



AGENTUR FÜR
QUALITÄTSSICHERUNG DURCH
AKKREDITIERUNG VON
STUDIENGÄNGEN E.V.

FINAL REPORT

UNIVERSITAS BRAWIJAYA

CLUSTER AGRICULTURE

AGRIBUSINESS (BACHELOR OF AGRICULTURE)

AGROECOTECHNOLOGY (BACHELOR OF AGRICULTURE)

SOIL AND WATER MANAGEMENT (MASTER OF AGRICULTURE)

AGRICULTURAL ENTOMOLOGY (MASTER OF AGRICULTURE)

PLANT PATHOLOGY (MASTER OF AGRICULTURE)

August 2023



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DECISION OF THE AQAS STANDING COMMISSION ON THE STUDY PROGRAMMES

- **AGRIBUSINESS (BACHELOR OF AGRICULTURE)**
 - **AGROECOTECHNOLOGY (BACHELOR OF AGRICULTURE)**
 - **SOIL AND WATER MANAGEMENT (MASTER OF AGRICULTURE)**
 - **AGRICULTURAL ENTOMOLOGY (MASTER OF AGRICULTURE)**
 - **PLANT PATHOLOGY (MASTER OF AGRICULTURE)**
- OFFERED BY UNIVERSITAS BRAWIJAYA, MALANG, INDONESIA**

Based on the report of the expert panel, the comments by the university and the discussions of the AQAS Standing Commission in its 18th meeting on 21 August 2023, the AQAS Standing Commission decides:

1. The study programmes “**Agribusiness**” (Bachelor of Agriculture), “**Agroecotechnology**” (Bachelor of Agriculture), “**Soil and Water Management**” (Master of Agriculture), “**Agricultural Entomology**” (Master of Agriculture) and “**Plant Pathology**” (Master of Agriculture) offered by **Universitas Brawijaya, Indonesia** are accredited according to the AQAS Criteria for Programme Accreditation (Bachelor/Master).

The accreditations are conditional.

The study programmes essentially comply with the requirements defined by the criteria and thus the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and the European Qualifications Framework (EQF) in their current version. The required adjustments can be implemented within a time period of twelve months.

2. The conditions have to be fulfilled. The fulfilment of the conditions has to be documented and reported to AQAS no later than **30 September 2024**. The confirmation of the conditions might include a physical site visit within the time period of twelve months.
3. The accreditation is given for the period of **six years** and is valid until **30 September 2029**.

Conditions:

For all study programmes:

1. The programme learning outcomes, intended learning outcomes and course learning outcomes of all programmes must be better aligned with each other. In the process, the faculty must ensure that the learning outcomes are
 - a. subject-specific,
 - b. related to the course programme, core competencies and core skills of each study programme,
 - c. clear and comprehensive, and
 - d. properly aligned with the different levels of competencies (e.g. by using Bloom’s taxonomy to show the development of higher order thinking skills according to the cognitive, affective and psychomotor domains).

2. The assessment forms must be properly aligned with the intended learning outcomes.

Additionally for the study programme “Agribusiness”:

3. The course descriptions must be improved by including additional information on the contents of each course.

Additionally for the study programme “Agroecotechnology”:

4. The curriculum must include at least one basic course in farm animal biology and husbandry to ensure international comparability.

Additionally for the study programme “Soil and Water Management”:

5. The curriculum must include a general compulsory course on engineering-related hydrology.

Additionally for the study programme “Agricultural Entomology”:

6. When revising the programme and intended learning outcomes (Condition 1), it must be ensured that learning outcomes are

- a. concise, measurable and quantifiable, and
- b. better reflect the competences defined at level 8 of the Indonesian Qualifications Framework (IQF) and level 7 of the European Qualification Framework (EQF) respectively.

7. The course descriptions must be improved. In addition to the points mentioned in Condition 1 and 2,

- a. the contents and topics of each course must be described concisely,
- b. the level of detail regarding the course learning outcomes (i.a. subcategories, ranking) must be consistent, and
- c. the references and literature recommendations must be updated.

8. The programme must include content on current threats resulting from climate change and biodiversity loss – either within new courses or by making the contents explicit in the current course descriptions of relevant courses.

Additionally for the study programme “Plant Pathology”:

9. The curriculum must include more state-of-the-art topics and methods, e.g. in molecular biology, molecular diagnosis, and chemical analytics.

10. The references and literature recommendations indicated in the course descriptions must be updated.

The following **recommendations** are given for further improvement of the programmes:

For all study programmes:

1. Cooperation and exchanges with other faculties and between departments should be intensified.
2. Measures should be taken to raise international student (and staff) mobility.
3. The use of English in teaching and learning should be increased, e.g. through incentives to write the thesis in English, courses on scientific English, and/or English-taught courses.
4. The follow-up process of quality assurance should be improved.
5. The design of the tracer studies should be improved to gather more feedback for curriculum improvement; emphasis should be put on a matching analysis of diverse job placements and potential gaps between the curriculum and labour market requirements.

6. Questions/tasks that correspond to higher levels of the taxonomy should be included in every exam; exam questions/tasks should generally reflect the three domains of learning (i.e. cognitive, affective and psychomotor).
7. Teaching staff should be encouraged to openly discuss grade distribution and strive to use a broader range of grades.
8. The faculty should ensure that maintenance funding is made available to secure continuous improvement for the facilities.
9. The university should publish an overarching informative document for each study programme, e.g. a course handbook, with concise, consistent, and up-to-date information on the intended learning outcomes, curriculum, academic regulations, teaching, learning and assessment procedures.

Additionally for the study programme “Agribusiness”:

10. Every course should include learning objectives at the level of application, analysis and synthesis/judgment.
11. The references and literature recommendations indicated in the course descriptions should be updated.

Additionally for the study programme “Agroecotechnology”:

12. Propaedeutic courses in mathematics, physics, chemistry, and zoology should be offered.
13. The makeup of the curriculum should be improved:
 - a. the order of courses should be rearranged to enhance the gradual didactic acquisition of knowledge,
 - b. basic courses should focus on the compulsory parts of the curriculum and courses with a higher degree of specialisation should be offered as electives.

Additionally for the study programme “Soil and Water Management”:

14. The curriculum should deal with irrigation, rice field water management, wastewater management – either within a new course or by making the contents explicit in the current course descriptions of relevant courses.
15. The curriculum should offer additional electives on hydrology topics and on forestry-related topics.

Additionally for the study programme “Plant Pathology”:

16. Courses should include more practical work elements.
17. The idealised typical course plan should be corrected and improved.

With regard to the reasons for this decision the Standing Commission refers to the attached experts' report.

