ASIIN Seal
Accreditation Report

Bachelor's Degree Programmes
Food Technology
Animal Science
Agribusiness
Aquaculture

Provided by
Universitas Diponegoro Semarang

Version: 28.03.2023

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Program Studi Teknologi Pangan	Bachelor Program of Food Technology	ASIIN	-	08
Program Studi Peternakan	Bachelor Program of Animal Science	ASIIN	-	08
Program Studi Agribisnis	Bachelor Program of Agribusiness	ASIIN	-	08
Program Studi Akuakultur	Bachelor Program of Aquaculture	ASIIN	-	08
Date of the contract: 07.05.2021 **Submission of the final version of the self-assessment report:** 29.07.2021 **Date of the onsite visit:** 24.-26.01.2022 **at:** online				
Peer panel: Prof. Dr. Bernhard Hiebl, University of Veterinary Medicine Hannover Prof. Dr. Thomas John, University of Applied Sciences Neubrandenburg Prof. Dr. Wolfgang Kath-Petersen, University of Technology Cologne Adjunct Prof. Dr. habil. Sonja Kleinertz, IPB University, Bogor Almansyah Sinatrya, Universal Leaf Tobacco Cindy Septiany, student representative, Bogor Agricultural University				
Representative of the ASIIN headquarter: Daniel Seegers				

[1] ASIIN Seal for degree programmes
[2] TC: Technical Committee for the following subject areas: TC 08 – Agriculture, Nutritional Sciences and Landscape Architecture

Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture as of March 27, 2015	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Food Technology	STP/BSc. (Bachelor of Food Technology)	/	6	Full time	/	8 semesters	144 credits (217 ECTS)	Annually / 2012
Animal Science	STP/BSc. (Bachelor of Animal Science)	/	6	Full time	/	8 semesters	146 credits (220 ECTS)	Annually / 1964
Agribusiness	STP/BSc. (Bachelor of Agribusiness)	/	6	Full time	/	8 semesters	144 credits (217 ECTS)	Annually/ 2013
Aquaculture	STP/BSc. (Bachelor of Aquaculture)	/	6	Full time	/	8 semesters	144 credits (217 ECTS)	Annually / 1995

For the Bachelor's degree programme Food Technology, the institution has presented the following profile in the self-assessment report:

"The aims of the program are to:

1. Produce graduates who are academically capable of scientific reasoning in food science and technology based on tropical agricultural products,
2. Produce graduates who are academically capable of conducting research in food science and technology based on tropical agricultural products,
3. Produce graduates who are academically capable of implementing food science and technology based on tropical agricultural products in order to support community welfare, and

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

4. Increase cooperation and partnerships with institutions at home and abroad as well as with the business world and food industry to strengthen research and student learning processes."

For the Bachelor's degree programme Animal Sciences, the institution has presented the following profile in the self-assessment report:

"The aim of BAS is to produce graduates who are ready to work and study further. The Animal Sciences graduates have competencies as: Managers in the Livestock Industry, Entrepreneurs, Communicators, Community Leaders, Implementers and Developers of Animal Science (researchers, creators and innovators) and have international competencies, as follows:

1. The ability to plan and evaluate the production process in the livestock industry.
2. The ability to build a business in the field of livestock and other businesses related to livestock (for example livestock medicine, cage equipment, processing livestock products)
3. The ability to lead and drive development in the community in the field of livestock or related fields (example: Livestock Cultivation Consultant and Livestock Extension)
4. The ability to educate, research and facilitate creative and innovative learning through a sound knowledge of animal science and the ability to use information and communication technology to keep abreast of developments in the global livestock sector."

For the Bachelor's degree programme Agribusiness, the institution has presented the following profile in the self-assessment report:

"The program's objectives are to:

1. Produce graduates capable of entrepreneurship in the field of agribusiness,
2. Produce graduates capable of becoming agents of development and able to empower the agricultural community by applying an agribusiness system approach, and
3. Produce graduates who have the academic abilities to become technopreneurs in national and international institutions."

For the Bachelor's degree programme Aquaculture, the institution has presented the following profile in the self-assessment report:

"The BAq objectives are stated below:

1. Develop students to obtain the competency to design, implement and develop sustainable aquaculture practices, aquaculture science, and technology according to standard.
2. Equip students with the ability to work independently and in a team, develop good oral and written communication skills, critical thinking, innovative and able to utilize various sources of information to solve problems, possess high ethics and integrity, respect diversity, able to lead, organize existing resources and raise their entrepreneurial spirit."

C Peer Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Objective-module-matrices
- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Module descriptions
- Website
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The peers refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committee 8 (Agriculture, Nutritional Sciences and Landscape Architecture), the objective-module-matrices for each degree programme, the matching learning objectives and the modules as a basis for judging whether the Intended Learning Outcomes (ILO) of the Bachelor's degree program Food Technology, the Bachelor's degree program Animal Science, the Bachelor's degree programme Agribusiness and the Bachelor's degree program Aquaculture correspond with the competences as outlined by the SSC. They come to the following conclusion:

The descriptions of the qualification objectives are comprehensive and include the achieved competencies and possible career opportunities of the graduates. Furthermore, students, lecturers and industry representatives confirm that they are involved in the ongoing development and updating process of the ILOs. In the Self-Assessment Report, UNDIP states that the overall profile of all UNDIP graduates is reflected by the acronym COMPLETE. Meaning that all students finish their studies as COMmunicators, Professional Leaders, Entrepreneurs, Thinkers and Educators.

The ILOs of the study programmes, however, are more specific and were compiled in co-operation with the Directorate of Higher Education for Bachelor graduates and national entities such as the Indonesian Association Food Technology Experts (PATPI), the Leaders of Indonesian Animal Sciences University Forum (FP2TPI), the Indonesian Agribusiness Association and the Indonesian Fisheries and Marine Higher Education Leadership Forum (FP2PLKI). The learning outcomes of every study program comprise a set of attitudes, skills and knowledge, which describe a variety of tasks graduates will be able to complete.

Judging from an objectives-matrix that links the eight Programme Learning Outcomes (PLO) to the Subject-Specific Criteria for Bachelor's degree programme Food Technology as well as an objective-module-matrix that delineates in which modules students learn the skills purposed in the PLO, the peers see that the objectives and intended learning outcomes of the Bachelor's degree programme Food Technology are suitable to produce qualified graduates and fulfil the Indonesian Qualification Framework (IQF).. The descriptions of the qualification objectives are made accessible to all stakeholders as they can be found on UNDIP's website.

With regard to the objectives and learning outcomes of the Bachelor's degree programme Animal Science, the peers notice that UNDIP has formulated eleven PLOs, which cover four elements: attitude, generic skills, specific skills and knowledge. They fulfil the Indonesian Qualification Framework (IQF) standard for undergraduate education and are in line with the faculty's mission and vision, which is achieved by producing graduates with strong enthusiasm to learn and master the knowledge of animal science as well as related topics. Graduates are prepared to work as managers, entrepreneurs, scientists and communicators within the livestock industry or district offices.

In the discussions with the students and the teaching staff, the peers also learn that the students are very confident in finding a job after graduating and that around 10% of them are interested in continuing their studies. UNDIP also offers a consecutive Master's programme in Animal Science. Furthermore, the peers acknowledge that there is sufficient support for the students regarding their strategies for finding a suitable career (s. criterion 2.4).

The PLO of the Bachelor's degree programme Agribusiness fulfil the Indonesian Qualification Framework (IQF) standard for undergraduate education and are in line with the faculty's mission and vision. Students can practice their attained skills in UNDIP's campus store, which offers the opportunity for the students to sell products produced by all four study programmes. Besides the high amount of practical training within the single modules, the Field Work Practices and the Community Service, students get the chance to implement their own business plans and ideas. The consistency with the university's mission is

achieved by producing graduates with strong enthusiasm to learn and master the knowledge of Agribusiness. UNDIP has formulated eleven PLOs, which cover three elements: attitude, knowledge, skills; the latter is divided into generic and specific skills.

Though the objectives-matrix that links the eleven PLO to the Subject-Specific Criteria for Bachelor's degree programme Agribusiness as well as the objective-module-matrix that delineates in which modules students learn the skills purposed in the PLOs seem to present a coherent concept of the study programme, the peers are not sure, to what extent aspects of international law and international industry demands are reflected within the curriculum and the everyday teaching. The audit discussions revealed catch-up demand according to UNDIP's desire for international recognition as the programme seems to prepare students mostly for regional small scale businesses and could navigate more towards the challenges of bigger international companies.

According to the self-assessment report, graduates of the Aquaculture degree programme are capable of working in several professions, especially as entrepreneurs in the fish industry, teachers at aquaculture vocational schools, lecturers and employees in shrimp ponds and shrimp feed companies. They will support companies as technicians and managers and are able to conduct research in governmental or private research facilities.
To this end, graduates of the study programme will have the qualification to become:

1. Entrepreneurs
2. Manager, technician, and government official in the provincial and district fisheries offices and fish quarantine offices.
3. Educator and counsellor
4. Researcher in Aquaculture
5. Environmental saviour (Environmentalist).

UNDIP presents nine PLO for the Bachelor's degree programme Aquaculture, which reflect a sufficient level of education and adhere to the Indonesian Qualification Framework (IQF) standard for undergraduate education. They are in line with the faculty's mission and vision. To further proof that the PLO of the Bachelor's degree programme Aquaculture also correspond to the SSC of the Technical Committee 8, UNDIP provided an objective-matrix, which connects both and shows that all PLO are in accordance with the SSC 08.

