other incentives are available for academic staff who write modules for teaching materials, research funds, and awards for creating innovations.

### **Criterion 3.3. Funds and Equipment**

#### **3.3.1. Funding (2016-2020)**

Financial management and facilities and infrastructure in IPB are carried out centrally. Budget planning and fund management NFT, APT, TMA, and SVC refers to the planning of performance targets that have been set at the IPB and Faculty levels. The degree program has the authority to manage community funds for financing office operations, educational operations, educational development, student activities, and asset expenditures.

The degree program's work plan and Budget (RKAT) is a budgeting and funding guidance for implementing all educational activities in the relevant fiscal year. Budget planning is based on the received money and the spending amount in a year. RKAT drafting degree program has several steps: 1. Planning, 2. Implementation, 3. Revision, 4. Monitoring, evaluation, and development. The degree program sets up an annual RKAT and will be submitted as an accountability report to IPB University.

The degree program has the authority to prepare an Activity Plan and Annual Budget which will be part of the RAKT IPB which is then processed through the mechanism applied by IPB. The total funding for the degree program are sourced from the Community Fund, which is revenue from the community which comes from the Single Tuition Fee (UKT). Funds sourced from others (APBN, domestic / foreign cooperation) are managed by IPB and the Faculty. All receipts from the government, the public, foreign parties, are received and stored in the name of the Rector through a Revenue Account which is managed centrally by the treasurer of IPB.

The allocation of funds for educational and teaching activities is based on the standard tariffs applicable in IPB following Rector's Decree [227-IT3-KU-2018](#) and [No. 195/2021](#), which includes [budgets for education and teaching activities](#). Funds from IPB University are allocated mainly for the education, including student services. Tuition fees are also used to upgrade laboratory facilities, purchase chemical reagents, and replace glassware. The facilities are used to support learning outcome accomplishment. In addition, the government also gives funds for the procurement and maintenance of facilities buildings, laboratory instrumentations), electricity, water, and telecommunications facilities, funding for research, community empowerment activities of education staff competitively, scholarships, and student activities. The degree program has a special budget allocation for procurement and maintenance.

### 3.3.2 Infrastructure and Facilities

Degree programs in IPB are supported by various infrastructures and facilities comprising lecture facilities, laboratories, libraries, computer and internet facilities, and administration and supporting facilities.

#### 3.3.2.1 Lecture Facilities

Every degree program is equipped with various facilities, in general, such as classrooms, seminar rooms, and general rooms from student learning in the professional associations (Student Association of Nutrition and Feed Technology in NFT-SP, Student Association of Animal Production Science and Technology in APT-SP, Student Association of Aquaculture in TMA-SP, and Tree Grower Community in SVC-SP). Classrooms and learning activities are managed centrally by IPB University.

Each classroom is equipped with air-conditioning, a digital projector, a microphone, a speaker, and a whiteboard. The Faculty of Animal Science where [NFT-SP](#) and [TMA-SP](#) are located in, occupies 40,000 m<sup>2</sup> of premises consisting of different types of the classroom (type A, B, and C), a student organization room, and an auditorium. While, APT-SP has 17 classrooms that can accommodate 60 to 100 students, and 25 lecturer rooms. Information on lecture schedules, examination results, job opportunities, updated info on students, and lecture activities are accessible online via the degree program website.

The Faculty of Forestry and Environment where the [SVC-SP](#) is located in, has many classrooms and laboratories covering an area of 2,512.25 m<sup>2</sup> for lectures and 915 m<sup>2</sup> for practical works. Lecture halls (Sylva Pertamina Auditorium and Sylva meeting room) are used for workshops, symposia, seminars, and other scientific meetings.

#### 3.3.2.2 Laboratory

The Faculty of Animal Husbandry also has a field laboratory unit for education, research, and training in Jonggol, West Java, around 2-3 hours from the main campus. This field laboratory covers an area of about 169 Ha, which include paddock shelters, stables for ruminants and poultry, a feed processing unit, and a guest house. About 300 sheep are raised and managed in Jonggol Farm. The NFT has a field laboratory in Dramaga that is used as an animal barn (A for dairy, B/C for poultry) forage arboretum and mini-feed industry. The NFT owned many [analysis equipment](#) used for practicum and research. The APT has experimental stations on the campus for the students to conduct practical works and their final research projects, and for the academics to conduct experimental research. The APT also has a [field laboratory](#) for practical works located close to the campus, i.e., a teaching farm for animals and their homes which are divided into three blocks A, B, and C totalling about 7576.84 m<sup>2</sup>. There are 7 laboratories at the APT consisting of education and experimental laboratory with many types of equipment.

The TMA has Production Technique and Aquaculture Management laboratory, Aquatic Organism Reproduction and Genetics laboratory, Fish Nutrition laboratory, Fish Health laboratory, Aquaculture Environment laboratory. Each laboratory has specific tools

for education and research purposes. Practical works and student research in SVC are facilitated in the experimental field, greenhouses, permanent nurseries, and Gunung Walat Educational Forest. SVC has ten laboratories consist of Forest Ecology, Forest Influence, Mycorrhiza Technology, Seedling Quality Improvement, Forest Seed Technology, Agroforestry, Tissue Culture, Forest Genetic, Molecular Forestry, Forest Entomology, Forest Pathology, and Forest and Land Fires Laboratories. Each laboratory is supported by sufficient equipment and technicians.

### **3.3.2.3 Library**

The academicians of IPB could use IPB University libraries with accessible e-journals through <https://repository.ipb.ac.id/>. There were over 50 national and international journals that could be accessed with more than 3000 articles. The others collection in IPB University libraries are dissertations and theses (79508 files), IPBana (8720 files), IPB's Books (3144 files), Research and Community Empowerment articles (1379 files), Research Center articles (76 files), Scientific Orations (63 files), Strategic Issue Studies (290), and Student Papers (2123 files). The IPB library also subscribes to electronic journals, such as Science Direct, The Essential Electronic Agricultural Library (TEEAL) and Proquest. The collections can be accessed quickly and easily through the Online Public Access Catalog (OPAC) through the 18 library computers. In addition, the library collection can also be accessed via the internet on the following homepage, <http://perpustakaan.ipb.ac.id/> known as IPB Electronic Library (IEL). IPB Main Library provides various services, namely: (1). User services (circulation); (2). Retrieval of information; and (3). Photocopy services and printing. Moreover, the Library also provides photocopy and scanning services, CD burning, consultation, training and apprenticeship in the library and librarianship, as well as information management. To facilitate the service the library has been computerized to tally its visitor, for cataloging and accessing books, as well as library services where lending transactions will be recorded in the book lending database. The library is open daily at 08.00-21.00, except Sundays from 08.00 to 16.00.