EXPERTS' REPORT**ON THE STUDY PROGRAMMES**

- **AGRIBUSINESS (BACHELOR OF AGRICULTURE)**
- **AGROECOTECHNOLOGY (BACHELOR OF AGRICULTURE)**
- **SOIL AND WATER MANAGEMENT (MASTER OF AGRICULTURE)**
- **AGRICULTURAL ENTOMOLOGY (MASTER OF AGRICULTURE)**
- **PLANT PATHOLOGY (MASTER OF AGRICULTURE)**

OFFERED BY UNIVERSITAS BRAWIJAYA, MALANG, INDONESIA

Visit to the university: 8-11 May 2023

Panel of experts:

Prof. Dr. Dietrich Darr	Rhine-Waal University of Applied Sciences, Faculty of Life Sciences (Germany)
Prof. Dr. Karl-Heinz Feger	Technical University Dresden, Faculty of Environmental Sciences, Institute of Soil Science and Site Ecology (Germany)
Prof. Dr. Florian Grundler	University Bonn, INRES Molecular Phytomedicine (Germany)
Assoc. Prof. Dr. Alvin Hee Kah Wei	Universiti Putra Malaysia, Faculty of Science, Department of Biology (Malaysia)
Dr. Victor Afari-Sefa	International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Global Research Program – Ena- bling Systems Transformation, Hyderabad (India) (representative of the labour market)
Gary Strauß	Student of the Ruhr-University Bochum and University Duisburg-Essen (Germany) (student representative)
Coordinator: Alexandre Wipf	AQAS, Cologne, Germany

I. Preamble

AQAS – Agency for Quality Assurance through Accreditation of Study Programmes – is an independent non-profit organisation supported by more than 90 universities, universities of applied sciences and academic associations. Since 2002, the agency has been recognised by the German Accreditation Council (GAC). It is, therefore, a notified body for the accreditation of higher education institutions and programmes in Germany.

AQAS is a full member of ENQA and is also listed in the European Quality Assurance Register for Higher Education (EQAR) which confirms that our procedures comply with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), which all Bologna countries have agreed on as their basis for internal and external quality assurance.

AQAS is an institution founded by and working for higher education institutions and academic associations. The agency is devoted to quality assurance and quality development of academic studies and higher education institutions' teaching. In line with AQAS' mission statement, the official bodies in Germany and Europe (GAC and EQAR) approved that the activities of AQAS in accreditation are neither limited to specific academic disciplines or degrees nor a particular type of higher education institution.

II. Accreditation procedure

This report is the result of the external review of the study programmes “Agribusiness” (Bachelor of Agriculture), “Agroecotechnology” (Bachelor of Agriculture), “Soil and Water Management” (Master of Agriculture), “Agricultural Entomology” (Master of Agriculture) and “Plant Pathology” (Master of Agriculture) offered by Universitas Brawijaya, Malang, Indonesia.

1. Criteria

Each programme is assessed against a set of criteria for accreditation developed by AQAS: the AQAS Criteria for Programme Accreditation (Bachelor/Master). The criteria are based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) 2015. To facilitate the review each criterion features a set of indicators that can be used to demonstrate the fulfilment of the criteria. However, if single indicators are not fulfilled this does not automatically mean that a criterion is not met. The indicators need to be discussed in the context of each programme since not all indicators can necessarily be applied to every programme.

2. Approach and methodology

Initialisation

The university mandated AQAS to undertake the accreditation procedure in April 2021. The university produced a Self-Evaluation Report (SER). In December 2021, the institution handed in a draft of the SER together with the relevant documentation on the programmes and an appendix. The appendix included e.g.:

- an overview over statistical data of the student body (e.g. number of applications, beginners, students, graduates, student dropouts),
- the CVs of the teaching staff/supervisors,
- information on student services,
- core information on the main library, as well as
- academic regulations.

AQAS checked the SER regarding completeness, comprehensibility, and transparency. The accreditation procedure was officially initialised by a decision of the AQAS Standing Commission on 16 May 2022. The final version of the SER was handed in by the university in February 2023.

Nomination of the expert panel

The composition of the panel of experts follows the stakeholder principle. Consequently, representatives from the respective disciplines, the labour market, and students are involved. Furthermore, AQAS follows the principles for the selection of experts defined by the European Consortium for Accreditation (ECA). The Standing Commission nominated the aforementioned expert panel in February 2023. AQAS informed the university about the members of the expert panel and the university did not raise any concerns against the composition of the panel.

Preparation of the site visit

Prior to the site visit, the experts reviewed the SER and submitted a short preliminary statement including open questions and the potential need for additional information. AQAS forwarded these preliminary statements to the university and to all panel members in order to increase transparency in the process and the upcoming discussions during the site visit.

Site visit

After a review of the SER, a site visit to the university took place between 8 and 11 May 2023. On site, the experts interviewed different stakeholders, e.g. the management of the higher education institution, the programme management, teaching and other staff, as well as students and graduates, in separate discussion rounds and consulted additional documentation as well as student work. The visit concluded by the presentation of the preliminary findings of the group of experts to the university's representatives.

Reporting

After the site visit had taken place, the expert group drafted the following report, assessing the fulfilment of the AQAS Criteria. The report included a recommendation to the AQAS Standing Commission. The report was sent to the university for comments.

Decision

The report, together with the comments of the university, forms the basis for the AQAS Standing Commission to take a decision regarding the accreditation of the programmes. Based on these two documents, the AQAS Standing Commission took its decision on the accreditation on 21 August 2023. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed conditions.

In September 2023, AQAS published the report and the result of the accreditation as well as the names of the panel of experts.

III. General information on the university

Universitas Brawijaya (UB) is a public university located in Malang, East Java, Indonesia. It was founded in 1963. It has three campuses, 15 faculties and one Postgraduate School and offers 177 study programmes (Diploma programmes, vocational programmes, Bachelor's, Master's and PhD programmes) to approximately 71,900 active students in the academic year 2021/22. UB employs close to 2,100 lecturers and about 1,900 education staff.

The university purses a *Tridharma* approach, where higher education, research and community service are interlaced. It has defined its vision and mission at institutional (university) level, as well as at faculty level. Its vision is to be a pioneering and innovative university with an international reputation for science and technology advancements that form the basis of culture-based industries for community's welfare. The university has developed a Strategic Plan for the period 2020-2024 aiming at contributing to its vision and mission. Specific goals and performance targets have been defined in the areas of government, innovation, reputation, alumni, faculty, funding, and efficiency. At faculty level, individual strategic plans are based on and refer to UB's overall Strategic Plan. Additionally, there is a Research Master Plan for the whole university, considering the direction of national research policies and serving as a basis for the research roadmaps of the different faculties and of individual staff.

The Faculty of Agriculture is made up of five departments offering a total of eleven study programmes including the five programmes considered for this accreditation process. Currently, more than 5,600 students are enrolled at the faculty. The faculty aims at becoming a development centre of tropical sustainable agriculture; according to information provided in the self-evaluation report, the curricula at the faculty focus on sustainability.

IV. Assessment of the study programmes

1. Quality of the curriculum

Bachelor's/Master's degree

The intended learning outcomes of the programme are defined and available in published form. They reflect both academic and labour-market requirements and are up-to-date with relation to the relevant field. The design of the programme supports achievement of the intended learning outcomes.