In summary, the auditors are convinced that the intended qualification profiles of the four undergraduate programmes under review allow students to take up an occupation, which corresponds to their qualification. The peers agree that the qualification objectives of all programmes adhere to level 6 of the European Qualification Framework, which relates to

Bachelor's programmes and to the respective ASIIN Subject-Specific Criteria of the Technical Committee 8. They aim at the acquisition of subject-specific competences and are generally formulated clearly and precisely.

The peers appreciate that a regular revision process for the objectives, learning outcomes and curricula of the programmes is in place. Every five years, a larger revision takes place that includes internal as well as external stakeholders, while minor changes are made regularly. The students, alumni and representatives of schools and the private sector confirm that they are actively involved in these processes.

Criterion 1.2 Name of the degree programmes

Evidence:

- Self-Assessment Report
- Diploma Supplements
- Discussions during the audit
- List of laboratory equipment

Preliminary assessment and analysis of the peers:
The titles of the degree programmes follow the rules for naming study programmes set by the Indonesian Ministry of Education. The peers hold the opinion that the English translation and the original Indonesian name of the Bachelor's degree programmes Food Technology, Animal Science, Agribusiness and Aquaculture correspond with the intended aims and learning outcomes as well as the main course language.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Academic guidelines
- Module descriptions
- Objective-module-matrices

- Discussions during the audit

Preliminary assessment and analysis of the peers:
The curricula of the four degree programmes are designed to comply with the programme objectives and learning outcomes, and they are subject to constant revision processes. As such, the curricula are reviewed regularly and commented on by students and teachers as well as by external stakeholders such as alumni or partners from government and the private sector. Regular changes are made to ensure that the curricula are up to modern standards. Besides the objectives and learning outcomes defined by UNDIP itself, the curricula also take into account the Indonesian standards of higher education and the Indonesian national qualifications framework as well as the recommendations from industry.

The Bachelor's degree programme Food Technology comprises 68 courses, consisting of 50 compulsory courses and 18 elective courses. Students need to achieve 144 Indonesian credit points (SKS) to graduate, which equals 217.44 ECTS according to the SAR. The degree programme is designed for eight semesters but can be completed in a maximum of fourteen semesters. The average study duration is 7.5 semesters as most students are able to finish their studies ahead of time. The courses in the first two semesters convey basic knowledge of Agriculture and Agricultural technology as well as general knowledge in Chemistry, Biology, Physics and Mathematics. Students also take courses connected to the first two PLO which aim to empower them in social participation (English, Indonesian, Pancasila, Religion). Starting with semester three, the curriculum focuses on subjects specific to Food Technology. The elective courses, through which the students can gain further insights in some of these areas, are spread out over semesters three to six. In the sixth semester students have the chance to put their attained knowledge to the test during their Field Work Practice. The seventh semester contains the mandatory community service. Students begin to prepare for their thesis in the seventh semester and write it either in the seventh or eighth semester.

The Bachelor's degree programme Animal Sience comprises 146 SKS (220.56 ECTS) and is designed for eight semesters, but can be completed in a maximum of fourteen semesters. The students of the study programme gather an overview of Agricultural Science, Animal Behaviour, Animal Nutrition, Economics of Farm & Enterprises as well as Mathematics, Pancasila, National resilience and languages (Indonesian and English) in the first two semesters. Over the course of the first six semesters, they take mandatory courses on the different areas of Animal Science, such as Animal Breeding, Animal Reproduction, Poultry Production, Livestock Waste Management, Broiler management and Meat Management. From semester three to six, they have the chance to choose from 25 elective modules to sharpen their own profile, for example, by improving their communication skills or deepen their knowledge in respective domains of animal science. Besides the theoretical classes, they

also acquire practical competences through Lab & Field Works, which are part of almost every module. The mandatory elements of fieldwork practice and community service are located in the seventh semester. The students prepare their undergraduate thesis, which is written in the final semester, through the module Research Design in semester six by drafting a topic and handing in a proposal. The 146 SKS are distributed as follows: 11.6% national courses, 10.9% university courses, 61.5% faculty, study program courses and 16% for mandatory and elective courses focusing on marketing and processing of animal products.

The Bachelor's degree programme Agribusiness encompasses 144 SKS (217.58 ECTS) and is designed for eight semesters, but can be completed in seven semesters and a maximum of fourteen semesters. The first year represents a variety of modules, which comply with the human values mentioned in the PLO. General knowledge in natural sciences as well as language skills in English and Indonesian are conveyed to form a starting point for all students. Between semesters three and six the curriculum comprises general agricultural knowledge as well as entrepreneurial modules such as Macro Economics, Farm Enterprise, Marketing Management and Human Resources Management and additional elective courses. Within the sixth semester, students are obliged to engage in Student Community Service and have the chance to apply their theoretical knowledge in the Field Practice Course (Internship). The last year of the program is scheduled for the Bachelor Thesis.

The Bachelor's degree programme Aquaculture follows the same structure as the three mentioned programmes. The first year aims at the development and alignment of general knowledge and ethics, while students learn more about specific aquacultural topics from semester three to semester six. The offered modules range between Aquaculture engineering, Fish histology, Fish hatchery technology to Mariculture management and Aquaculture business. Within the sixth and seventh semester, students are able to choose four elective courses with a total amount of 12 credits. In total, they have to take 53 courses amounting to 144 SKS (217 ECTS) to graduate. The modules demand engagement in face-to-face teaching, group projects and individual assignments. Within the seventh semester students do their internship and their Community Service. The curriculum of the Bachelor's degree programme Aquaculture has been revised in 2017 in close cooperation with the stakeholders of the programme.

Usually during the last year of studies, Bachelor's students must complete the community service. The peers discuss with the programme coordinators about the content and the goal of this course. The programme coordinators explain that community service is compulsory for all Indonesian students. It has a minimum length of eight weeks and often takes place in villages or rural areas where students stay and live together with the local people. The course is designed "to allow students to apply their knowledge based on their field in

or-der to empower society." Since the community service usually takes place in remote are-as, the students cannot attend any classes during this time. The students work in inter-disciplinary teams during the community service in order to advance the society and bring further development about. This course was introduced at all Indonesian Universities in 1971. The assessment of the community service consists of a work plan, programme im-plementation, and activity report. The peers understand that students should work for the benefit of the community and the Indonesian society during the community service and support this concept.

Overall, the peers are satisfied with the curricula of all programmes. They see that the pro-grammes are well structured and that the modules build on each other in a reasonable way, enabling the students to effectively reach the learning outcomes as laid down for the programmes as a whole.

With regard to the internships, the peers learn that the fieldwork practice in companies usually takes 30 working days or 6 weeks. Through the independent campus programme, which was introduced in 2020, students in all study programmes can expand the duration of their internship until 6 months (see criterion 2.1 for more details). Both are valued by the students as they allow them to apply the skills, they learned in the programmes in a real working environment. The university has established useful guidelines for these intern-ships and every student has one advisor at the company, and one at the university to en-sure that the work contributes to achieving the programme's learning outcomes. However, during the discussion, the prospective employers explain that the 30 working days or the 6 weeks of the mandatory internship in the Bachelor's degree programmes are not sufficient in order to introduce the students fully to the mechanisms of the company and familiarize them with the subject matter. Moreover, it could be helpful for students to be able to have access to a list of participating companies via the integrated information system (SIAP) in order to get a better overview. Therefore, the peers recommended considering a length of six months for the mandatory office internship outside the university, to establish corre-sponding regulations, to adapt the number of SKS accordingly, and to include internship opportunities in companies via the integrated information system (SIAP).

Furthermore, the peers discuss with UNDIP the ways in which the students can improve their English proficiency. They learn that in the Bachelor's degree programmes the lecturers try to implement English lectures and English assignments to increase the overall English proficiency of their students. Additionally, English literature is suggested for the individual modules in the module descriptions. In all study programmes, students have the possibility of joining the English study club, which is offered by the Language Centre. Students can obtain English certificates there, for example by taking the TOEFL ITP. The peers appreciate these efforts.

Finally, the peers ask how the teaching staff and the prospective employers evaluate the soft skills of the students. They learn that the students from UNDIP are particularly resilient both in terms of competition and their perseverance. In spite of this, the industry representatives also underline that specific soft skills such as the ability to communicate with clients, to publically speak and present in front of an audience and self-confidence could still be improved. They also see room for improvement regarding the entrepreneurial skills of the students. Consequently, the peers recommend strengthening those skills by providing feedback to students on their performance.

The peers also recommend putting more emphasize on the bachelor thesis, which is currently awarded six SKS. Within the preparation and the research and writing process, students learn most vividly how to design their own projects and to manage their research intentions either together with industry representatives or alone. The thesis shall represent an intermediate step between study and working life. Therefore, the thesis should be awarded with a higher number of credits and shall take a bigger part in the curriculum.

In summary, the peers are satisfied with the curricula but advise UNDIP thinking in larger dimensions, when it comes to the development of the curriculum. This implies new technologies as well as the needs of global companies that differ from those in local areas.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Students handbook
- Academic guidelines
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the peers:

According to the self-assessment report, admission of new students to UNDIP is possible via different modes of entry (national and local modes). The different modes of entry are designed not only to select the best students from high schools but also to provide opportunities for high school students from all over Indonesia, especially those from rural areas.