The Faculty of Animal Science also has a library, which is located on the 2<sup>nd</sup> Floor of in Faculty building. While Faculty of Forestry and Environment has a Forestry Information Center in the Tanoto building. Those libraries are also connected to WiFi to enable students to access reference collections in IPB library (LSI). The library opens from 09.00-15.00 from Monday to Friday.

### **3.3.2.4. Computer and Internet Facilities**

Every degree program in IPB has developed an IT system and cyber that enable every wing within the building well-connected to access the internet. The internet facilities allow students and academicians to access information and to communicate, as well to enable students to quickly access important news and announcement related to their studies, including their examination results. The computer facilities available in the degree program are accessible for the students to work on their assignments, and particularly for those who

do not own personal computers or laptops. The Directorate of Information Systems and Digital Transformation (DSITD, *Direktorat Sistem Informasi dan Transformasi Digital*) of IPB University is to manage the development of information technology-based IPB communication and information service and to support the institution's policy and program. More details on these services could be accessed at <http://ict.ipb.ac.id>. Currently, all campus areas are connected through a Local Area Network (LAN) and Metropolitan Area Network (MAN) using various transmission media such as Twisted-Pair Cable (VTP/STP), optic fiber cable and wireless (WiFi). Data transmission speed for intranet access is 100-1000 Mbps, while 44 internet access is 150 Mbps. Applications used are dBase, Clipper, Visual Basic, ASP/PHP, MS-SQL Server, MySQL, MS Office, and other licensed Microsoft products. Other than that, DSITD developed the Information System Management on Academic Affairs (SIMAK), Card of Study Plan (KRS, *Kartu Rencana Studi*) online, and Evaluation on Teaching and Learning Process (EPBM) online. Other services provided by this office are resource sharing activities such as file and print sharing, E-mail, Web, Chat, Mailing List, Discussion Groups, Multimedia streaming, Video/Teleconference, VoIP/IP Telephony/PABX, and Voice Mail. Student access to information is well facilitated through Student Cyber facilities that are spread out in several locations on campus with a User Access Mechanism. The degree programs have sufficient communication facilities including telephones, fax, scanner, and copier. The data/information related to academics can be accessed and retrieved by an online application called Academic Information System (SIMAK, *Sistem Informasi Akademik*). The campus building is equipped with emergency routes, meeting points, and also has a fire extinguisher located at strategic spots and a reverse parking system that eases evacuation during an emergency. The campus area is also connected with Wi-Fi.

### **3.3.2.5. Administration and Supporting Facilities**

Administration offices and facilities are available in every degree program. Sports facilities are also available for the students, including futsal, football, athletics, basketball, and volleyball. There are regular inter-departmental and inter-faculty sports competitions. Besides that, every study program in IPB has the prayer room. There is also a large mosque within the campus which is managed by the University. Other rooms are also provided for students of other religions to conduct their religious activities. Other facilities offered by the University are transportation within the campus, i.e. intercampus buses, bikes, canteens for students, in-campus cyber, book shops and health facilities. All those facilities are accessible to all students, university officers, and academic staff.

### **Criterion 3.4. Evaluation resources**

Students' satisfaction at SP NFT, AFT, TMA, and SVC on the learning facilities were obtained through survey. Surveys are conducted periodically and continuously. The survey begins with the development of a questionnaire that suits your needs. The data obtained from this survey is processed and analyzed according to the purpose of the survey which

will then become input for development. The survey on students' satisfaction was conducted by choosing a score 1-4 for each facility. The score indicates 1=lack, 2=sufficient, 3=good, and 4=excellent.

The survey result showed that students were generally satisfied with the facilities provided by IPB. Students relatively stated more satisfied with the main facilities by giving a score of 4. Most students stated good (score 3) for supporting facilities compared with excellent (score 4). Significantly, students were satisfied with lab facilities for learning (practicum) or research. Facility improvement needs to be implemented in classrooms and practicum rooms, book availability in the library, and internet access availability. Internet access improvements need to be performed on broader and more even distribution, network stability, and speed improvement. In general, the supporting facilities in the form of a prayer room place, canteen, and health facilities need to be improved so that the services enjoyed by students can be more optimal. Research equipment and facilities at SP are limited, but this condition is overcome by the use of integrated laboratories both at the faculty level and advanced laboratories at IPB; in collaboration with other institutions within the Ministry of Maritime Affairs and Fisheries (KKP), the Indonesian Institute of Sciences (LIPI), the Technology Application Research Agency (BPPT), as well as with private companies.

SVC students consider facilities and infrastructure to be good and excellent. Two things need attention for future repairs: laboratory and toilet facilities. SVC collaboration with SEAMEO BIOTROP, BSI, and BRIN. This cooperation can reduce the lack of facilities and equipment in SP. The infrastructure and facilities management system at IPB is regulated in the Rector's Regulation of the IPB University Number 06/13/LK/2008 concerning Guidelines for The Management of Goods Belonging to the Bogor Agricultural University. Meanwhile, the management of State Property refers to the Government Regulation of the Republic of Indonesia Number 27 of 2014 concerning the Management of State Property.

The results of this customer satisfaction survey were then discussed in a follow-up meeting at the degree program to analyze the root cause of the problem and efforts to improve each finding. The results of this follow-up meeting became one of the inputs for preparing UPPS planning for the following year.

To improve the performance of financial management, training is carried out to provide the needs of financial staff; while to enhance the performance of the management of educational facilities and infrastructure, preparing plans for repair and maintenance of facilities and infrastructure, and allocating budgets for the maintenance of facilities and infrastructure is carried out.

Degree Program has ensured the sustainability and quality of tridharma implementation and investment in human resources, facilities, and infrastructure sustainably for the short and long term, with adequate funding sources (more than one source). To ensure efficiency, transparency, and accountability of finance management, facilities and infrastructure are audited annually. The implementation of audits in IPB is centralized, where all institutions/units within IPB regular audits are carried out by the IPB



Internal Audit Office (KAI) and synergize with the quality assurance system established at IPB.