The academic level of graduates corresponds to the requirements of the appropriate level of the European Qualifications Framework.

The curriculum's design is readily available and transparently formulated.

[ESG 1.2]

Overarching information

One academic year at UB consists of 16 weeks including 14 lectures/meetings, one mid-term and one final examination. Student and staff workload is assessed based on the SKS credit system, whereby 1 SKS amounts to 170 minutes of face-to-face meetings, self-study and structured assignments for students. For conversion purposes the faculty indicates that 1 SKS corresponds to 1.59 ECTS.

According to information in the self-evaluation report, the curricula were developed considering national regulations including the Indonesian National Qualifications Framework (KKNI), at level 6 for the Bachelor's programmes and at level 8 for the Master's programmes; these corresponding to level 6 and level 7 of the European Qualification Framework (EQF). Based on this general framework the programme leaders define

graduate profiles, programme learning objectives as well as intended learning outcomes and course learning outcomes. The learning outcomes are formulated in the areas of attitude, generic skills, knowledge, and specific skills. UB states that when developing and updating the learning outcomes and curricula it also considers feedback from the labour market, developments in the academic field, suggestions by scientific associations and all stakeholders including students, feedback gathered through national and international evaluation. According to information in the self-evaluation report curriculum, an evaluation takes place annually and an overall review is scheduled every four years by the faculty's Curriculum Committee. The latest annual curriculum reviews focussed on the implementation of Outcome-Based Education (OBE), on the impact of the 4th industrial revolution, and on the implementation of OBE in the context of the national Freedom to Learn/Independent Campus (MBKM) policy. As part of the national Freedom to Learn scheme Bachelor students can take courses outside of their core study programme, complete internships or study abroad for up to 20 credits.

Overarching evaluation

The overall structure of the study programmes and curricula are based on the OBE approach mandated by the ministry in charge of higher education. The faculty and departments have defined graduate profiles as well as the programme learning outcomes, intended learning outcomes and course learning outcomes with stakeholder input.

During the site visit, the university and faculty underscored their different cooperative collaborative engagements with the labour market and stakeholders, especially with diverse scientific/scholarly societies (in which several lecturers are actively involved) and specific public sector/governmental offices (which are employing the graduates, e.g. related to phytosanitary, quarantine and entry requirements for plant products) and shared some key details with the panel of experts. These contacts are pivotal for the definition of the graduate profiles.

This overall framework is logical and corresponds well to the OBE approach. Yet there are some areas that were noted for further improvement. The strong relationship with a special selection of stakeholders is commendable as this ensures that the programmes must be up-to-date to remain relevant to the needs of the stakeholders. However, constant engagement and a proactive approach involving curricula experts and a broader range of stakeholders needs to be undertaken such that the content and profiles of the different programmes will be regularly up-to-dated, as will be argued for different curricula underneath.

On a more conceptual level the experts conclude, after extensive consideration and review of the evidence provided during the site visit, that the learning outcomes themselves are not optimally formulated. The alignment of the different levels is not always clearly specified (i.e. graduate profiles, programme level, course level), their wording is at times suboptimal and remains generic, their alignment to the proper competencies, e.g. according to Bloom's taxonomy, is limited, as a result the link between assessment form and learning outcomes is also not consistently articulated. The programme learning outcomes, intended learning outcomes and course learning outcomes of all programmes must therefore be better aligned to each other. In the process the faculty must ensure that the learning outcomes are subject-specific and related to the core competencies of each study programme, are clear, comprehensive and properly aligned with the different levels of competencies (i.e. taxonomy, using higher order thinking skills). The assessment forms must also be properly aligned to the learning outcomes (**Finding 1**). Through these changes, the quality of teaching and learning is expected to improve tremendously.

In discussing the context of the study programmes the experts also considered the specificities of agricultural study programmes in Indonesia and the development of this field in higher education. Historically, there appears to be a separation between different fields of the overall agricultural sector with different faculties concentrating on crops, livestock, fisheries sciences, agricultural engineering etc. This structure is also present at Universitas Brawijaya with the Faculty of Agriculture with a focus on crop sciences. This, however, leads to missed opportunities, as the agricultural system should be considered in its entirety with linkages among the

various sub-sectors. The experts therefore recommend intensifying cooperation and exchange with other faculties (esp. Faculty of Animal Science, Faculty of Fisheries, Faculty of Agricultural Technology) and between departments (**Finding 2**). This could be achieved by pursuing common courses, common thesis reviews, joint research work or community activities. Additional interdisciplinary work and exchange would also benefit the students and prepare them even better for the labour market.

Due to the focus on the needs of the Indonesian labour market as specified above, the international exposure within the different curricula remains limited. The university leadership, faculty leadership and lecturers strive for and support international engagement and cooperation. This could still be improved upon in the future (see also Chapter 4). In order to support a higher degree of internationalisation, the experts recommend increasing the use of English in teaching and learning, e.g. through incentives to write the thesis in English, courses on scientific English, English-taught courses (**Finding 3**).

Study programmes

Agribusiness (Bachelor)

Description

The Bachelor's programme "Agribusiness" covers eight semesters and 144 SKS. The yearly intake is set at 400 students; there are over 1,500 active students in the study programme. Upon graduation students are awarded with a Bachelor of Agriculture, or SP.

UB states that the curriculum is composed and reviewed by considering the needs and recommendations of various stakeholders, including private sector companies and alumni as well as recommendations by the Indonesian Society of Agricultural Economics and the Agribusiness Association of Indonesia.

The main goal of the programme is to equip students with the necessary skills to become corporate managers, entrepreneurs, policy consultants, and ethical researchers, are knowledgeable and global-future-oriented, and adopt agribusiness model practices in a holistic fashion to create sustainable tropical farming systems. The programme leaders have set four programme learning objectives and seven intended learning outcomes. Accordingly, the students should, among others, be proficient in demonstrating ethical attitude, be responsible and independent, have entrepreneurial passion and a sense of social concern for society and the environment. They should be able to demonstrate good skills in evaluating and publishing the implementation of science and technology to create ideas and designs in the area of sustainable agribusiness. Students should further understand the concepts of agribusiness, economic policy, communication, community empowerment, and sustainable tropical farming technology, and be proficient in decision-making to develop sustainable tropical farming businesses based on digital literacy.

The curriculum is composed of 36 compulsory courses (107 credits, e.g. "Economic Mathematics", "Agricultural Ecology", "English", "Farm Management", "Marketing Management", "Production Economics"), elective courses (27 credits, a total of 28 courses worth 80 credits are offered, i.a. "Environmental Sociology", "Gender in Agricultural Development", "Econometrics"), a compulsory internship (four credits) as well as the final thesis (six credits). According to information in the self-evaluation report the curriculum contains 20 agribusiness scientific courses and eight supporting scientific courses; other courses are classified as so-called integrated-related courses. UB states that students can choose between a "regular path" and a "Freedom to Learn path". In the "regular path" students complete an industrial internship of two months, in the "Freedom to Learn path" the internship may be longer.