There are three different paths of admission into the Bachelor's degree programmes:

1. National Selection of Higher Education or University (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during high school.
2. Joint Selection of Higher Education or University (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national selection test is held every year for university candidates. It is a nationwide written test (subjects: mathematics, Bahasa Indonesia, English, physics, chemistry, biology, economics, history, sociology, and geography).
3. Selection according to UNDIP scheme policy: the Bachelor's degree programmes Food Technology, Animal Science, Agribusiness and Aquaculture also receive students from local (UNDIP) selection. Similar to SBMPTN, students from UNDIP selection are selected based on a written test.
4. High Achieving students can be selected through the High Achieving Student Selection (SBUB) if they present a portfolio of non-academic-achievements and pass a written test.

The tuition fees for the programmes are determined by the Ministry of Finance based on a proposal from UNDIP. There are different levels for these fees, depending on the parents' income. For students from underprivileged families, there is no tuition fee. Furthermore, there are various options for scholarships that cover the tuition fees.

The admission website informs potential students in great detail about the requirements and the necessary steps to apply for admission into the programmes. Since the rules are based on decrees by the ministry of education and on the university's written regulations, the peers deem them binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

However, one aspect of the Admission Requirements remains critical to the peers. The exclusion of students who are color blind, deaf or have a bad health condition cannot be justified due to laboratory safety or other reasons mentioned during the audit. Hence, the auditors urge UNDIP to no longer exclude students based on such arbitrary disabilities.

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

[…]

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Objective-Module-Matrices
- Curriculum handbooks of the degree programmes
- Discussions during the audit
- Overview of student mobility

Preliminary assessment and analysis of the peers:
The Bachelor's degree programmes under review are designed for 4 years and the students need to achieve 144 SKS in the Bachelor's degree programmes Food Technology, Agribusiness and Aquaculture and 146 SKS in the Bachelor's degree programme Animal Science (which is both equivalent to some 217 ECTS). Each semester is equivalent to 16 weeks of learning activities, including one week for midterm exams and one week for final exams.

After analysing the module descriptions and the study plans, the peers confirm that all degree programmes under review are divided into modules, and that each module is a sum of coherent teaching and learning units. All programmes contain adequate practical elements and allow the students to define individual focuses through broad ranges of electives and specialization areas.

In summary, the peers gain the impression that the choice of modules and the structure of the curriculum ensures that the intended learning outcomes of the respective degree programme can be achieved.

International Mobility

The Self-Assessment Report as well as the discussions make it clear that that becoming an international acknowledged university is one of UNDIP's primary goals. The peers point out that international mobility, with regard to the lecturers as well as to the students, is a key factor in these efforts.

The peers learn that UNDIP already provides some opportunities for students to conduct internships and study semesters abroad. There are cooperation agreements with organisations in over 20 countries worldwide (for instance, the United States, Malaysia, Singapore, Taiwan, Sweden and Japan) partly regarding student exchange, partly regarding research collaboration. The university has established its own scholarship for international mobility and manages various external scholarships sponsored by the Indonesian government and other partner institutions. Moreover, as part of the government's policy, an independent campus programme has been implemented in 2020. By choosing this programme, students are given the chance to spend one semester at another university or a ‚company in Indonesia or abroad. Furthermore, both faculties, Animal and Agricultural Sciences as well as Fisheries and Marine Science, give students the opportunity to study at several other universities as part of a summer school or a double-degree programme. For this purpose, UNDIP has concluded partnerships with Asia University and Tunghai University in Taiwan, Kamada Soy Sauce and Kagawa University in Japan. UNDIP also offers summer courses for foreign students coming from Nigeria, America, Taiwan, Timor Leste, Philippines and Thailand. This will enable students to collect further experience prepare them to enter the job market after their studies. Qualifications obtained at other universities in Indonesia or abroad are recognised in line with the courses at UNDIP. The students can best realise such a stay in semesters 3 to 6 of the Bachelors's degree programmes, or in case of a shorter stay, during the holidays. As they confirm, there are no problems with credit transfer or the organisation of student mobility.
The peers appreciate the efforts undertaken by the university to foster student mobility as it is very useful for students to spend some time abroad to improve their English proficiency, to get to know other educational systems, and to enhance their job opportunities.

As the peers could learn from the students during the audit, the possibilities to go abroad are still only accessible to a small number of students. The application process as well as financial aspects keep students from participating in internships or exchanges. The peers therefore recommend extending the offer to all students. This will benefit the English language proficiency and intercultural skills of the students and prepare them for international labour markets.

Criterion 2.2 Work load and credits

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Survey of student satisfaction related to the workload
- Module descriptions
- Discussions during the audit
- Students handbook

Preliminary assessment and analysis of the peers:
Based on the National Standard of Higher Education of Indonesia, the four programmes use a credit point system called SKS, which is regulated as follows:

- 1 CP of teaching covers 50 minutes contact hours + 60 minutes assignment/tutorial + 60 minute of self-studies per week
- 1 CP of practical work covers 170 minutes per week

In comparison to the ECTS credit system, wherein 1 ECTS equals 25-30 hours of students' workload, it is determined that 1 CP is awarded for 170 minutes of work per week. One semester usually consists of 14 lecture meetings. The students' workload (contact hours and self-studies) is measured in Indonesian credit points (SKS), and converted to the European Credit Transfer System (ECTS). According to the legal requirements, the actual number is 146 and 144 SKS (some 217 ECTS) for the Bachelor's degree programmes.

The workload is spread relatively evenly with each semester containing between 18 and 24 SKS in the four programmes according to the regular study plan. The workload of the last two semesters is markedly reduced to give the students enough time for their theses as well as to already start looking for a job. However, the effective number of credit points that the students may take depends on their average Grade Point Average (GPA), yet the maximum amount of credit points is 24. This mechanism is supposed to ensure that the students can really handle the workload. It also means that, theoretically, students can finish their studies in less than 8 semesters. The average study duration of 7.5 semesters (BFT), 8 semesters (BAS), 7.6 semesters (BAG) and 7.8 semesters (BAQ) show that students actually benefit from this flexible model. The peers confirm that the distinction between classroom work and self-studies is made transparent and is in line with the credits awarded.

The peers notice that many modules are quite small in terms of credit points and they worry that this might lead to a very high number of exams per semester and consequently to a heavy workload for the students. The students confirm that the workload is high but remains manageable for them. They are still able to work part-time jobs and have time for family, friends and their hobbies. Additionally, the peers see that almost all students complete the degree programmes, as there are only a few students who dropped out of the degrees programmes in the last 3 years. This verifies that all four degree programmes under review can be completed in the expected period.

Criterion 2.3 Teaching methodology

Evidence:

- Photos and videos of laboratories
- Self-Assessment Report
- Module descriptions
- Samples of lecturer evaluation by students
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The four programmes under review make use of several different educational methods for each course such as interactive lectures, small group discussions, problem-based learning, project-based learning, collaborative learning, laboratory practical work, computer-based assignments, excursions and final tasks consisting of internship, student community service, seminars, final project and case-study. In their core subjects, students from the Bachelor's degree programme Food Technology focus on the analysis of chemical properties of food, the identification and analysis of pathogenic and spoilage microbes and the ability to explain food biochemical processes. In the Bachelor's degree programme Animal Science, the focus lies on the ability to apply livestock technology oriented towards increasing production, efficiency, quality and sustainability. Starting from the third semester, the Animal Science specific modules are therefore split into two components, namely, in-class activity to convey theoretical knowledge and Lab & field works to ensure students will go through practical training. Students from the Bachelor's degree programme Agribusiness shall obtain the ability to conduct agricultural business using the concepts of sustainable agriculture based on quantitative and qualitative analyses. They can use the universities small supermarket to sell products with their own business plans. The teaching methods are

adapted to the mediation of basic theoretical knowledge, corresponding the bachelor degree level, though they also provide practical experience. The Bachelor's degree programme Aquaculture wants to produce both researchers and entrepreneurs. They therefore provide facilities, which enable the students to conduct their own experiments (e.g., on catfish). Theoretical and practical elements of teaching and learning are combined in most of the modules of this programme.

UNDIP introduced an online Learning Management System (SIAP) in order to monitor the teaching methodology that is applied and make accessible the various course materials. Therefore, each teacher or professor must upload his or her teaching materials and working procedures on SIAP.

During the classes, active and interactive teaching methods (e.g., lectures, discussions, reports, presentations, and group work) are applied. UNDIP wants to encourage the students to gain knowledge from different scientific areas and wants to introduce them to research activities. This should ultimately contribute to the transition from a teacher centred learning approach to a student-centred learning approach. The teaching and learning is supported by a broad range of media, both traditional (books, papers) and online (videos, presentations etc.). During the Covid-19 pandemic, UNDIP has swiftly switched to online and hybrid learning with videoconferences, recorded videos and other media.

During the discussions with the programme coordinators and the teaching staff, the peers learn that the teaching staff tries to implement English assignments such as presentations and written homework to support the English language proficiency of the students. Some of the face-to-face teaching is also held in English depending on the lecturer. The peers welcome this approach. Regarding the students English language proficiency, the peers are very satisfied as the students audit session was the one which needed the least amount of interpretation.