### 3.4.1 Strength

1. High quality of academic and supporting staffs
  - ↗ Faculty members are academically qualified and current in their fields of teaching responsibility, and that substantial cross-section of the business school's faculty are engaged in research consistent with the school's mission and strategic
  - ↗ Staff members, the supporting staffs of each degree program are technically well trained in the field. They are professionally assisting the teaching activities in laboratory works or other issues related to the academic/research activities.
2. High productivity of lecturer in scientific publication.
  - ↗ The collaboration of lecturers with students and other researchers to explore the community problem and conduct the research to resolve the problem.
  - ↗ The quantity and quality of lecturers' research and community services activities shows an increase per year and almost published in accredited and reputed journal
3. Sufficient infrastructure and facilities.
  - ↗ The facilities are relatively complete to support the teaching activities. The facilities include classrooms, laboratories, farm station and other supporting facilities
  - ↗ Learning infrastructure for lectures and practicums is adequate and of good quality, and can be well accessed by teaching staff and students.
  - ↗ Learning management system based online system facilitates lecturers, education staff and students to get on-line information quickly and accurately.
  - ↗ In particular, the linkage of the degree programs with industries enable the students to be exposed to industrial environments
  - ↗ The interrelationship between Faculty members, students and also relationships lecturers-students are in a positive position. It has created a suitable academic atmosphere in the degree program to conduct teaching process.

## 4. Transparency and Documentation

### Criterion 4.1 Module descriptions

Every freshman of the IPB Bachelor program gets an Program Guidebook which will be used as a guide during their study until graduation. The Guidebook contains module description, rules and conditions of degree program. The Guidebook also can be accessed online on <http://simak.ipb.ac.id/Publik/BukuPanduan>. The module descriptions of NFT, APT, TMA and SVC also can be accessed through the degree program website and these are accessible to all students and academic staffs. The module description consists of:

1. Module title
2. Module course identification code.
3. Person responsible for each module.
4. Teaching methods and workload.
5. Credit points.
6. Intended learning outcomes.
7. Module content.
8. Admission and examination requirements.
9. Exam form, grading, and evaluation
10. Recommended literature

Student enable to pre-read the module to prepare themselves for class by accessing the Centralized Learning and Aptitude Support System (CLASS, <https://class.ipb.ac.id/>) in advance of classes. In CLASS, Lecturer can evaluate student understanding by giving assignment, quiz, discussion forum, and exam to student in CLASS. Also, students have an opportunity to get personal contact with lecturer to make sure that their work progresses as planned and resolve any problems.

### Criterion 4.2 Diploma and Diploma Supplement

A student who has completed his/her study will attend the graduation ceremony. After graduation, the student will be awarded a Diploma Certificate and Transcript of Academic Records and Diploma Supplement (NFT and APT; TMA and SVC) issued by The University. Both Diploma Certificate and Diploma Supplement are issued in Bahasa Indonesia. Academic records of graduates are written in the Transcript of Records and published alongside the Diploma Certificate. The transcript of the record shows the performance of academic that is using 5 grades (A=4, AB=3.5, B=3, BC=2.5, C=2, and D=1) and the GPA's (Grade Point Average) expressed in 1-4 scale (from the worst to excellent).

The Diploma Supplement is an official statement issued by the University containing information about the academic achievements or qualifications of the graduate. It is an additional certificate which is given to students who have completed the study or skill training arranged by degree program by meeting the requirements and passing the specialty qualification. The certificate states information on students' specialty and competency in the field of expertise presented in qualitative and quantitative classes. The

courses that can be taken individually by students and final score procedure are described in the diploma supplement. Based on national regulation of Research, Technology and Higher Education Minister No 59/2018, every university in Indonesia should issue a Diploma Supplement for each graduate to provide additional information related to employability, knowledge, skills and attitudes.

#### **Criterion 4.3 Relevant rules**

Rules and regulations in degree program follows the IPB University regulation written in the Academic Handbook and also in the Standard Operating Procedures documents. Those also can be accessed online via <http://kmmai.ipb.ac.id>.

The university regulations as the reference for the management of education and operation of degree program are as follows:

#### **National Levels:**

1. The Acts of the Republic of Indonesia No. 20 of 2003, concerning the National Education System. This law also regulates the evaluation, accreditation and certification of personal (education and administrative staff) and institutions related to quality assurance of education.
2. Law No. 14 of 2005, concerning Teachers and Lecturers. To be appointed a university lecturer, one must have a Master's degree, and a certain phase of lecturer certification based on the Decree of the Minister of National Education No. 42/2007.
3. Government Regulation No. 66 of 2013, concerning Statute of Bogor Agricultural University.
4. Government Regulation No. 8 of 2012, concerning the Indonesian National Qualifications Framework.
5. Regulation of the Minister of Education and Culture of the Republic of Indonesia No. 50 of 2014, concerning Quality Assurance System for Higher Education.
6. Concerning Amendments to the Regulation of the Minister of Research, Technology, and Higher Education No. 44/2015 concerning National Higher Education Standards.
7. Decree of President RI No. 08/2012 regarding the Curriculum Development Referring to KKNI in PIAUD degree program.
8. Regulation of Ministry of Research, Technology, and Higher Education No. 62/2016 regarding higher education quality assurance system.
9. Presidential Decree No. 279 of 1963 concerning the establishment of IPB.
10. Decree of BAN-PT No. 856/SK/BAN-PT/Akred/S/III/2018, Major of Nutrition and Feed Technology has been accredited by The National Accreditation Board of Higher Education (BAN-PT) with 'A' Grade from 27 March 2018 until 27 March 2023.
11. Decree of BAN-PT No. 858/SK/BAN-PT/Akred/S/III/2018, Major of Animal Production Technology has been accredited by The National Accreditation Board of Higher Education (BAN-PT) with 'A' Grade from 27 March 2018 until 27 March 2023.

12. Decree of BAN-PT No. 973/SK/BAN-PT/Akred/S/IV/2018, Major of degree program has been accredited by The National Accreditation Board of Higher Education (BAN-PT) with 'A' Grade from 10 April 2018.
13. Decree of BAN-PT No. 857/SK/BAN-PT/Akred/S/III/2018, Major of Silviculture has been accredited by The National Accreditation Board of Higher Education (BAN-PT) with 'A' Grade from 27 March 2018 until 27 March 2023.