Experts' evaluation

As confirmed during the discussion with students and representatives of the labour market, the Bachelor's programme "Agribusiness" well addresses the needs of and professional competencies required in the sector. The curriculum clearly brings together an adequate set of subjects from the agricultural and natural sciences (e.g. Agricultural Ecology; Basics of Plant Production; Basics of Soil Science), from business and/or agricultural economics (e.g. Marketing Management; Agricultural Development Economics) and from rural sociology (Agribusiness Communication; Community Empowerment in Agribusiness), thereby equipping graduates with the necessary knowledge, skills and competencies for employment in the sector as per Bachelor level competencies.

The four Programme Learning Objectives (PLO) and seven Intended Learning Outcomes (ILO) describe the competencies and skills to be acquired by the future graduates for their professional careers in the described working fields. Upon the completion of the programme, the achievement of the ILO is to be demonstrated by a scientific thesis. However, PLO and ILO are not clearly enough formulated and need to be revised (see above, **Finding 1**). For example, ILO are mostly formulated at the level of understanding (ILO4), applying (ILO2) and demonstrating attitudes and skills (ILO1, ILO3), while higher-order competencies (e.g. analysis, synthesis) are not sufficiently considered. Moreover, aspects such as critical thinking skills, collaboration in and management of transdisciplinary networks (involving non-academic stakeholders), and transfer of knowledge and methods to unknown contexts should be strengthened in the PLO/ILO. Finally, it is not sufficiently clear in all cases how the operationalised CLO at the level of the individual course (e.g. CLO-14 of Introduction to Agribusiness Management: "Understand, apply, and make decisions [...] based on Artificial Intelligence, Internet of Things, Human-Machine Interface, Cyber-Physical System") contribute to the stated PLO/ILO.

According to the self-evaluation report, the curriculum and syllabus are regularly updated with input from key stakeholders such as alumni, students, and the private sector. This process ensures the continued relevance of the curriculum to the requirements of the labour market through regular updates.

The arrangement of courses in the curriculum includes introductory and general courses such as "Introduction to Agribusiness Management" in the first semesters, and increasingly specialised courses in the subsequent semesters/years including compulsory and elective modules. This supports the achievement of the learning outcomes and the learners' progression. The workload is correctly and transparently allocated to the different courses. An idealised typical course plan is available. This is appropriate.

The ILO are appropriately operationalised at the level of the individual course in learning outcomes and sub-learning outcomes in the Semester Course Plan. However, learning outcomes and sub-learning outcomes for a number of courses exclusively refer to the level of "knowing" and "understanding" (incl. "explaining"), such as for the following courses: "Introduction to Agribusiness Management", "Handling and Processing Technology for Agricultural Products" and others. It is recommended to consistently also include learning objectives at the level of application, analysis and synthesis/judgement in each course for a Bachelor's programme (**Finding 4**).

With regards to the use of generative AI (e.g. ChatGPT), academic teaching staff reported the use of AI scanners to prevent unauthorised use in examinations. Generally, it would be good to encourage teaching staff to experiment with more proactive ways of integrating this technology in their courses, e.g. by explicitly requesting students to use such tools, comparing the output generated for different prompts, and critically reflecting on the validity and quality of output generated. Further efforts could also be made to more strongly integrate courses and teaching contents related to the opportunities of digital technologies in the agribusiness sector, e.g. with regard to smart farming and Agriculture 4.0, digital tools (e.g. supply chain traceability) and business models (e.g. platform economy), big data analysis and AI applications.

The programme also offers a large variety of 28 elective courses ranging from “Economic Analysis and Agricultural Project Planning” to “Soilless Cultivation”. However, courses with a specific focus on animal production/sciences and agricultural technology are missing and should be strengthened to even better prepare graduates for the diversity of employment opportunities in the sector (**Finding 5**). Likewise, it is recommended to group the elective modules of a similar direction into “professional tracks” in order to give students more guidance with regard to specific competencies and qualifications required for the diversity of job profiles that the labour market requires, e.g. in horticultural versus other production enterprises, the food processing industry, or the retail sector (**Finding 6**).

The module descriptions aim to provide students with an overview of the learning contents and outcomes, as well as teaching and assessment methods, teaching staff and textbooks used. While some module descriptions enlist a very comprehensive set of contents that may sometimes even be too broad for a course of only 2-3 SKS (e.g. the course “Introduction to Agribusiness Management” enlists >30 topics, which – should they all be addressed in the course – cannot be covered in any meaningful level of depth, and hence should possibly be reduced), others are insufficiently detailed and only provide limited information about the teaching contents covered in the course, such as the course “Agricultural Ecology”. It is required to include further details regarding the study contents covered in these courses into the course descriptions to better enhance transparency on teaching subjects covered (**Finding 7**). Moreover, some of the literature sources cited for the individual course descriptions are rather old and should be updated (**Finding 8**).

For graduation, students are required to publish an academic paper in a national scientific journal. While the advancement of science that can be expected from these publications may be limited, students and labour market representatives expressed their satisfaction with this requirement, as this allows students to be trained in effectively communicating their ideas in writing. Moreover, students confirmed that they are supported through a gradual process of building academic reading and writing skills from their first semester onwards, which involves library introductions, assignments to read and summarise scientific publications, term papers, regular feedback from more experienced scientific writers, etc. Hence, they feel sufficiently prepared for this requirement. Moreover, students and labour market representatives expressed their satisfaction with the opportunities provided by the “Freedom to Learn” programme, which gives students a strong exposure to applied topics and potential future employers outside the academic sector and helps them to build relevant managerial and other competencies and skills.

Conclusion

The criterion is partially fulfilled.

Agroecotechnology (Bachelor)

Description

The Bachelor’s programme “Agroecotechnology” covers eight semesters and 144 SKS. The yearly intake at level 100 is set at 600 students and there are almost 2,600 active students in the study programme. Upon graduation students are awarded with a Bachelor of Agriculture, or SP.

According to information in the self-evaluation report, the study programme was first established in 2008 to merge five subject areas (i.e. horticulture, agronomy, plant breeding, soil science, and pests and plant diseases) and generally focuses on sustainable agriculture. The latest curriculum reviews considered feedback by the Indonesian Agroecotechnology Association (PAGI) as well as OBE requirements and additional suggestions by the labour market and other stakeholders.