Criterion 2.4 Support and assistance

Evidence:

- Self-Assessment Report
- Curriculum handbooks for all degree programmes
- Students handbook
- Discussions during the audit

Preliminary assessment and analysis of the peers:
In order to support students in completing their studies on time with good achievements,

the university and the faculty provide academic and personal support and assistance through various means. The offers can be divided into two types: academic support and non-academic support. Academic advice includes the academic advisors, the International Office, the programme coordinators, the Dean and the supervisors for the theses, final projects and dissertations. Non-academic support comprises the Diponegoro National Hospital, the Sports Centre, the Language Centre, the Career Centre, the Central Library, computer laboratories, Centre of Technology and student dormitories.

The main contact person for every student is their academic advisor, which is assigned to them in their first semester. An academic advisor shall help them develop an adequate schedule for their studies, choose electives according to their skills and interests and support them in case of academic and non-academic problems. Each student has the opportunity to meet with their academic advisor, who is also responsible for monitoring their study progress, at least three times per semester. Furthermore, there are supervisors for the thesis, the fieldwork practice and the community service who give advice on specific issues related to these aspects. At the beginning of each semester, the GPA provides direction for the students regarding their study plans, targets to be achieved and strategies for selecting courses. During the semester, the GPA monitors the academic progress of the students. At the end of the semester, the GPA evaluates the student's achievement under their supervision by checking the GPA that the students achieve. In UNDIP, this mentoring process is supported by the presence of the Information System on Academic, Research, and Community Service (SIAP) that facilitates the GPA to monitor the academic progress and approval for semester plans as well as the final undergraduate thesis.

The Diponegoro National Hospital helps and guides students who have individual problems, such as anxiety, depression or other personal or psychological issues. The Career Centre offers scholarships, entrepreneurship programmes, student creativity programmes and other similar activities. There are many scholarships offered to students (e.g., from private companies, the government or other foundations). This includes scholarship for students from low-income families and for those with high academic achievements. New students can attend classes to develop their effective learning and soft skills.

In addition, every student who enrols for the thesis or final project course will be assigned one or two thesis supervisors. The role of the thesis supervisors is to help students to complete their thesis research; they also monitor the progress of the thesis in order to ensure the completion of the thesis in the intended amount of time.

The students confirm towards the peers that they are supervised in the research group during their work on the thesis. There are regular meetings where the students present their results and receive feedback from the other members.

All students at UNDIP have access to the Information System on Academic, Research, and Community Service (SIAP). By using SIAP, lecturers can upload their syllabus and learning materials or modules as well as assignment for students. Through SIAP, students can also interact with other students and lecturers.

The peers notice the good and trustful relationship between the students and the teaching staff. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well-informed about the services available to them.

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

[…]

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- Self-Assessment Report
- Module descriptions
- Examination regulations
- Curriculum handbooks for all degree programmes
- Samples of student's work (projects, exams and thesis)
- Statistical data
- Websites
- Academic Calendar

Preliminary assessment and analysis of the peers:

Each course has to determine objectives, which support the achievement of the Programme Learning Outcomes of the respective programme. Accordingly, each course must assess whether all defined learning outcomes stated in the module description have been achieved.

According to the self-assessment report, quizzes, tests, practical performances, assignments, small projects and presentations are employed to assess the students' achievement of the learning outcomes. At the first meeting of a course, the students are informed about what exactly is required to pass the module. The form and length of each exam is mentioned in the module descriptions for BFT, BAS and BAG that are available to the students via UNDIP's homepage and in the internal university system known as Information System on Academic, Research, and Community Service (SIAP). Unfortunately, the English version of the module handbook for BAQ does not list the exam durations for the single modules. It is common to hold small quizzes every two or three weeks, but there are generally no unscheduled tests. The students are informed about mid-term and final exams via the academic calendar. The final grade of each module is calculated based on the score of these individual kinds of assessment. The exact formula is given in the module handbook. UNDIP uses a grading system with the grades A, B, C, D and E, where a C (equivalent to a Grade Point of 2) is necessary to pass a module and a B (equivalent to a Grade Point 3) is necessary to pass the final project. Students who get an E are obliged to retake the course and the exam in the regular semester or in short/intermediate semester. Students who get B, C, and D can improve in the regular semester or in the short/intermediate semester, where the grade listed on the transcript is the highest.

Based on the academic regulation, to be eligible to take the final exam, students must attend at least 75 % of the total course sessions. Students who have obstacles due to illness or other reasons and are not able to fulfil 75% of the total courses sessions need to inform his/her academic supervisor and related lecturers. The arrangement to re-sit and exam can be adjusted in advance as compensation for the student's disability by providing the evidence. Furthermore, students who are not able to attend the final exam due to illness or other reasons can provide proof and take the follow-up exam scheduled by the study programme. Since it did not become neither clear during the audit nor while going through the documents UNDIP provided, the peers request to implement disability compensation measures to support students with disadvantages due to disability, injuries or family problems. This should not only give them the chance to re-sit exams but also to apply for special treatment (e.g. different exam dates, more time, use of tools).

The peers discuss with the students how many and what kind of exams they have to take each semester. They learn that for most courses there is one mid-term exam and one final exam every semester. For other courses, there is only one final exam every semester. Usually, there are additional practical assignments or quizzes. The final grade is the sum of the sub exams. The students appreciate that there are several short exams instead of one big exam as this requires them to continuously study during the entire semester and not having to solely work for one final exam at the end of the semester. The students also confirm that

they are well-informed about the examination schedule, the examination form and the rules for grading.

Students are required to write a bachelor thesis in the last year of their studies. They are admitted to write their thesis if they have achieved the required number of credits with a minimum GPA of 2.5 and no D grades. They also have to fulfil all of their administrative requirements at the university and faculty level. Usually, there are two supervisors for each student who will evaluate the student's proficiency to master the technical literature, their writing, the analysis, their problem-solving competences and communication as well as presentation aspects during the bachelor thesis examination. One supervisor will act as the principal supervisor and the other as co-supervisor. In case the student writes her or his thesis in collaboration with the industry, she or he is also assigned a supervisor from the industry. After completing the work on the thesis, the student has to present and defend the results in front of teachers and fellow students.

The peers discuss with the programe coordinators, the members of the teaching staff, and the students about the process of finding a suitable topic of the thesis. The students can propose their ideas to the lecturers and to industry representatives, which opens up the possibility of writing their thesis in cooperation with a company. If they do not find a suiting topic, they can ask their academic advisor or other teachers for suggestions. The peers also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples.

The peers conclude that the criteria regarding the examinations system, concept, and organization are fulfilled and that the examinations are suitable to verify whether the intended learning outcomes are achieved or not.

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

[…]

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-Assessment Report
- Staff Handbook
- Samples of lecturer evaluation by students
- Study plans of the degree programmes
- Module descriptions
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the peers:
At UNDIP, the staff members have different academic positions. There are professors, associate professors, assistant professors and lecturers. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, a full professor needs to hold a PhD degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position. The main difference of tasks and responsibilities based on academic staff position lies in the proportion of teaching and research activities. The higher the academic staff position is, the greater is the proportion of research activities, but the lower is the proportion of teaching activities. Overall, the staff members state that their tasks are distributed about evenly between administrative, teaching and research activities.

There are 14 teaching staff members for the Bachelor's degree programme Food Technology (11 with a doctorate, 1 with a master's degree and 2 lecturers in an ongoing doctoral program), 46 for the Bachelor's degree programme Animal Science (46 with a doctorate, 10 with a master's degree and 2 lecturers in an ongoing doctoral program), 9 for the Bachelor's degree programme Agribusiness (9 with a doctorate, 6 with a master's degree and 2 lecturers in an ongoing doctoral program) and 20 for the Bachelor's degree programme Aquaculture (17 with a doctorate, 5 with a master's degree and 3 lecturers in an ongoing doctoral program). The number of full professors is 2 for BFT, 9 for BAS, 1 for BAG and 3 for BAQ as can be seen from the staff handbooks and the lists of lecturers' certificates. As the peers deem these numbers rather low, they asked the teaching staff if they would like to further qualify themselves to be full professors in the future. They learn that the full professorship can only be attained by collecting scores due to publications and teaching experience. The score will be better for publications in renowned journals or if the publication

gains international recognition. Taking the next step to the associate or full-professorship level can therefor take several years. As these titles do not fully reflect the qualification of the teaching staff, the peers are still satisfied with the overall composition of the teaching staff. The student to lecturer ratios are close to or even better than the advised ratio of 1:30. The ratios for the different programmes are 1:35 for the Bachelor's degree programme Food Technology, 1:25 for the Bachelor's degree programme Animal Science, 1:32 for the Bachelor's degree programme Agribusiness and 1:24 for the Bachelor's degree programme Aquaculture. In addition, the faculty regularly invites visiting lecturers from Indonesia and abroad to facilitate academic exchange.

Recruiting new teaching staff follows a defined procedure starting with a needs analysis of the degree programme, the proposal for new positions to the university, a public announcement and finally the recruitment based on the results of a basic competence test, a field competence test and an interview. The peers recommend to intensify the recruitment of international staff as it will help to attract students and to develop the university on an international level. For Food Technology, Agribusiness and Aquaculture the peers also recommend to either develop the existing staff into full professors or to recruit full professors, to maintain and improve the quality of these programmes.

The academic staff is involved in a number of research projects funded by grants from the Indonesian government, the university itself or other research funds. This results in publications. If the respective grants allow it, students are involved in these projects, mostly through undergraduate theses.
In summary, the peers confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes.