#### **IPB University Levels:**

1. Decision of Rector of the Bogor Agricultural University No. 001/K13/PP/2005
2. Regulation Academic Senate Of IPB University No. 35/IT3.SA/P/2020 on Technical Guidelines for Enforcement of Academic Ethics and Community Life for Academic Civil and Manpower Education of IPB University
3. Regulation Academic Senate Of IPB University No. 28/ISA-IPB/P/2018 on Norms and Procedures for The Implementation of Academic Freedom, Academic Pulpit Freedom, and Scientific Autonomy IPB University
4. Letter of Decision of the Academic Senate of IPB University No. 47/ SA-IPB/2007 on the Student Code of Conduct of IPB University Campus.
5. Regulation Academic Senate IPB University No. 34/SA-IPB/P/2020 on Amendment to Regulation of the Academic Senate of IPB University No. 33/SA-IPB/P/2019 Concerning Academic and Life Ethics Community for Academic Civility and Educational Personnel IPB University
6. Letter of Decision of Rector of Bogor Agricultural University No. 13/KI3/KM/2015 on the Academic Rules & Regulations of IPB University and casual guidelines in campus environments.
7. Regulation of the Rector of IPB University No. 096/IT3/DT/2012 on the Standard Operating Procedures (SOP) for Undergraduate Programs at IPB University.
8. Regulation of the Rector of IPB University No. 175/IT3/2019 on Undergraduate Academic regulations at IPB University, which is updated annually for new students. Dissemination of important regulations to the academic community (Faculty members and students), as well as Staff members, are implemented through the following methods:
  1. Posting them on the website IPB University, to enable members of the campus communities, Faculty and Staff Members, as well as students and public access to those regulations anytime.
  2. Use social media for e-mail list building to distribute such important information.

## 5. Quality Management: Quality Assessment and Development

### Criterion 5.1 Quality Assessment

To improve the quality of the degree programs, department APT, NFT, SVC, and TMA has regularly performed internal and external quality assurance, which are the two important steps for improvement. Internal quality assurance is started by GKM (Quality Control Group) at the department chaired by the secretary of the department and the faculty level chaired by the Deputy Dean for Academic and Student Affairs. Internal quality assurance has been performed during and at the end of each semester. At THE university level, the internal quality assessment is carried out by IPB University based on the IPB Quality Assurance Division, which is structured at the level of University, Faculty, and Department (<http://kmmmai.ipb.ac.id/standar-mutu-ipb/spmi/>). The Diagram of Quality Assurance Process carried out by IPB University. Following this, the fore-mentioned degree programs have been externally evaluated (every five years) by BAN PT (National Accreditation Board for Higher Education, the only official accreditation board recognized by the government). The degree programs have received (A) (excellent) scores for more than ten years regarding their education quality performances. All of the B.Sc degree programs have received an ISO 9000:2015 Quality Management System (SMM) credential covering the method of academic administration services and education. In addition to this, all degree programs have received international accreditation at the regional level (i.e., Asia) by the Asian University Network (AUN). In order to improve the quality of education and the learning process, the degree programs have been trying to undertake higher-level standards into the international level ASIIN. All accreditation certificates can be seen in Chapter 1.

### Criterion 5.2 Key elements for improvement

Two elements have been especially useful for the continuous improvement of the degree programs; 1) curriculum evaluation and 2) teaching and learning evaluation. These two elements are taken into account by the executive to evaluate the degree programs. Herewith, we explain further the elements.

#### 5.2.1 Curriculum evaluation

Curriculum evaluation is one of the important elements to improve the degree programs. The degree programs regularly perform curriculum evaluation periodical internal quality assurance, including all stakeholders, every five years. The degree programs arranged workshop activities that involved various related stakeholders such as students, teaching staff, academic staff, alumni, and government and private institutions. The degree programs adjusted the curriculum based on alumni feedback and suggestions from stakeholders (i.e., employers). In addition, the curriculum was also adjusted according to current issues and the development of relevant fields. For example, the main improvement

in the 2014 curriculum was the involvement of newer courses such as **KKNT** and **Fieldwork**. These courses provided more opportunities for students to study independently in the field and interact with society and entrepreneurs. Apart from this, in 2020, a new curriculum has been implemented. This curriculum encouraged students to take more enrichment courses ( $\pm 20$  credits). The implementation of the 2020 curriculum will increase student competence through independent learning activities in response to the demands of the era of Industrial Technology 4.0. Moreover, the curriculum helped develop the student's character by providing high opportunities in enrichment courses such as student exchanges, internships/field practice, teaching at schools, research, humanitarian projects, entrepreneurial activities, independent projects, and village development to produce powerful, agile learners.

The evaluation of the curriculum and the quality of the learning process is carried out annually by evaluating indicators that IPB has set through the SIMAKER program. These indicators include (1) the percentage of graduating on time, (2) the percentage of students who get a grade point average (GPA)  $\geq 3$ , and (3) the percentage of graduates who continue their studies and are self-employed.

Figure 5.2.1 shows the percentage of graduating on time from four-degree programs from 2015 to 2020. The results are essential for the information to improve each department's teaching quality. The proportion of students who are graduating on time varies across the department. For example, Department NFT and TMA have slightly increased over the five academic years, yet APT and SVC fluctuated.

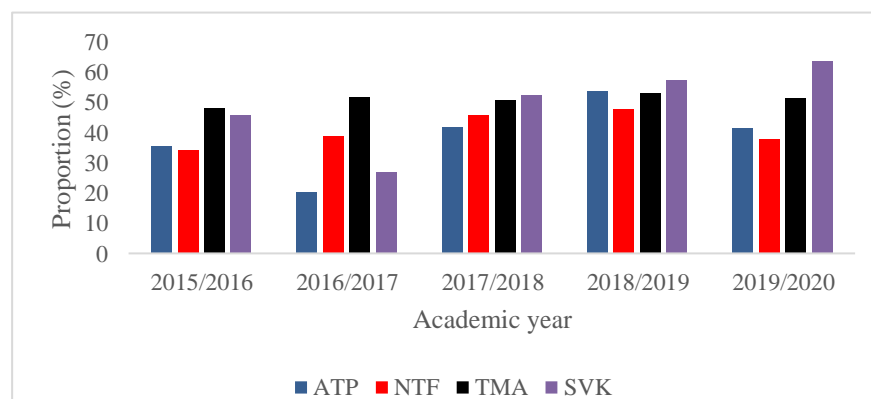


Figure 5.2.1 The proportion of graduating on time from APT, NFT, TMA, and SVC in 2015-2020

In addition to this, we also presented the proportion of students who get a GPA  $\geq 3$  (Figure 5.2.2). The final GPA of graduates is attributed to Cum Laude, High Merit, and Merit. The results show that department APT and NFT slightly increase in the proportion who get a GPA  $\geq 3$ , whereas TMA and SVC remain fluctuated. This information is essential for the academic evaluation of the degree programs. In addition, the results are linked to the learning outcome (LO) of the courses offered by the degree programs. The evaluation of LO will be further described in the following section.