Upon graduation, students should find employment as field managers, researchers, businessmen/business-women / agricultural entrepreneurs, or agricultural consultants. Graduates should be able to explore actual issues on sustainable agricultural systems and agro-environment. Moreover, the students are expected to master the competencies of using agricultural and environmental instrumentation to increase productivity, application of information technology, sustainable agriculture development, biotechnology and organic farming, controlled environment in agriculture, water and agricultural land conservation, and agribusiness entrepreneurship. The programme leaders have outlined four programme learning objectives and eleven intended learning outcomes. Among others, the students should be able to apply scientific concepts in the field of sustainable agriculture and the values of biodiversity, and adhere to relevant requirements and regulations of the programme. They should master knowledge and theoretical concepts about production technology processes and management of agricultural ecosystems as well as sustainable land resources guided by the underlying science and technology criteria. They should be able to adapt to, adopt and inform appropriate solutions to the dynamics of developing problems in agricultural cultivation, crop protection, and land resource management. UB states in its self-evaluation report that the curriculum focuses on main agricultural competencies, on supporting agricultural competencies, and on other agricultural competencies. The courses are also classified in the categories “Personality Development”, “Agricultural Studies”, “Technology-supporting” courses. The curriculum consists of 32 compulsory courses (i.e. 114 credits including “Statistics”, “Botany”, “Basis Plant Cultivation”, “Scientific Work”, “Seed Production Technology”, “Pancasila”), electives (20 credits), a compulsory internship (four credits), and the final thesis (six credits).

Experts’ evaluation

The study programme “Agroecotechnology” consists of a series of demanding subjects spread over a range of disciplines. The professional focus of graduates of this Bachelor’s degree is management “in the field of agriculture or other areas that support agriculture, planning in agriculture... etc.”. Although the name of the study programme is somehow misleading in some respects, it seems clear to both interested students as well as involved stakeholders that the content of the programme is a traditional agricultural science course. The background of the specific naming seems to be the intention not to transfer possible reservations of applicants towards classical agricultural science to the study programme. This intention is understandable. However, it seems questionable whether this kind of branding is in fact demand driven. The experts therefore recommend renaming the study programme according to its content: “Agriculture” or “Agricultural Sciences” (**Finding 9**) and at the same time, the experts suggest promoting the study programme as being more attractive to students who want to deal with the greatest challenges currently facing humanity: food security, food quality, natural resource conservation, sustainability and cutting-edge biotechnology.

Desired qualifications to be achieved are presented as ILOs. It is obvious that these qualifications include very general skills. However, ILO2 does not fit into the context of “attitude” since it is not a matter of attitude to apply scientific concepts in the field of sustainable agriculture. In addition, ILO4 is very comprehensive and includes topics that are not (yet) covered by the actual course programme. ILO5 and ILO9 are not specifically represented or emphasised by general or specific elements of the course programme. Most ILO contain subject-specific and interdisciplinary elements. Similarly, the presented PLO are not really reflected by the core skills taught during the course programme. Especially PLO3 and PLO4 are not fully supported by contents of the current offered courses at UB. It is therefore required to adapt ILO and PLO according to the course programme and its core skills (**Finding 10**).

The ILO presented generally reflect the requirements of the professional stakeholders and the expected qualifications of Bachelor graduates. Close contacts exist between faculty members and stakeholder delegates. However, it is not clear, how ILOs are being frequently updated to changing requirements or expectations. Regular student evaluations and national institutional evaluations generate feedback from students and

stakeholders and seem to confirm the appropriateness of ILO. However, especially the professional stakeholders' feedback might be slightly biased due to a strong relation to the university.

In addition to the specific naming, the programme has several features that make it difficult to compare it with a traditional agricultural science programme at an international level. The most important of these features is the very strong focus on plant sciences. The fields of livestock sciences are not considered, and the field of agricultural engineering is only partially considered. To ensure some degree of international comparability, it is required to include at least a basic course in farm animal biology and husbandry (**Finding 11**).

In addition, it should be noted that some basic subjects such as mathematics, physics, chemistry, and zoology are not offered, although they are critical pre-requisites for pursuing applied subjects such as plant biochemistry, plant protection, agroecology, plant physiology, soil science, or statistics. The experts therefore recommend offering some essential propaedeutic courses for these subjects (**Finding 12**).

Regardless of the name or title of the curriculum, the courses should be rearranged within the programme to enhance the gradual didactic acquisition of knowledge (**Finding 13a**). For example, an entrepreneurship course is offered in the 3rd semester, while the introduction to agricultural economics is offered in the 4th semester. The reverse arrangement in terms of sequencing would certainly make much more sense.

As a second step, the course programme should be revised so that basic courses are concentrated in the compulsory section, while courses with a higher degree of specialisation are moved to the elective section (**Finding 13b**). The programme could gain additional appeal if students had the opportunity to choose courses from other closely related departments, such as food science, food processing, food preservation, including a focus on biotechnology, genomics, molecular biology, bioinformatics and Information Technology. Another benefit would be to combine the available electives into specialisations that would be well identified on the final certificate.

According to the stakeholder responses, English language skills need to be improved. This would certainly be helpful for all students but is indubitably necessary for graduates who want to work in an international context. The experts therefore recommend offering additional English courses or selected courses presented in English (see above, **Finding 3**).

Such information for all courses, including functions, compulsory or elective course offers etc. is made available to students. A stylised typical course plan is currently publicly available.

Conclusion

The criterion is partially fulfilled.

Soil and Water Management (Master)

Description

The Master's programme "Soil and Water Management" covers four semesters and 36 SKS. The intake is set at ten students and offered twice in a year; there are currently 32 active students in the programme. Upon graduation, students are awarded with a Master of Agriculture, or MP.

UB states that the Master's programme focuses on soil and water management both in the agricultural field and in the environment field in general; this is depicted as a unique feature in the Indonesian higher education context. Further, the programme aims to equip students with the necessary skills for research activities, including scientific publications. The following are mentioned as possible employment areas upon graduation: field management and consultant, lecturer, researcher, agripreneuer, bureaucrat.

According to the information provided in UB's self-evaluation report, the curriculum has been reviewed using feedback from different stakeholders including companies, graduates, research institutes, government entities as well as the results of a series of scientific workshops and seminars, debates within an international scientific partnership, and considering the suggestions by the Soil Science Society of Indonesia and the Soil and Water Conservation Society of Indonesia. The programme leaders have developed five programme learning objectives and seven intended learning outcomes. Graduates should have the ability to lead, organise and carry out scientific studies and research in a multidisciplinary, interdisciplinary or transdisciplinary manner in response to addressing challenges encountered in integrated land and environmental management. They should have the ability to develop collegial/peer relationships through a network/forum of cooperation with agricultural expert communities and have sensitivity and concern for the community and the surrounding environment. The students should gain the ability to scientifically analyse with an interdisciplinary, multidisciplinary, or transdisciplinary approach, to produce appropriate concepts to address pressing problems/challenges and support policies for sustainable agricultural development. They should also gain the ability to manage problems and issues of natural resources based on the results of scientific analysis with the support of information technology, as well as social science approaches.

The curriculum is composed of 12 credits of compulsory courses ("Characteristic and Potential of Land Resources", "Land Technical Conservation and Remediation", "Land Agroforestry Management and Technical Rehabilitation", "Soil Fertility Management Advanced", and "Research Methodology"), 12 credits of electives (e.g. "Modelling System and Land Resources", "Computer Modelling Application", "Land Management Project Evaluation"), and a final thesis of 12 credits. According to information provided in the self-evaluation report, students must publish an article in an indexed reputable journal in order to be able to successfully graduate.