Criterion 4.2 Staff development

Evidence:

- Self-Assessment Report
- Staff handbook
- Discussions during the audit

Preliminary assessment and analysis of the peers:

According to the self-assessment Report, UNDIP encourages the continuing professional development of its staff. Various scholarships and funds are used to support lecturers in applying for professorships or to conduct research for the purpose of academic development and recognition. Young lectures are obliged to engage in didactical and pedagogical training and in international collaborations. Senior lecturers must mentor and train the newly recruited staff in three aspects: teaching, research, and community services. The junior staff has to assist the senior as a sit-in lecturer for a minimum of one semester.

Lecturers also receive training on how to prepare their modules in English. The Research and Community Service Institute was established to provide proofreading services for all lecturers who want to publish English articles. The institute also helps with administrative tasks lecturers face when applying to publish in international journals. The faculty is committed to supporting academic development through domestic and overseas training for teaching staff, even though their competency and expertise have already met the government standard. Therefore, UNDIP has signed a large number of MoUs or Letters of Agreement (LoA) with universities all around the world. Furthermore, the teaching staff is encouraged to study abroad or to participate in international research projects and conferences in order to enhance their knowledge, increase their English proficiency and build international networks. For this purpose, the university informs about possible scholarships either from Indonesia itself or from foreign governments to support academic mobility. In general, the staff exchange is managed and under the coordination of the Administration Bureau for Innovation, Cooperation, Foreign Relations and Accreditation of UNDIP.

The peers appreciate UNDIP's commitment and understand the potential these cooperations depict. Judging from the English language proficiency of the lecturers and their actual abroad experience presented during the audit, the peers recommend further promoting the existing possibilities for international exchange and advising the lecturers to seek for cooperation not only in Asia but also around the world.

The peers discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the lecturers are satisfied with the internal qualification programme at the university, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars.

Criterion 4.3 Funds and equipment

Evidence:

- List of laboratories and equipment
- Photos and videos of the facilities
- Partnership agreements
- Recapitulation of budget
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The university and the faculty are mainly funded by the Indonesian government through the tuition fees and through grants for research projects. The figures presented by the university show that the faculty's income is stable, and the funding of the degree programmes is secured. The academic staff emphasise that from their point of view, the four undergraduate programmes under review receive sufficient funding for teaching and learning activities. The students confirm this positive impression and state their satisfaction with the available resources.

In preparation of the audit, the university provides a number of videos showing the laboratories of the programmes. During the online visit, the laboratories, the teaching farms, the lecture rooms and the library were shown in more detail. The peers notice that the facilities are in a very good condition. The university has teaching as well as research laboratories and a variety of fish tanks and stables for different animals, who serve as research subjects, including 33.000 pullets, 24 dairy cows and 33 goats. The university has licensed Microsoft Office and other standard software and provides the students full access to this software. Students and teaching staff are satisfied with their functionality. The central library, the libraries of the different departments as well as the reading room of the faculties are well-equipped overall.

Regarding the Bachelor's degree programme Food Technology, most of the listed equipment as well as what could be seen during the audit is used for Food Production. As the peers could learn equipment for Food Processing does exist in the facilities of the other programmes. The peers therefore recommend that UNDIP has to make sure that all of these technologies are available for students without restrictions.

Another critical aspect, which the peers noticed during the live presentations of the laboratories, is the lack of applied hygienic and safety protocols. The responsible lecturers mentioned that such protocols exist, but as the peers could see during the presentations, not

all laboratory assistants were following those rules. Working barefoot and without masks, hairnets and ignoring the disinfection facilities can lead to injuries and the transmission of zoonotic diseases. The peers therefore require the university to make sure that hygiene and safety of all students and staff members are ensured.

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

[…]

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Module descriptions
- Websites

Preliminary assessment and analysis of the peers:
The module handbooks for all four programmes have been published on UNDIP's website and are thus accessible to the students as well as to all stakeholders. The peers observe that they contain information about the people responsible for each module, the teaching methods and workload, the credit points awarded, the intended learning outcomes, the examination requirements, the forms of assessment, the applicability, the admission requirements and details explaining how the final grade is calculated.

Two aspects that can be improved are the lack of exam durations in the module handbook for the Bachelor's Degree programme Aquaculture and a clear sequence of modules in the module handbook for the Bachelor's degree programme Food Technology (for example by starting from modules of semester one and finishing with modules of semester eight).

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Sample Transcript of Records for each degree programme
- Sample Diploma certificate for each degree programme
- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the peers:
The peers confirm that the students of all four degree programmes under review are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Transcript of Records lists all courses that the graduate has completed, the achieved credit points, grades, and cumulative GPA. The Diploma Supplements contain all the necessary information about the degree programmes.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Reports
- Curriculum handbooks for all degree programmes
- Academic Guidelines
- Examination regulations
- All relevant regulations as published on the university's website

Preliminary assessment and analysis of the peers:
The peers confirm that the rights and duties of both UNDIP and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester.

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

[…]

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The peers discuss the quality management system at UNDIP with the programme coordinators. The peers learn that there is an institutional system of quality management aimed at continuously improving the degree programmes.

This system relies on internal (IQAS) as well as external (EQAS) quality assurance. IQAS encompasses all activities focused on implementing measures for improving the teaching and learning quality at UNDIP. EQAS focuses on both national and international accreditations. Every degree programme and every Higher Education Institution in Indonesia has to be accredited by the national Accreditation Agency (BAN-PT). UNDIP as an institution as well as the four degree programmes under review have received the highest accreditation status (A) from BAN-PT.

Since UNDIP is striving to become an internationally acknowledged university, the reliance on students' feedback and the necessity to ensure and improve the employability of the graduates are of major importance to the coordinators. Internal evaluation of the quality of the degree programmes is mainly provided through student, alumni and employer surveys. The students give their feedback on the courses by filling in the questionnaire online. The course evaluations are conducted at the end of each semester; the questionnaire was developed by the course survey committee and includes questions with respect to the course in general and about the teachers' performance. Further, surveys are carried out by gathering statistics about graduates and alumni. The discussion with the students revealed that those in charge are always eager and open for feedback aside from the official evaluations, and that students have the impression that their comments are taken into consideration with regard to the further improvement of the programmes. This becomes apparent in the constant curricular revision process that is performed under participation of students and industry partners. The industry representatives confirm in the discussion that the university is eager to receive feedback about new developments and trends and the employability of their graduates.

Concerning the internal feedback loops, the results of the course evaluations are centrally assessed and analysed before they are communicated to the Head of Department. He would then be responsible to initiate any measures if problems or needs for improvement have been detected. A summary of the results is made accessible to the students. In case

the satisfaction of the students with staff members is deficient, the Heads of Department will contact the respective teacher, discuss the issue and propose solutions. If no improvement can be achieved over a longer period, the staff member will be dismissed. Thus, the peers agree that the quality management circles at UNDIP are well-established and work under participation of all stakeholders.

In summary, the peers are satisfied with the quality management system at UNDIP, especially with the continuous feedback loops and the involvement of important stakeholder groups such as students, alumni and representatives from the industry.

However, they also see room for improvement and wish for a structured approach which helps stakeholders to communicate directly with the faculty. They also recommend strengthening the students association by providing them with formal voting rights to visualize their influence and make it immediate.

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

[…]

D Additional Documents

No additional documents needed.

E Comment of the Higher Education Institution

The University agreed not to comment on the report due to schedule scarcity.

F Summary: Peer recommendations (01.03.2022)

The peers summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Food Technology	With requirements for one year	--	30.09.2027
Ba Animal Science	With requirements for one year	--	30.09.2027
Ba Agribusiness	With requirements for one year	--	30.09.2027
Ba Aquaculture	With requirements for one year	--	30.09.2027

Requirements

For all study programs

A 1. (ASIIN 4.3) The laboratories must adhere to international safety and hygienic standards.

A 2. (ASIIN 3) Disability measures and compensations for disabled students must be implemented.

A 3. (ASIIN 1.4) The admission criteria have to be advised in a way that does not exclude disabled students for no valid reason.

For Ba Food Technology

A 4. (ASIIN 4.3) It has to be ensured that students of the Food Technology programme are granted access to facilities of other programmes and faculties to use their equipment to experience the full range of Food Technology technologies.

Recommendations

For all study programmes

E 1. (ASIIN 6) It is recommended to install a structured approach to implement stakeholder's needs, which enables (only) the stakeholders to communicate directly with the faculty.

E 2. (ASIIN 1.3) It is recommended to consider advancing technologies while developing the curriculum.

E 3. (ASIIN 6) It is recommend to give voting rights to the students council and to directly involve students in the decision making process for further developing the degree programs.

E 4. (ASIIN 3) It is recommended to award the bachelor thesis with more than six credit points.

E 5. (ASIIN 6) It is recommended to intensify the cooperation between the study programs.

E 6. (ASIIN 4.1) It is recommended to strengthen the importance of English language proficiency in the recruitment process of new staff members.

E 7. (ASIIN 6) It is recommended to promote the academic mobility of teaching staff and students and to cooperate with further international universities.

E 8. (ASIIN 1.1) It is recommended to improve the entrepreneurial skills of the students.

E 9. (ASIIN 1.1) It is recommended to prepare the students for industrial production and thus to work within bigger international companies.

For Ba Agribusiness, Ba Food Technology, Ba Aquaculture

E 10. (ASIIN 4.1) It is recommended to increase the number of full professors.

For Ba Food Technology

E 11. (ASIIN 1.3) It is recommended to include analyses on molecular level to correspond to the industries expectations.