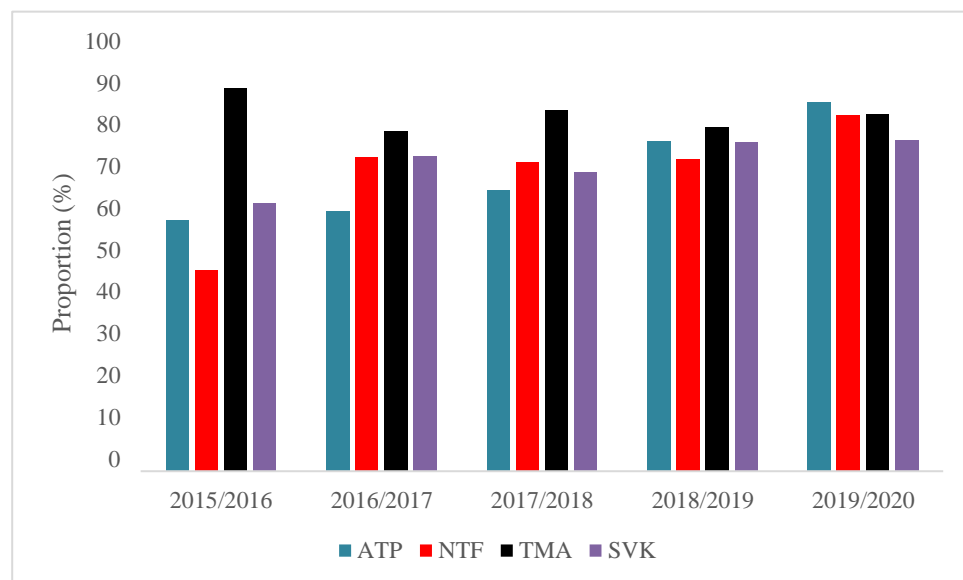


Figure 5.2.2 The proportion of proportion of students who get the GPA  $\geq 3$  from APT, NTF, TMA, and SVC in 2015-2020

The presence of the faculty members was evaluated based on their daily attendance (check-in and check-out systems). The presence of the faculty members is essential as it indicates the active involvement of the members. The department has sought a mechanism for receiving feedback from various parties, such as students, lecturers, alumni, stakeholders, and the community. The students' feedback is received by assessing the learning process (EPBM). The appraisal is carried out to determine the course's learning process and the lecturer's success according to the learners. The lecturer's feedback is collected through meeting activities at the laboratory, division, or department levels. Inputs from the alumni and stakeholders are obtained through the activity of the tracer study. Feedback from the community is obtained by questions distributed at graduation time to the parents of the students.

In addition, the curriculum evaluation can also be seen from Teaching-Learning Process Evaluation (EPBM, *Evaluasi Proses Belajar Mengajar*) results. EPBM is a tool to evaluate the courses, lecturer, and learning process being standardized by IPB University. Student confidentiality is guaranteed and will not be subject to any sanctions. In addition, EPBM is a tool to indicate the internal quality assessment and development of their degree programs based on the students' 'point of view. The EPBM score for the faculty members in 2015-2020 is presented in 5.2.1. The average EPBM score of Faculty members for the teaching-learning process was  $> 3.00$  (good). EPBM evaluation is conducted online by the student every semester after finishing mid and end-semester exams. We presented the example of the participation of students in assessing EPBM from the SVC department (Table 5.2.1).

Table 5.2.1 shows an increase in student satisfaction with the quality of lecturers who teach in the course. In the 2015/2016 data, the average student assessed lecturers in each Element of Lecture with around 0.2% of students giving a poor rating (1), 2.4% of students giving a moderate rating (2), 71.7% of students giving a good rating (3), and 25.3% of students gave an excellent rating (4). A very positive development from the previous year is shown in the data for 2019/2020, with an average student assessing lecturers in each

Element of Lecture with around 0.1% of students giving a poor assessment (1), 1% of students giving a moderate assessment (2), 50.5% of students gave a good assessment (3), and 48.4% of students gave an excellent assessment (4). This positive development, especially in the increasing number of respondents with excellent scores, shows that the academic system is improving in the silviculture degree program. Significant improvement for the silviculture degree program is also shown in Each Element of the Course, shown in 5.2.2. In the 2015/2016 data, the average student assessed Each Element of the Course with around 0.2% of students giving a poor rating (1), 2.4% of students giving a moderate rating (2), 71.7% of students giving a good rating (3), and 25.3% of students gave an excellent rating (4). While in 2019/2020, the average student assessed Each Element of the Course with around 0.6% of students giving a poor rating (1), 11% of students giving a moderate assessment (2), 52% of students giving a good rating (3), and 46.4% of students gave an excellent rating (4).

Table 5.2.1 Number of Students (%) Who Score 1 to 4 for Each Element of Lecture for TLPE of 2015/16 and 2019/2020

No	Evaluated Elements of Lecture	2015/2016				2019/2020			
		1 (poor)	2 (moderate)	3 (good)	4 (excellent)	1 (poor)	2 (moderate)	3 (good)	4 (excellent)
1	EL_01	0	3	71	26	0	1	49	50
2	EL_02	0	3	69	28	0	1	51	48
3	EL_03	1	5	69	25	1	2	51	47
4	EL_04	0	1	70	28	0	1	49	50
5	EL_05	0	1	69	30	0	1	48	51
6	EL_06	0	2	76	22	0	1	53	46
7	EL_07	1	3	72	24	0	1	51	48
8	EL_08	0	2	72	25	0	1	52	47
9	EL_09	0	2	75	22	0	1	52	47
10	EL_10	0	2	74	23	0	0	49	50
Average		0.2	2.4	71.7	25.3	0.1	1	50.5	48.4

Notes:

EL-01: The lecturer presents the material in class clearly.

EL-02: The lecturer responds to students' questions/opinions well.

EL-03: The lecturer is able to motivate students to pay attention to lectures.

EL-04: The lecturer is able to provide examples of the application of concepts taught.

EL-05: The lecturer master the latest issues in the field taught.



EL-06: The lecturer is able to use learning materials/tools.

EL-07: The lecturer teaches on time/discipline in accordance with the specified schedule.

EL-08: The lecturer has an attractive and sympathetic appearance.

EL-09: The lecturer is able to control themselves in various situations and conditions in the class.

EL-10: The lecturer has a tolerance of diversity in students and delivers moral, ethical, and disciplinary messages.