Experts' evaluation

As confirmed during the discussion with students and representatives of the labour market, the Master's programme "Soil and Water Management" (MSWM) addresses the needs and professional competencies required in the sector very well, while fully training students to the expected level of qualifications for acquiring the requisite Master's degree .

Given the recently grown challenges worldwide (i.e. defined by the "Planetary Boundaries" and the "United Nations Development Goals" (SDGs) in the context of Global Change) the combination of the two fields (sectors) of knowledge and action is highly topical. The curriculum does not only combine subject-specific and interdisciplinary elements but also covers transdisciplinary components. The MSWM study programme has a clear applied profile, but is based on a sound theoretical, research-oriented foundation. There is a well-defined focus on agroecosystem and rural landscapes, mostly defined by the hydrological scale of the watershed at various spatial scales (small catchment up to river basins). There is a nearly ideal balance of theoretical, lab and field work. The infrastructure in the lab and field (i.e. UB Forest with experimental watershed, depicting a living lab) is adequate and up-to-date. Some methods (i.e. texture, hydraulic conductivity, water retention curve analysis) may become modernised in the mid-term.

The small size of groups is favourable for detailed case studies and student project work. This means that students can easily interact with teachers, supervisors and stakeholders alike. This allows for acquiring skills in the community and also interaction with stakeholders in various fields including those in institutions dedicated to applied research (e.g. the Watershed Management Institute, Soil and Water Conservation, ICRAF). Finally, the students' interaction with various groups of stakeholders in connection with small groups and the given close contact between students and staff facilitate the fact that the intended learning outcomes are updated according to current developments.

A special strength of MSWM is the intense embedding in international networks. Given the history of the study programme which was launched in the early 1990s there is still a very fruitful collaboration with Wageningen

University in the Netherlands which is a leading institution in the field of soil and water management in the tropics and sub-tropics. More recent contacts and co-operations with universities in Europe (i.e. Göttingen and Munich, Germany) and the Pacific region (i.e. Australia and New Zealand) are in synchrony and have created a favourable and stimulating environment of networking and mutual exchange of students, staff and methodological approaches. This includes enviable options for earning a double degree with partner universities in Taiwan and Thailand.

Modern and innovative modelling approaches are well integrated in the study curriculum. This allows for adequately describing complex natural and watershed management systems. Given such a basis, multiple scenarios (i.e. land use, climate change) can be developed and tested. This supports management decisions at various inter-temporal spatial scales. It appears that there is a sound and high-standard outcome in terms of publications with even international visibility. In general, students appear to be well trained in academic writing and general communication skills. During the site visit it also became clear that the majority of students have ample time to prepare their thesis and complete the programme with positive results.

Up until now, MSWM students are mostly recruited from the UB undergraduate programmes (i.e. from “Agroecotechnology”). This has always led to a small student body with a fairly homogenous background. However, as the cohorts always have been rather small, this may also form a potential risk for the future sustainability of the programme. On the one hand, small classes enable teaching and accurate design of practical components, on the other hand, a broader and more diverse composition of student cohorts would support students in developing interdisciplinary skills. In particular, this may be true for potential candidates from related fields such as (physical) geography, water engineering, hydrology, etc. With respect to practical work related to soil and water resources management, many interfaces exist and the adequate communication with graduates from those disciplines is therefore essential, notably when it comes to technical aspects of water management which traditionally has been more the domain of (civil) engineers. Given this background, a general compulsory course on engineering-related hydrology (i.e. groundwater, catchment hydrology, hydropower, technical flood control versus nature-based solutions to retain water in the landscape) – probably in cooperation with lecturers from the Faculty of Engineering – needs to be implemented (**Finding 14**). Considering the make-up of the curriculum it appears that some important topics in water resources management are underrepresented in the curricula: For instance, there is no course which explicitly deals with irrigation, rice field water management, wastewater management. Therefore, it is recommended that – as may be dealt with within other courses – these topics should be made explicit (**Finding 15**). Furthermore, it is suggested to include more elective courses on hydrology aspects. As UB has recently launched a new undergraduate programme in forestry, it is also recommended to include forestry-related contents probably with a focus on the interaction between forest, soil and water (in addition to agroforestry) in the MSWM curriculum (**Finding 16**).

The fact that the MSWM programme is a unique combination of the two natural resources soil and water and thus is highly topical and relevant should be made more visible within UB’s communication efforts. This would likely tend to increase the public attention and by this attract applicants from other faculties of UB and universities in Indonesia. The very good infrastructure and large number of staff in the MSWM at UB has the potential to take on board a larger number of students and increase their diversity. The uniqueness and innovative character of the study programme could be demonstrated by better connecting the contents of the curriculum with inter-/transdisciplinary policy initiatives, i.e. the United Nations’ SDGs, Millennium Assessment with its system of ecosystem services. This could make the programme more attractive to potential students from other disciplines.

Conclusion

The criterion is partially fulfilled.

Agricultural Entomology (Master)

Description

The Master's programme "Agricultural Entomology" covers four semesters and 36 SKS. The intake is set at ten students twice a year; there are currently 19 active students in the programme. Upon graduation students are awarded with a Master of Agriculture, or MP.

According to information in the self-evaluation report, the curriculum has been reviewed using feedback from different stakeholders including companies, graduates, research institutes, government entities as well as the results of a series of scientific workshops and seminars and considering suggestions by the Entomological Society of Indonesia.

One of the main goals of the programme is to equip students with the necessary skills for research activities including scientific publications. The following job profiles are mentioned as possible employment areas upon graduation: business manager in the field of agriculture or other fields that support agriculture, planner in agriculture, farmer in agricultural business or other fields that support agriculture, researcher in the field of agriculture, as well as lecturer. The programme leaders have developed three programme learning objectives and seven intended learning outcomes. Graduates should be able to work together and have high social sensitivity and concern for society and the environment. They should master concepts, theories, and methods in the field of agricultural entomology, have skills to manage research in the inter/multidisciplinary field of agricultural entomology. Further, they should have skills in developing proven innovations and applications for problem solving in the community in the field of agricultural entomology in an inter/multidisciplinary manner within the framework of sustainable agriculture.

The curriculum is made up of 16 credits of compulsory courses (including "Insect Ecology", "Insect Physiology", "Tropical Agroecosystem Biodiversity", "Research Methodology and Data Interpretation"), eight credits of elective courses (e.g. "Insect Behaviour", "Plant Quarantine and Regulation", "Invasive Species Biology", "Plant Resistance to Pests") and 12 credits for the final thesis. According to information in the self-evaluation report, students must publish an article in an indexed reputable journal in order to be able to successfully graduate.

Experts' evaluation

This postgraduate study programme adequately covers fundamental aspects of entomology at a Master's level. The study load of four semesters including completion of thesis is also adequate. There is sufficient facilities and support from the laboratory staff and faculty members for the Master's students. Currently, this programme is more focused on the needs of government stakeholders such as agricultural quarantine and instruments standardisation agencies in the Ministry of Agriculture. The programme is well-accepted and well regarded by the stakeholders. The criteria for students to publish their work in a reputable peer-reviewed journal as a graduation criterion even at Master's level is now an acceptable practice internationally. This will ensure that the students with the help of their supervisors are focused on completing their research successfully.