G Comment of the Technical Committees

Technical Committee 08 – Agriculture, Nutritional Sciences and Landscape Architecture (10.03.2022)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers without any changes.

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

Degree Programme	**ASIIN-seal**	**Subject-specific label**	**Maximum duration of accreditaiton**
Ba Food Technology	With requirements for one year	--	30.09.2027
Ba Animal Science	With requirements for one year	--	30.09.2027
Ba Agribusiness	With requirements for one year	--	30.09.2027
Ba Aquaculture	With requirements for one year	--	30.09.2027

H Decision of the Accreditation Commission (18.03.2022)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission discusses the accrediting procedure and follows the assessment of the peers and the TC without any changes.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Food Technology	With requirements for one year	--	30.09.2027
Ba Animal Science	With requirements for one year	--	30.09.2027
Ba Agribusiness	With requirements for one year	--	30.09.2027
Ba Aquaculture	With requirements for one year	--	30.09.2027

Requirements

For all study programs

A 1. (ASIIN 4.3) The laboratories must adhere to international safety and hygienic standards.

A 2. (ASIIN 3) Disability measures and compensations for disabled students must be implemented.

A 3. (ASIIN 1.4) The admission criteria have to be revised in a way that does not exclude disabled students for no valid reason.

For Ba Food Technology

A 4. (ASIIN 4.3) It has to be ensured that students of the Food Technology programme are granted access to facilities of other programmes and faculties to use their equipment to experience the full range of Food Technology technologies.

Recommendations

For all study programmes

E 1. (ASIIN 6) It is recommended to install a structured approach to implement stakeholder's needs, which enables the stakeholders to communicate directly with the faculty.

E 2. (ASIIN 1.3) It is recommended to consider current technologies while developing the curriculum.

E 3. (ASIIN 6) It is recommended to give voting rights to the students council and to directly involve students in the decision making process for further developing the degree programmes.

E 4. (ASIIN 3) It is recommended to award the bachelor thesis with more than six credit points.

E 5. (ASIIN 6) It is recommended to intensify the cooperation between the study programs.

E 6. (ASIIN 4.1) It is recommended to strengthen the importance of English language proficiency in the recruitment process of new staff members.

E 7. (ASIIN 6) It is recommended to promote the academic mobility of teaching staff and students and to cooperate with further international universities.

E 8. (ASIIN 1.1) It is recommended to improve the entrepreneurial skills of the students.

E 9. (ASIIN 1.1) It is recommended to prepare the students for industrial production and thus to work within bigger international companies.

For Ba Agribusiness, Ba Food Technology, Ba Aquaculture

E 10. (ASIIN 4.1) It is recommended to increase the number of full professors.

For Ba Food Technology

E 11. (ASIIN 1.3) It is recommended to include analyses on molecular level to correspond to the industries expectations.

I Fulfilment of Requirements (24.03.2023)

Analysis of the peers and the Technical Committees 08 – Agriculture, Forestry, Food Sciences, and Landscape Architecture (16.03.2023)

Requirements

For Bachelor's degree Architecture

A 1. (ASIIN 4.3) The laboratories must adhere to international safety and hygienic standards.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: UNDIP has submitted documentation of the adjusted safety and hygienic standards.
TC 08	fulfilled Vote: unanimous Justification: The TC discusses the procedure and agrees with the assessment of the expert group.

For Master's degree Architecture

A 2. (ASIIN 3) Disability measures and compensations for disabled students must be implemented.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: The special needs of students with disabilities are now being addressed.
TC 08	fulfilled Vote: unanimous Justification: The TC discusses the procedure and agrees with the assessment of the expert group.

A 3. (ASIIN 1.4) The admission criteria have to be revised in a way that does not exclude disabled students for no valid reason.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: Students are now able to participate in the study programs and are further supported by student assistants.
TC 08	fulfilled Vote: unanimous Justification: The TC discusses the procedure and agrees with the assessment of the expert group.

For Ba Food Technology

A 4. (ASIIN 4.3) It has to be ensured that students of the Food Technology programme are granted access to facilities of other programmes and faculties to use their equipment to experience the full range of Food Technology technologies.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: Students in the different programs have cross access to the different laboratories. Food Technology students have access to all the department's equipment and experience the full range of food technology.
TC 08	fulfilled Vote: unanimous Justification: The TC discusses the procedure and agrees with the assessment of the expert group.

Decision of the Accreditation Commission (24.03.2023)

The accreditation commission discusses the procedure and follows the assessment of the technical committee 08.

The Accreditation Commission decides to award the following seals:

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Food Technology	All requirements fulfilled	--	30.09.2027
Ba Animal Science	All requirements fulfilled	--	30.09.2027
Ba Agribusiness	All requirements fulfilled*	--	30.09.2027
Ba Aquaculture	All requirements fulfilled	--	30.09.2027

Appendix: Programme Learning Outcomes and Curricula

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Food Technology:

Attitude, Knowledge and Generic Skills:

1. Upholding humanity while respecting social norms, cultural diversity, views of life opinions, religions and beliefs.
2. The ability to think logically, critically, systematically, and innovatively to solve problems.
3. The ability to work independently and communicate proficiently, both orally and written to express ideas for teamwork, and the ability to adapt do rapidly advancing Information Technology.
4. Possessing sufficient knowledge in Food Sanitation and Safety Management, Food Quality Assurance, and keeping up to date with the latest food issues.

Specific Skills:

5. The ability to analyse the chemical properties of food, perform sensory evaluations of food, explain, and control the main chemical events that underlie the nature of food, and apply statistical rules and computer skills in food science and technology.
6. The ability to identify and analyse pathogenic and spoilage microbes in food, inactivate the microbes based on relevant environmental factors, and preserve food using fermentation.
7. The ability to control damage to food ingredients and/or process them into products and then package them with appropriate materials and methods, and handle waste from food processing.
8. The ability to explain food biochemical processes, digestion and metabolism, and the relationship between food consumption and nutritional and health status, and able to evaluate the biological value of food.

The following **curriculum** is presented:

COURSE LIST
AT FOOD TECHNOLOGY STUDY PROGRAMME DIPONEGORO UNIVERSITY
2017 CURRICULUM

	CODE	COURSES	Credits	Lect	Prac
SMT I					
1	UNW21-301	Religion	2	2	0
2	UNW21-302	Pancasila	2	2	0
3	UNW21-306	English	2	2	0
4	UNW21-303	Civic Education	2	2	0
5	PTP21-300P	Biology	3	2	1
6	PTP21-301P	Chemistry	3	2	1
7	PTP21-302	Physics	2	2	0
8	PAT21-301	Introduction of Agricultural Science	2	2	0
9	PTP21-303	Basic Technology of Agricultural Products	2	2	0
10	UNW21-305	Sports	1	0	1
		Total	**21**	**18**	**3**
SMT II					
11	PTP21-304	Mathematics	2	2	0
12	UNW21-310	Technical Information	2	2	0
13	PAB21-3030	Fundamentals of Management	2	2	0
14	PAB21-301	General Economics	2	2	0
15	PTP21-305P	Microbiology	3	2	1
16	PTP21-306P	Biochemistry	3	2	1
17	PTP21-307P	Postharvest Physiology and Technology	3	2	1
18	PTP21-308	Food Knowledge	2	2	0
19	PTP21-309	Basic Socio-Cultural Science	2	2	0
20	UNW21-304	Indonesian	2	2	0
		Total	**23**	**20**	**3**
SMT III					
21	UNW21-309P	Statistics	3	2	1
22	PTP21-301P	Applied Computers	2	1	1
23	PTP21-311P	Laboratory Technique	2	1	1
24	PTP21-312P	Food Analysis	3	2	1
25	PTP21-313P	Food Microbiology	3	2	1
26	PTP21-314	Food Preservation Technology	2	2	0
27	PTP21-315	Food Additives	2	2	0
28	PTP21-316	Processing Technique Principle	2	2	0
29	PTP21-317	Processing Machinery and Equipment	2	2	0
		Elective Course (2 Credits)			
30	PTP21-318	Food Lipid Technology	2	2	0
31	PTP21-319	Tuber Technology	2	2	0
		Total	**23**	**18**	**5**
SMT IV					
32	PTP21-320	Functional Foods	2	2	0
33	PTP21-321	Company Hygiene and Work Safety	2	2	0
34	PTP21-322P	Food Chemistry and Nutrition	3	2	1
35	PTP21-323P	Food Biotechnology	4	3	1