Table 5.2.2 Number of Students (%) Who Score 1 to 4 for Each Element of Course for TLPE of 2015/16 and 2019/2020

No.	Evaluated Elements of Lecture	2015/2016				2019/2020			
		1 (poor)	2 (moderate)	3 (good)	4 (excellent)	1 (poor)	2 (moderate)	3 (good)	4 (excellent)
1	EC_01	0	3	71	26	1	0	49	51
2	EC_02	0	3	69	28	1	0	51	48
3	EC_03	1	5	69	25	0	0	48	52
4	EC_04	0	1	70	28	1	2	50	48
5	EC_05	0	1	69	30	0	1	55	44
6	EC_06	0	2	76	22	1	3	54	43
7	EC_07	1	3	72	24	0	1	53	45
8	EC_08	0	2	72	25	0	0	55	45
9	EC_09	0	2	75	22	0	0	53	46
10	EC_10	0	2	74	23	2	4	52	42
Average		0.2	2.4	71.7	25.3	0.6	11	52	46.4

Notes:

EC-01: The course design and contract are clearly stated at the beginning of the lecture/practicum.

EC-02: Course/practicum material is delivered according to the schedule written in the course design and contract.

EC-03: Course material/practicum provides new knowledge and insights.

EC-04: Attendance form is circulated regularly in the classes.

EC-05: The given independent assignments increase mastery of course material.

EC-06: Available teaching materials (handout/module/practical guide).

EC-07: Educational facilities/infrastructure support the implementation of course/practicum.

EC-08: Independent course/practicum assignments in accordance with course material.

EC-09: The exam questions are in accordance with the course design and materials.

EC-10: Exam scores are announced no later than two weeks after the exam.

To provide insight into EPBM results across the years, we presented the average of EPBM from APT department (Figure 5.2.3).

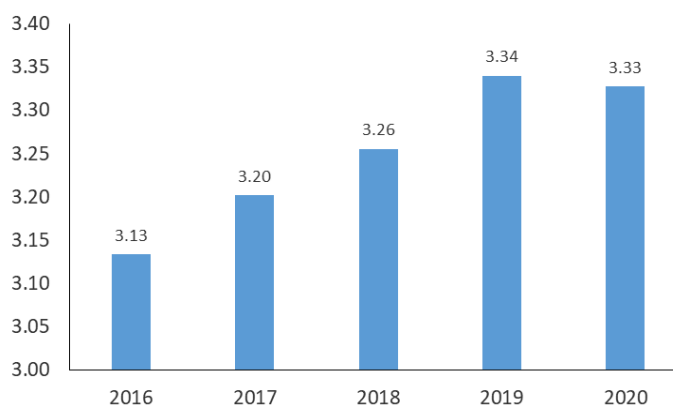


Figure 5.2.3 Average EPBM grades of faculty members in academic year 2016-2020

The *EPBM* score for the Faculty members in 2016-2020 is presented in Figure 5.2.3. The average *EPBM* score of Faculty members for the teaching-learning process was > 3.00 (good). The results of all evaluation processes are incorporated into the development of the programme through the regular workshops arranged by the departments. In addition, the results are shared with students via regular meetings between students and lectures arranged by the Faculty at the early and end year.

## 5.2.2 Teaching and learning evaluation

Instead of evaluating curriculum, degree programs regularly evaluate the teaching and learning process. The lecture is prepared at the beginning of each semester, and the learning plans (RPS) are arranged. At the end of the semester, the RPS, the course, and the lecturer are measured through the learning process. Every course in the degree programs has a learning outcome (LO) to indicate what students will be expected to learn by the end of the school year, course, unit, lesson, project, or class period. As shown in their transcript, effective learning outcomes can be articulated at several levels, from the average students' final examination score and other assignments. The scoring range is 0-4 points. An example of LO (APT) can be seen in Table 5.2.3. These LOs cover both the hard and soft skills of APT graduates. Table 6.2.3 shows the performance criteria of learning outcomes.

Table 5.2.3 Performance criteria of learning outcomes of APT

No	Learning Outcomes	Performance Criteria	Course Code
1	Capable to describe and explain basic knowledge of animal science	Demonstrate sufficient knowledge of the basic animal science, that cover the breeding, nutrition, and production	FPT101, FPT301, FPT401, FPT407, FKH301, PTP101, PTP241, PTP341, PTP492, FPT493
2	Capable to analyze better of animal product and animal characteristics	Principle of technological processing, chemical reaction, and food safety	PTP251,PTP351,PTP352,PTP353,BIO100,
		Demonstrate sufficient knowledge of the principle of Good Animal Practice	PTP101, PTP201, PTP241, PTP341, PTP492, PTP493, BIO100,
3	Capable to examine production technology within Good Farming Practices	Demonstrate sufficient knowledge of analyzing good farming practices in different animal commodities	IPB107, NTP231, NTP211, FKH301, NTP243,PTP201, PTP211, PTP221, PTP222, PTP231, PTP321, PTP322, PTP331, PTP301,
		Demonstrate sufficient knowledge of the analyzing technology for the adoption of good farming practices in different livestock commodities	PIP305, PIP354, AFF233, NIP339, KRP331, PTP301, PTP492, PTP493
4	Capable to identify and differentiate processing of animal products for Good Manufacturing Practices	Demonstrate the ability to identify different animal processing products for good manufacturing practices	AFF233, PTP251, PTP352, PTP355, PTP351, PTP353, PTP492, PTP493,
5	Capable to describe and identify logistic management processes for animal distribution	Demonstrate the ability to identify the production chain of animals from the upstream to the farm gate	FPT406, AFF233, PTP201, PTP401, PTP492, PTP493
6	Capable to implement technology manage-	Demonstrate sufficient knowledge of the implementation of basic animal science that covers breeding, nutrition, and production	FPT401, NTP231, NTP211, FKH301, NTP243,PTP201, PTP211, PTP221, PTP222, PTP231, PTP241, PTP321, PTP322,