However, a thorough examination of the curriculum has revealed several key weaknesses that must be rectified for this programme to be compatible with other internationally recognised Master's programmes. This is crucial as international accreditation will further attract international students, thereby raising the quality of postgraduate education of the university. Therefore, the following points must be addressed to remedy the identified weaknesses:

1. The need to address the PLO in a more concise manner. The three current PLO are vaguely described. As an example, between PLO1 and PLO2, what does one mean by being competent in the field of

agricultural entomology and being competent to develop research in that field? What does it mean to compete at the global level? Each PLO must be very specific and concise (**Finding 17**).

2. Similar observations are also found in the formulations of the ILO. For example, it is difficult to distinguish between ILO2 and ILO3. Each ILO must be specific, measurable and quantifiable. This will enable a more effective matching of the intended specific outcomes. The PLO and ILO must be revised accordingly to better reflect the needs of level 8 of the Indonesian Qualifications Framework (IQF) (**Finding 17**).
3. Courses offered must address more contemporary issues affecting agricultural entomology. This includes biodiversity conservation/loss applicable. Currently, only one course on the relationship between climate change and pest management is offered as an elective course. Another alternative is to revise the courses offered and address applicable issues in such courses as needed. Thus, the Master's programme of Agricultural Entomology (MAE) must also address and acknowledge current threats from climate change and biodiversity conservation/loss in its programme (**Finding 18**).
4. All modules of MAE courses must be revised (**Finding 19**) as there were inadequacies in several key aspects:

(A) Lack of course *description* for all courses. Between two to three concise sentences describing the contents and topics of each course are required.

(B) Learning outcomes. In this section, there is inconsistent information. For example, hierarchies of CLO are listed in compulsory course PTH82218, but are absent PTH82229. Each course must display CLO clearly demonstrating the expectations that students should gain from successfully completing the course.

(C) The CLO in the course descriptions outcomes do not reflect on the learning process that is required but offer merely a description of mostly one single level of learning. One such example is in PTH82117 (Insect Taxonomy; compulsory course) where all the seven CLO begin with "Able to develop knowledge...". It is a must to apply a relevant taxonomy of learning (e.g. Bloom's taxonomy) so that each higher CLO demonstrates higher thinking order skills.

(D) Three domains to evaluate the student's learning process are Cognitive (Bloom's taxonomy), Affective (Bloom's taxonomy) and Psychomotor (Dave's taxonomy) skills with different levels (hierarchies) of learning. These three domains of learning must then be mapped with the ILO for each course.

(E) Comprehensive assessments are lacking in examinations. The courses involve assignments and case studies. At least one exam and one midterm test are necessary to evaluate the cognitive domain at either C5 (e.g. evaluate) or C6 (e.g. synthesis) levels. At present, the cognitive domain cannot be effectively measured with assignments and case studies alone.

(F) References listed in the modules are very archaic, with some dating back to 1951 for courses such as PTH6112 (Plant Resistance to Pests) and 1974 for PTH6102 (Insect Physiology). References must thus be updated to be more recent, no later than five years old.

One aspect that should also be considered is the size of the student body. Following the discussions during the site visit, the experts believe that the number of students' intake is too small at only ten students per intake. A considerable increase in student intake will certainly raise the improve the quality of teaching as well as attainment of psychomotor skills. In addition, this will foster greater diversity, coordination of teamwork skills and development of leadership skills in group work.

Conclusion

The criterion is partially fulfilled.

Plant Pathology (Master)

Description

The Master's programme "Plant Pathology" covers four semesters and 36 SKS. The intake is set at ten students twice a year; there are currently 31 active students in the programme. Upon graduation students are awarded with a Master of Agriculture, or MP.

UB states in its self-evaluation report that the Master's programme was established in 2017 as one of Indonesia's first programmes focussing on phytopathology. One of the main goals of the programme is to equip students with the necessary skills for research activities including scientific publications. Upon graduation, students typically find employment as researchers at research institutes, universities, or national/international companies, managers of research in the field of phytopathology, as academics at a college or other educational institution, as managers/decision-makers in government institutions and private companies, as national/international scale consultants/or in NGOs, or as agripreneurs.

According to information in the self-evaluation report, the curriculum has been reviewed using feedback from different stakeholders including companies, graduates, research institutes, government entities and suggestions by the Indonesian Phytopathological Society. UB states that it conducted a benchmarking exercise with similar programmes in Indonesia and abroad. The programme leaders have defined two programme learning objectives and seven intended learning outcomes. Accordingly, students should be able to work together and have high social sensitivity and concern for society and the environment. They should master the theory of agroecosystems for plant disease management and have the requisite skills to manage research in the inter/multidisciplinary field of phytopathology. Further, they should acquire skills in contributing to problem-solving in society through research design in the field of phytopathology. Students should also be equipped with skills in generating proven innovations and applications for community problem-solving in the field of phytopathology in an inter/multidisciplinary approach within the framework of sustainable agriculture.

The curriculum is made up of 17 credits of compulsory courses (including "Research Methodology and Science Ethics", "Applied Statistics", "Techniques in Phytopathology", "Agroecology for Disease Management", "Pesticides Eco-toxicology"), seven credits of elective courses (e.g. "Quantitative Epidemiology", "Root Microbiology", "Plant Disease Resistance"), and 12 credits for the final thesis. According to information in the self-evaluation report, students must publish an article in an indexed reputable peer-reviewed journal in order to be able to graduate.

Students can choose an optional double degree programme with the National Taiwan University (NTU) or with the National Pingtung University of Science and Technology (NPUST, Taiwan).

Experts' evaluation

The Master's programme "Plant Pathology" provides a good conventional curriculum covering both basic elements and focused specifications within the topic. It generally corresponds to the expected level of qualifications at Master level. However, there are some weaknesses that are worth addressing to maintain the international standard and to achieve the ILO.

First, it is necessary to include additional state-of-the-art topics and methods in most of the elements of the curriculum (**Finding 20**). The rapid methodological and conceptual changes in the field of plant pathology are not sufficiently reflected by the contents of most of the courses (see ILO4). Examples are methods in molecular biology, molecular diagnosis, and chemical analytics that have an enormous impact on basic and applied aspects of the different disciplines in plant pathology. The partially outdated literature mentioned in the references must also be updated (**Finding 21**).

Students who graduate in Plant Pathology should be specialists with a broad knowledge in the basics in all fields of plant pathology. The basic knowledge should include pathogenesis of all relevant groups of pathogens including fungi, bacteria, viruses/viroids, and nematodes. This advanced knowledge is essential for graduates in all possible working environments such as quarantine institutions, plant breeding companies or institutions. It is therefore requested to move all courses related to pathogenesis to the compulsory part of the curriculum (**Finding 22**). The students can then go on to gain higher specialisation by selecting elective courses and in their master thesis.