36	PTP21-324P	Food Packaging Technology	3	2	1
37	PTP21-325P	Food Techniques	4	3	1
38	PTP21-326P	Food Quality and Safety	3	2	1
		Elective Courses (2 Credits)			
39	PTP21-327	Legume and Sereal Technology	2	2	0
40	PTP21-328	Essential Oil and Spices Technology	2	2	0
		Total	**23**	**18**	**5**
SEM V					
41	PTP21-400	Research Methodology and Experimental Design	3	3	0
42	PTP21-401P	Sensory Analysis	3	2	1
43	PAB21-403	Counseling	3	2	1
44	PTP21-402	Product Development	2	2	0
45	UNW21-307	Entrepreneurship	2	1	1
46	PTP21-403P	Waste Treatment Technology	3	2	1
		Elective Courses (8 Credits)			
47	PTP21-404P	Meat Science and Technology	3	2	1
48	PTP21-405P	Milk Science and Technology	3	2	1
49	PTP21-406P	Egg Science and Technology	3	2	1
50	PTP21-407P	Fish Processing Technology	3	2	1
51	PTP21-408	Plantation Technology	2	2	0
52	PTP21-409	Horticulture Processing Technology	2	2	0
53	PTP21-410	Food Policy	2	2	0
		Total	**24**	**18**	**6**
SEM VI					
54	PTP21-411P	Food Industry Design	3	2	1
55	PTP21-412P	Cake and Bread Technology	2	1	1
56	PAT21-412	Organic Agriculture	3	2	1
		Elective Course (8 Credits)			
57	PTP21-413P	Catering Industry	2	2	0
58	PTP21-414P	Animal Food By-product Technology	3	2	1
59	PAB21-422	Food Security	3	2	1
60	PAB21-314	Marketing Management	2	2	0
61	PAB21-402	Feasibility Study and Evaluation of Agricultural Projects	3	2	1
62	PTP21-415	Food Toxicology	2	2	0
63	PTP21-416	Halal Food Industry	2	2	0
		Final Assignments			
64	PTP21-417	Field Work Lectures	1	0	1
65	PTP21-501	Seminars	2	0	2
66	PTP21-502	Field Work Practice	2	0	2
		Total	**21**	**11**	**10**
SEM VII					
67	PTP21-503	Thesis	6	0	6
68	UNW21-408	Community Service Program	3	0	3
		Total	**9**	**0**	**9**
		Overall Total	**144**	**103**	**41**

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Animal Science:

Attitude

1. Being pious towards God Almighty and possessing the ability to demonstrate religious attitudes, uphold human values in carrying out task based on religion, uphold morals and ethics, and respect the diversity of cultures, views, religions, and beliefs of others.
2. Acting as a citizen who are proud of and love their homeland, having a sense of nationalism and a sense of responsibility towards the nation and state, and contributing to the improvement of the quality of life in society, the nation and state, and contributing to the improvement of the quality of life in society, the nation, the state, and the progress of civilization based on "Pancasila".

Generic Skills

3. The ability to apply logical, critical, innovative, quality, and measurable thinking in carrying out types of work in the livestock sector in accordance with work competency standards.
4. The ability to make appropriate decisions in the context of solving problems in the field of animal science based on the results of data and information analysis.
5. The ability to be responsible for the achievement of group work results as well as supervising and evaluating the completion of the work assigned to workers wo are their responsibility.

Specific Skills

6. The ability to apply livestock technology oriented towards increasing production, efficiency, quality, and sustainability based on livestock control which includes breeding, feeding, product processing, marketing management and implementing sustainable livestock production systems.
7. The ability to apply knowledge of the principles of leadership, communication, and management of livestock resources in the workplace.
8. The ability to plan, design, implement, and evaluate effective and efficient livestock production systems, both individually and in teams, with a multidisciplinary approach and an acceptance of the responsibility for the achievement of organizational work.

Knowledge

9. Mastery of effective and efficient animal science and technology, including breeding, feeding, handling, product and processing, implementing sustainable livestock production systems, processing and marketing management.
10. Mastery of general knowledge about the principles of leadership, communication, and management of livestock resources necessary for implementation in the workplace.
11. Mastery of the principles of solving science-based livestock problems with scientific methods.

The following **curriculum** is presented:

No.	Course Title	Code	Credits	
			In-class activity	Lab & field works
Semester 1				
1	Religion	UNW 00-001	2	0
2	“Pancasila”	UNW 00-002	2	0
3	Citizenship	UNW 00-003	2	0
4	Sports	UNW00-005	0	1
5	Physics	PFW21-004	2	0
6	English	UNW 00-006	2	0
7	Introduction to Agricultural Science	PFW21-001	2	0
8	Basic Chemistry	PFW21-002	2	1
9	Biology	PFW21-003	2	1
10	Statistics	PPT21-311	2	1
	Sub Total		18	4
Semester 2				
11	Indonesian Language	UNW00-004	2	0
12	Animal Nutrition	PPT21-321	2	1
13	Genetics	PPT21-324	2	0
14	Animal Physiology	PPT21-322	2	1

15	Forage Crop Production	PPT21-323	2	1
16	Basic Biochemistry	PFW21-005	2	1
17	Microbiology	PPT21-325	1	1
18	Animal Behavior	PPT21-327	2	0
19	Economics of Farm &Enterprises	PPT21- 326	2	0
	Sub Total		17	5
Semester 3				
20	Entrepreneurship	UNW 00-007	2	0
21	Feedstuff and Diet Formulation	PPT21- 431	2	1
22	Environmental Physiology of Livestock	PPT21-432	2	1
23	Animal Breeding	PPT21-434	2	1
24	Animal Reproduction	PPT21-433	2	1
25	Feed Processing Technology	PPT21-437	2	1
26	Animal Judging	PPT21-327	2	1
	Elective Courses		2	0
	Sub Total		16	6
Semester 4				
27	Poultry and Non-Ruminant Ration	PPT21-441	2	1
28	Ruminant Ration	PPT21-442	2	1
29	Animal Health	PPT21-445	1	1
30	Poultry Production	PPT21-551	2	1
31	Dairy Production	PPT21- 552	2	1
32	Draught and Meat Animal Production	PPT21-553	2	1
	Elective Courses of BAS Program		3	1
	Sub Total		14	7
Semester 5				
33	Layer Management (Semi - Block)	PPT21-562	2	2
34	Dairy Management (Semi- Block)	PPT21-563	2	2
35	Livestock Waste Management	PPT21-555	2	1

36	Feed Manifacturing	PPT21-446	1	1
37	Animal Biochemistry	PPT21-557	2	0
38	Policy and Livestock Development Planning	PPT21-557	2	0
	Elective Courses of BAS		3	1
	Sub Total		**14**	**7**
Semester 6				
39	Broiler Management (Semi- Block)	PPT21-561	2	2
40	Meat Animal Management (Semi- Block)	PPT21-564	2	2
41	Animal Slaughter Management	PPT21-556	1	1
42	Research Design	PPT21-554	2	1
43	Community Education and Empowerment	PPT21-444	2	1
44	Field Work Lecture	PPT21-566	0	1
	Elective Courses of BAS Program		2	0
	Sub Total		**11**	**8**
Semester 7				
45	Student Community Engagement	UNW 00-008	0	3
46	Field Work Practices	PPT21-565	0	2
47	Seminar	PPT21-571	0	2
48	Bachelor Thesis	PPT21-572	0	6
	Sub Total		**0**	**13**
	Elective Courses of BAS			
1	Livestock Breeding Management	PPT21-341	1	1
2	Assorted Poultry Husbandry	PPT21-372	2	0
3	Lactation Management	PPT21-377	2	0
4	Reproduction Biotechnology	PPT21-342	2	0

5	Ruminology	PPT21-351	1	1
6	Standards and Control of Feed Quality	PPT21-352	2	1
7	Feed Chemistry and Toxicology	PPT21-375	1	1
8	Non Parametric Statistics	PPT21-354	1	1
9	Veterinary Public Health	PPT21-357	2	1
10	Hatchery Management	PPT21-371	1	1
11	Assorted Dairy Husbandry	PPT21-372	1	1
12	Novel Animal Husbandry	PPT21-343	2	0
13	Ranch Management	PPT21-373	2	1
14	Feedlot Management	PPT21-374	2	1
15	Assorted Livestock and Laboratory Animals Husbandry	PPT21-358	1	1
16	Fertility and Sterility	PPT21-359	2	0
17	Feed Biotechnology	PPT21-344	2	0
18	Cooperative	PPT21-376	2	0
19	Livestock and Livestock Products Trading	PPT21-375	2	0
20	Non-Forage Feed Production	PPT21-345	2	0
21	Public Communication	PPT21-331	1	1
22	English Writing	PPT21-332	1	1
23	English Speaking	PPT21-333	1	1
24	Software Application	PPT21-334	1	1
25	Internet Skill	PPT21-335	1	1
	Elective Courses of BAS		**38**	**16**

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Agribusiness:

Attitude

1. Upholding human values when carrying out tasks based on religion, morals, and ethics, and contributing to the improvement of the quality of community life.

Knowledge

2. Mastery of special knowledge covering management, economics (micro, macro, and development), entrepreneurship and agribusiness communication and knowledge of technical aspects of agriculture from upstream to down-stream such that agricultural business can be conducted professionally.
3. Mastery of general knowledge about the concepts of crop production and the concpts of efficiency, feasibility, communication, and entrepreneurship such that strategic and operational decisions can be made, and problems can be solved in a sustainable manner in the field of agribusiness.

Generic skills

4. The ability to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology, with attention to the application of humanities values in accordance with field of expertise.
5. The ability to work independently and cooperatively in multidisciplinary teams and have commitment to completing all assigned tasks.
6. The ability to examine the implications of the development and implementation of science and technology with attention to the application of humanities values according to area of expertise. The examination of the implications should also be based on scientific rules, procedures, and ethics in order to produce solutions, ideas, designs or art criticism, and a scientific description that compiles the results of their studies in the form of a thesis or final proect report that is later uploaded.
7. The ability to evaluate a work group under one´s responsibility and to manage independent learning.