No	Learning Outcomes	Performance Criteria	Course Code
	ment of animal production	Demonstrate the ability to implement technology for adoption for good farming practices in different livestock commodities	PPT331, PTP341, PTP354, NTP339, FIS100, KRP331, PTP492, PTP493
7	Capable to design and develop entrepreneurship in the animal production	Demonstrate sufficient knowledge of designing entrepreneurship concepts in the upstream and farm gate processes Demonstrate the ability to implement technology for the adoption of good farming practices in different livestock commodities	FPT406,PTP301, PTP303, PTP305, PTP401, FPT407, STK211,PTP492, PTP493, FIS100, FPT401,
8	Capable to execute animal product processing technique	Demonstrate the ability to apply the animal processing technique for different animal products	IPB101-014, IPB110, IPB112, FPT401, PTP352, PTP355, PTP351, PTP353, PTP492, PTP493,
9	Capable to conduct all the possible research techniques using the available data and information for animal husbandry	Demonstrate the ability to perform different research methodologies for animal science	IPB106, AGB100, FPT101, FPT301, FPT401, FPT407, PTP302, PTP491, PTP492, FPT401, PTP493
10	Capable to lead and develop teamwork and collaboration, with professionals who are autonomous, creative, and innovative	Demonstrate the ability to engage with stakeholders and develop business strategies in animal science	IPB101-014, IPB110, EKO100, MAT101, IPB112, FPT301, FPT401, FPT406, FPT407, STK211, AFF233, PTP101, PTP352, PTP301, PTP351, PTP353, PTP354, PTP493

No	Learning Outcomes	Performance Criteria	Course Code
11	Capable to communicate effectively, both verbally and non-verbally, to implement ethics standards, utilizing the available information to develop self-potency, also capable to adapt the alteration of science and technology	Demonstrate the ability to perform effective communication with stakeholders in animal science	IPB101-104,IPB106, IPB108, IPB112, KPM130, AGB100, PTP491,FPT301, FPT401,FPT407,PTP492,FPT101
		Demonstrate sufficient knowledge to utilize the alteration technology in animal science and for adaption of this transformation	FPT406,NTP231, NTP211, FKH301, NTP243, NTP339, KRP331, PTP251, PTP231, PTP241, PTP321, PTP322, PTP331,PTP305, PTP401, FPT401, PTP493, PTP303,IPB110, PTP302
12	Capable to compile and formulate animal husbandry policy	Demonstrate the ability to analyze the policies in animal science	FPT101, FPT301, PTP222, PTP493
13	Capable to communicate and disseminate the results of animal husbandry innovations for farmers	Demonstrate the ability to communicate and disseminate the novelty in animal science to the stakeholders	IPB106, IPB108, AGB100, FPT301, FPT401, PTP302, PTP491, PTP492, FPT401, PTP493

GPA can be used as an indicator of program learning outcome achievement. The achievement of LOs is expressed by grades A to E. where A=4. A/B=3.5. B=3. B/C=2.5. C=2. D=1 and E=0 (fail) in each of the available courses (the overall average is 3.41 on a scale of 4). In the recap of the available data, all courses have achieved scores above 3, and this indicates that the learning process has been achieved, and some can still be improved. An example of LO achievement from TMA can be seen in Figure 5.2.4.

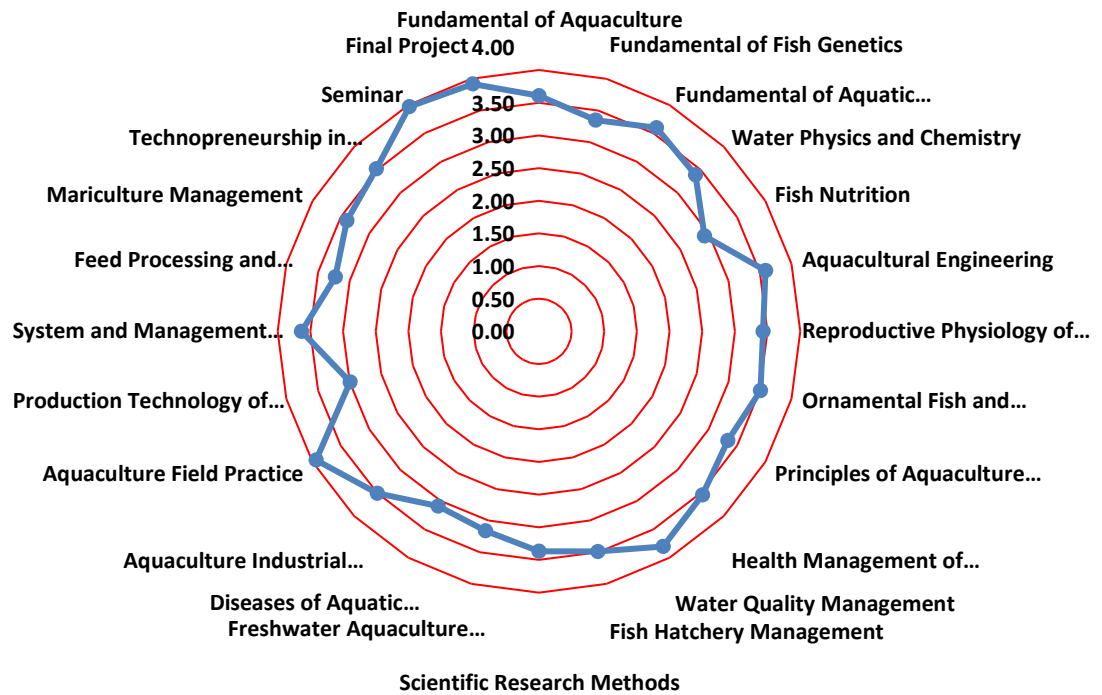


Figure 5.2.4 An example of learning achievement matrix of each major subject.

In addition to internal assessments, the users (industry, private sector, government agencies, NGOs, and other non-governmental institutions) evaluate the performance of departments. The departments and Directorate of Career Development and Assessment IPB conducted tracer studies on alumni regularly to assess the success of learning outcomes of the degree program in society. The alumni tracer studies are routinely carried out by the Directorate of Carrier Development and Assessment, IPB University, every year to evaluate the qualification profile of fresh graduated. An example of evaluation results was showed in Figure 5.2.5.

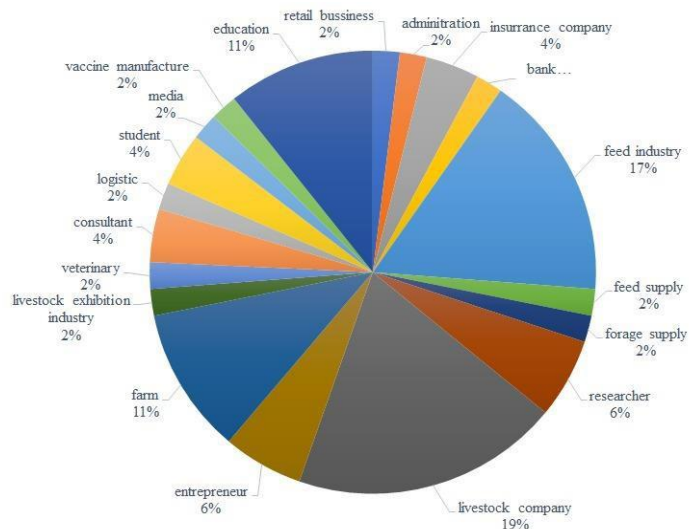


Figure 5.2.5 Distribution of alumni jobs from NFT

Most degree program alumni work as employees by 66.7%, and 33.3% have not worked (in 2020). The percentage of alumni who have not worked is quite significant in 2020 due to unfavorable conditions, namely the COVID-19 outbreak. Details of the [employment opportunities for alumni of the degree program](#). Degree program produces graduate competencies that are in accordance with stakeholders, as seen from the [2015-2020 alumni tracer study by alumni users \(33 alumni user respondents\)](#). The tracer study results show that 93% of working alumni mastering theoretical and professional concepts, have a broad insight and can integrate many disciplines for doing their work.

### **Criterion 5.3 Future development**

Depending on the evaluation results, each department has developed the plans for improvement as follows:

- IPB offers the MOOC's program to improve the standardization of lecture documents using the program-based learning method.
- Provides training to all lectures for problem-based learning implementation.
- Encourage students to join the training activities and student creativity program (PKM) from the Ministry of Higher Education.
- Improve the curriculum by adding field practical work courses.
- Change the mechanism to receive feedback from alumni, students, and stakeholders for improving the mechanism.
- Improving LOs based on the viewpoint of e-learning and feedback received via EPBM.
- Adapting curriculum/courses based on the needs of industries and other stakeholders (i.e., Merdeka Belajar Kampus Merdeka/MBKM)
- Implementing new curriculum K2020 (including problem-based learning, project-based learning, and case study)
- Developing evaluation of learning process and quality standard through the development of module to face disruption era 4.0; timely graduation, student fieldwork, to integrate entrepreneurship program in the course.
- Updating teaching methods regarding student-centered learning and application of digital learning tools for learning utilizing CLASS and other methods in disruption era 4.0 and certification of skill or profession of graduate.
- Developing international classes to increase the total number of international students
- Increasing students' inbound and outbound mobility, including regular education programs, credit-earning, research, internships, comparative studies, public lectures, training, student seminar activities, and international summer courses.
- Improving international publishers' submission, review, and publication process to increase article citations.
- Increasing the number of professors in each division.
- Developing effective strategies in manpower planning
- Improving the English and computer skills of both the Faculty and Staff members.
- Improvement in the facility of the livestock teaching field
- Promoting academic acceleration for Faculty and Staff members, including technicians and supporting staff.

- 
- Improving the effectiveness of academic business based on innovation and expertise
  - The stakeholders are invited to the educational workshop and involved in curriculum formulation
  - The curriculum design is subject to quality assurance and continuous improvement based on the evaluation done by the internal quality assurance (IQA) every year at the department, faculty, and university levels and external quality assurance conducted by National Accreditation Board
  - Teaching and learning processes and student assessment are reviewed and evaluated by internal quality assurance, curriculum committee, examination committee, internal and external auditors
  - Lecturers have already included their research findings in their courses
  - Internal audit is done annually for evaluation and continuous improvement
  - The Department is responsible for the evaluation done by the stakeholders to make institutional improvements the following semester.
  - Available studying supervising for IPB students in the early semesters.
  - Evaluate the curriculum and the learning process to enhance the studying time and on-time graduation performance indicators.
  - Increase collaboration with working partners (current conditions are still limited in number).
  - Increase the promotion of the degree program in various media.



# Appendix

## Checklist of Required Evidences

Required Evidence	Relevant ASIN Criteria	Provided?
Study regulations	All criteria	<input checked="" type="checkbox"/>
Documents/other sources where programme-specific objectives and learning outcomes are written down and published, e.g. regulations, homepage, diploma supplement	1.1, 1.3	<input checked="" type="checkbox"/>
Official document in which official programme name is indicated, e.g. Diploma Supplement, Transcript of Records, Study Regulations	1.2	<input checked="" type="checkbox"/>
Objective-Module Matrix indicating how general outcomes are attained via individual modules ( <a href="#">see Objectives-Module Matrix template</a> )	1.3	<input checked="" type="checkbox"/>
Study Plan or Curricular Overview in a table format that informs about the student workload (credit points and hours) for each module in every semester	1.3, 2.1, 2.2	<input checked="" type="checkbox"/>
Module descriptions for all compulsory and elective modules ( <a href="#">see Module Handbook template</a> ). They must also be provided for final projects, compulsory internships and all modules taken at partner institutions as part of a double- or joint degree.	1.3, 2.1, 5.1	<input checked="" type="checkbox"/>
Official admission regulations	1.4	<input checked="" type="checkbox"/>
Documents/other sources containing provisions for the recognition of externally acquired academic achievements	1.4	<input checked="" type="checkbox"/>
Documents/other sources indicating that student workload is corroborated by the institution, e.g. student surveys	2.2	<input checked="" type="checkbox"/>
Examination regulations	3	<input checked="" type="checkbox"/>

Representative selection of <u>graded</u> exams/reports/ final projects and other student work, <u>generally inspected during on-site visit</u>	3	<input checked="" type="checkbox"/>
Statistical data about the progress of studies, e.g. number of students, average grade, failure rate, amount of re-sits, duration of studies, number of graduates and their distribution, etc.	3, 6	<input checked="" type="checkbox"/>
Academic and professional qualifications of all teaching staff involved in the programme ( <u>see Staff Handbook template</u> ). In case the programme includes a double- or joint degree option, qualifications must also be provided for the relevant teaching staff at the partner institutions.	4.1	<input checked="" type="checkbox"/>
Cooperation agreements (e.g. learning agreements, agreements for use of laboratories, etc. - only relevant in case of cooperation with other universities, companies, re-search institutions, etc.)	4.3	<input checked="" type="checkbox"/>
<u>In case of an online audit</u> , photo and / or video material of the programme facilities and equipment	4.3	<input checked="" type="checkbox"/>
Sample diploma or degree certificate	5.1	<input checked="" type="checkbox"/>
Sample diploma supplement including all relevant degree program information	5.1	<input checked="" type="checkbox"/>
Any other regulations which apply, e.g. code of conduct, teacher responsibilities, etc.	5.2	<input checked="" type="checkbox"/>
Sample student survey questionnaire	6	<input checked="" type="checkbox"/>
Results of student surveys	6	<input checked="" type="checkbox"/>