Specific skills

8. The ability to conduct agricultural business professionally, using the concepts of sustainable agriculture, through performing quantitative and qualitative analyses and being able to use these results in agricultural business design and operations in tropical farming systems to anticipate local and global challenges.
9. The ability to manage agricultural business units ranging from the farm scale to enterprise (company) scale based on local wisdom and global insights.
10. The ability to identify and analyse problems, potential and prospects as well as recommend alternative decision-making in the field of agribusiness using quantitative and qualitative methods.
11. The ability to design and operate the development of business unites and agribusiness networks that are innovative, give added value and are environmentally friendly.

The following **curriculum** is presented:

No	Course Title	Credits		ECTS*
		In-class activity	Lab & field works	
				1st Semester
1	Indonesian	2	0	3,20
2	Sports	1	0	1,60
3	Statistics	3	0	4,80
4	Introduction of Agricultural Science	2	0	3,20
5	Biology	2	1	4,80
6	Chemistry	2	1	4,80
7	Physics	2	0	3,20
8	Introduction to Economics	2	0	3,20
9	Introduction of Agribusiness	2	0	3,20
10	Basic of management	2	0	3,20
				2nd Semester
11	Religion	2	0	3,20
12	Civic	2	0	3,20
13	English	2	0	3,20
14	Entrepreunership	2	0	3,20
15	Technical Information	1	1	3,20
16	Sociology	2	0	3,20
17	Micro Economic	2	0	3,20
18	Economics of Agricultural Development	2	0	3,20
19	Basic of Agricultural Technology	2	0	3,20
20	Soil Science	3	0	4,80
				3rd Semester (2 credits of electives)
21	Citizenship	2	0	3,20

22	Agricultural Development Planning	2	0	3,20
23	Macro Economics	2	0	3,20
24	Farm Enterprise	2	1	4,80
25	Communication and Business Ethics	2	0	3,20
26	Climatology	2	0	3,20
27	Cultivation of Food Crops	2	1	4,80
28	Cultivation of Estate Crops	2	1	4,80
29	Poultry production	2	1	4,80
30	Food Security (elective)	2	0	3,20
		4th Semester (2 credits of electives)		
31	Applied English	2	0	3,20
32	Research Methodology	2	1	4,80
33	Agricultural Enterprise Economics	2	1	4,80
34	Marketing Management	2	1	4,80
35	Management of Financial Agribusiness	2	1	4,80
36	Organic Agriculture	2	1	4,80
37	Livestock Production	2	1	4,80
38	Dairy Production	2	1	4,80
		5th Semester (6 credits of electives)		
39	Human Resources Management	2	0	3,20
40	Feasibility Study and Project Evaluation	2	1	4,80
41	Agriculture Extension	2	1	4,80
42	Quantitative Method	2	1	4,80
43	Cooperation	1	1	3,20
44	Production Economics	2	1	4,80
45	Group Dinamics	2	1	4,80
46	Community Empowerment	2	0	3,20
47	Risk Management	2	0	3,02
48	International Trade (elective)	2	0	3,02
49	Consumers Behaviour (elective)	2	0	3,02
50	Management of Small and Medium Enterp	2	0	3,02
51	Managerial Economics (elective)	2	0	3,02
		6th Semester (6 credits of electives)		
52	Applied Journalistic	2	0	3,20
53	Marketing Research	2	0	3,20
54	Applied Computer	2	0	3,20
55	Integrated Farming System	2	0	3,20
56	Field Practice Course (KKN)	0	2	3,20
57	Field Work Course (KKL)	0	1	1,60
58	Seminar	2	0	3,20
59	Student Community Engagement	0	3	4,80
60	Qualitative Research (elective)	2	0	3,20
61	Accounting (elective)	2	0	3,20
62	Agriculture Institution (elective)	2	0	3,20
				7th Semester
63	Bachelor Thesis	0	6	9,60

				8th Semester
	Bachelor Thesis			

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Aquaculture:

General and social skills

1. Graduates who are able to apply logical and critical thinking in the development and application of aquaculture science and technology.
2. Graduates who are responsible, disciplined, obey the law as citizens, internalize academic norms and display ethics when carrying out their profession and advancing their careers.
3. Graduates who internalize the spirit of independence, perseverance, entrepreneurship, teamwork, and social sensitivity when practicing and solving problems in the field of aquaculture.
4. Graduates who are able to communicate with all involved parties (supervisors, peers and colleagues both internal and external to the institutions), apply technology and IoT to communicate, advance their knowledge, and solve problems in aquaculture and related fields.

Specific Skills and Knowledge in Aquaculture

5. Graduates who possess the knowledge and skills needed in aquaculture production and development and who are able to use these skills to make decisions and address the challenges that arise in various types of aquaculture. Skills and knowledge gained include commercial commodity aquaculture, artificial feed formulation, natural feed cultivation, disease diagnoses and disease control, fish health management, developing sustainable aquaculture systems and technologies, seed production, water quality management, aquaculture spatial planning, aquaculture business and entrepreneurship.
6. Graduates who understand the concepts, advantages, and constraints in applying and developing the principles of good aquaculture practices and resource utilization to achieve targeted production in aquaculture.
7. Graduates who are prepared to design and conduct experiments, analyse data, communicate findings, and transfer science and technology to society at large.

8. Graduates who are able to inspire the community to develop aquaculture entrepreneurship, promote environmental conservation, and conduct good aquaculture practices.

Knowledge

9. Graduates who know and understand science and technology in the field of aquaculture, fisheries in general, including the latest findings and innovations, interactions with fisheries and marine related fields, and information technology (IT)-based aquaculture.

The following **curriculum** is presented:

BAq Courses Title	**BAq course information**			
Mandatory Courses	Course Code	Semester	Credit hour	ECTS
Biology	IPK21-005	1	3	4,53
Pancasila	UNW00-002	1	2	3,02
Basics of fisheries and marine science	IPK21-301	1	3	4,53
Biochemistry	IBP21-300	1	3	4,53
Religion	UNW00-001	1	2	3,02
Civics	UNW00-007	1	2	3,02
Indonesian (Bahasa)	UNW00-004	1	2	3,02
English	UNW00-006	1	2	3,02
Physical education	UNW00-005	1	1	1,51
Basics of fish processing technology	IHP21-304	2	2	3,02
Basics of Catch Fisheries Management	IPP21-303	2	2	3,02
Aquatic ecology	IPK21-004	2	3	4,53
Basics of aquaculture	IBP21-301	2	2	3,02
Ichthyology	IPK21-006	2	3	4,53
Physics and chemistry of aquatic environment	IBP21-302	2	3	4,53
Introduction to economics	IPK21-002	2	2	3,02
Statistics	IBP21-303	2	2	3,02
Sociology of coastal community	IPK21-003	2	2	3,02
Aquaculture engineering	IBP 21-304	3	3	4,53
Water quality management	IBP21-305	3	3	4,53
Fish reproduction physiology	IBP21-306	3	3	4,53
Fish histology	IBP21-307	3	3	4,53
Basics of aquatic microbiology	IBP21-308	3	3	4,53
Fish nutrition	IBP21-309	3	3	4,53
Information technology	IBP21-310	3	2	3,02
Management of aquaculture environment	IBP21-311	4	3	4,53

Fish hatchery technology	IBP21-312	4	3	4,53
Basics of fish genetics	IBP21-313	4	3	4,53
Fish parasites and diseases	IBP21-314	4	3	4,53
Natural feed culture	IBP21-315	4	3	4,53
Law and regulation in fisheries	IBP21-316	4	2	3,02
Experimental design	IBP21-317	4	3	4,53
Freshwater aquaculture management	IBP21-318	5	3	4,53
Brackishwater aquaculture management	IBP21-319	5	3	4,53
Mariculture management	IBP21-320	5	3	4,53
Fish health management	IBP21-321	5	3	4,53
Fish feeding technology and management	IBP21-322	5	3	4,53
Ornamental fish aquaculture management and aquascape	IBP21-323	5	3	4,53
Entrepreneurship	UNW00-007	5	2	3,02
Principles of aquaculture biotechnology	IBP21-324	6	3	4,53
Aquaculture business	IBP21-325	6	3	4,53
Coastal aquaculture industry	IBP21-326	6	3	4,53
Scientific methods	IBP21-327	6	3	4,53
Elective course	_	6	3	4,53
Elective course	_	6	3	4,53
Aquaculture Field Work	IBP21-328	6	3	4,53
Introduction and domestication of potential fish	IBP21-329	7	3	4,53
Community service	UNW00-008	7	3	4,53
Elective course	_	7	3	4,53
Elective course	_	7	3	4,53

Extension service Program	IBP21-330	7	3	4,53
Seminar	IBP21-343	8	2	3,02
Bachelor degree thesis	IBP21-344	8	6	9.06
Elective Courses				
Seed production management	IBP21-331	6 to 8	3	4,53
Intensification and mass production of natural feed	IBP21-332	6 to 8	3	4,53
Nutrition physiology of cultivation organisms	IBP21-333	6 to 8	3	4,53
Fish feed technology	IBP21-334	6 to 8	3	4,53
Aquaculture Environment management	IBP21-335	6 to 8	3	4,53
Geographic information system of aquaculture	IBP21-336	6 to 8	3	4,53
Management of aquaculture products	IBP21-337	6 to 8	3	4,53
Development of aquaculture industry	IBP21-338	6 to 8	3	4,53
Non-Finfish farming	IBP21-339	6 to 8	3	4,53
Finfish farming	IBP21-340	6 to 8	3	4,53
Fish Quarantine	IBP21-341	6 to 8	3	4,53
Aquaculture engineering	IBP21-342	6 to 8	3	4,53