Plant pathology in different working environments is strongly related to practical work in the field or the laboratory. Therefore, it is recommended to include more practical work elements in the different courses including the different pathogenesis courses (**Finding 23**). In this way, specific methods such as preparation of specimen for microscopy (i.e. sectioning, staining), immunological and molecular detection, isolation of specimen from plant tissue and soil, growth and characterisation of microbes on media, separation of nematodes from soils etc. can be taught to the students complimented with hands-on practical training. Given the smaller numbers of students, this should not be a major problem.

Stakeholders seem to have a high opinion of the programme. However, skills in using the English language in reading, writing and speaking should be improved. It is recommended to include elements of English in the different courses, e.g. reading literature in English, giving presentations in English, writing courses papers in English (see above, **Finding 3**).

The course programme as depicted in the documents provided by the faculty is generally clear but should be rearranged according to the above mentioned requests. The graphical overview is somehow misleading since it does not differentiate between compulsory and elective courses. It is recommended to provide an improved idealised typical course plan to the students (**Finding 24**).

An updated and improved curriculum has a very high potential to attract and educate students in the field of Plant Pathology. Excellent opportunities in the job market may contribute to increase the intake of students who choose to pursue this highly demanding and high interesting discipline.

Conclusion

The criterion is partially fulfilled.

2. Procedures for quality assurance

Bachelor's/Master's degree

The programme is subject to the higher education institution's policy and associated procedures for quality assurance, including procedures for the design, approval, monitoring, and revision of the programmes.

A quality-oriented culture, focusing on continuous quality enhancement, is in place. This includes regular feedback mechanisms involving both internal and external stakeholders.

The strategy, policies, and procedures have a formal status and are made available in published form to all those concerned. They also include roles for students and other stakeholders.

Data is collected from relevant sources and stakeholders, analysed, and used for the effective management and continuous enhancement of the programme.

[ESG 1.1, 1.7 & 1.9]

Description

The quality assurance system at Universitas Brawijaya is based on a general Quality Manual as well as on Quality Standards defined at university level that apply to all subsequent levels with respect to Standard Operating Procedures as well as Supporting Documents. The system differentiates between internal and external quality assurance systems, the latter including ISO certification, national regulations, as well as national and international accreditation criteria.

In the *Tridharma* context, specific bodies and units are in charge of pursuing and implementing quality assurance instruments for the field of education, namely the Institute for Educational Development and Quality Assurance, the Quality Assurance Centre (university-level), the Quality Assurance Groups (faculty-level) and the Quality Assurance Units (department-level). They are each responsible, at different levels, for elaborating educational quality standards into academic quality documents, monitoring the implementation of academic quality assurance, evaluating the academic quality assurance, and periodically reporting the findings of academic quality assurance implementation to the faculty and university leadership.

Internal quality assurance follows a DIECSI/PPEPP-cycle of Determination, Implementation, Evaluation, Control, and Standards Improvement in all aspects including curriculum development. The main evaluation tool in internal quality assurance is the annual Internal Quality Audit (AIM). Other tools include performance evaluation reports, curriculum monitoring, follow-up verification as well as Management Review Meetings with top leadership. Part of the internal quality assurance mechanisms deals with measuring the fulfilment of set key performance indicators at different levels. External quality assurance takes the form of external audits in the context of national accreditation by the national agency BAN-PT and international accreditation.

UB states that all stakeholders are involved in the quality assurance measures, i.e. lecturers, supporting staff, students, alumni, and graduate users, through tracer studies and stakeholder satisfaction surveys organised every semester by the central Career Development and Entrepreneurship Unit, and through focus group discussions organised directly by the faculty/departments.

Experts' evaluation

The evaluations are very well developed and include logical and thought-out processes. They provide valuable insights into the quality of the study programmes. Based on the self-evaluation report and the audit on campus, the experts still have questions regarding which of the changes to the study programmes carried out in the past years are based on findings of the monitoring results. The experts suggest that in the reaccreditation of the study programmes there should be more explanations – especially in the self-evaluation report – on how the curricula and other details have changed in the past accreditation period and based on which sources.

Generally, the follow up processes of the evaluations is not clear to the experts. The experts therefore recommend improving the follow-up process of quality assurance, e.g. by developing a PDCA cycle (**Finding 25**).

The experts are still not fully aware of how exactly the credits of the modules are translated from SKS to ECTS. For example, the ratio of SKS to ECTS in the elective courses of the MSWM study programme is much different than in the elective courses of the other two Master's programmes. Providing, on the faculty website, an easy-to-understand explanation on how the translation of SKS to ECTS works would be one of the many ways to raise international student (and staff) mobility – which is one general recommendation given by the expert panel (**Finding 26**).

The experts found issues in the number of PLO and ILO (as explained in the previous chapters) and suggest that a more formalised labour market cooperation, e.g. giving formalised feedback regarding the respective profiles of the graduates could help in this respect. This could also lead to providing additional avenues for industry internships.

UB specifies that tracer studies are conducted one/two years after student graduation which seems to be a routine approach. Results of the studies for various programmes were shared with the panel of experts during the on-site assessment. Within the tracer studies the experts found different methodologies between the programmes, where gathered data seemed to be superficial in some cases. In general, the methodological approach for the studies was not made explicit and neither does it appear robust enough to provide optimal feedback from alumni and industry for quality assurance purposes – the design of the tracer studies should therefore be improved to gather more feedback for curriculum improvement. An additional question is whether a systematic impact evaluation of graduates, as opposed to routine feedback, with respect to access to the labour market and satisfactory participation in the labour market has been conducted and if so, what the results were and how they compare with the performance of graduates from other universities in Indonesia on the labour market. It is strongly recommended that UB make a conscious effort to systematically conduct its tracer studies with an emphasis on a matching analysis of diverse job placements and potential gaps between the curriculum and labour market requirements as opposed to the assessment of static indicators as seen in the results shared with the panel of experts during the on-site visit (**Finding 27**).

All of the students have to take part in the evaluations, otherwise they cannot access the results of their exams. The experts support this so the faculty gets credible results in most of the modules.

Sadly, the student representatives are not included in the faculty bodies and governance systems. In order to improve the process of quality assurance, the experts suggest finding more ways to directly involve students in the decision-making processes; maybe student representatives could take part in decision-making on how the study programmes are further developed.

Conclusion

The criterion is fulfilled.

3. Learning, teaching and assessment of students

Bachelor's/Master's degree

The delivery of material encourages students to take an active role in the learning process.

Students are assessed using accessible criteria, regulations, and procedures, which are made readily available to all participants and which are applied consistently.

Assessment procedures are designed to measure the achievement of the intended learning outcomes.

[ESG 1.3]

Description

UB states in its self-evaluation report that teaching and learning are informed by the research and community services activities, and that all study programmes should refer to the faculty-level master plan for research when implementing learning activities. According to national regulations, all undergraduate programmes must adopt an interactive, holistic, integrative, scientific, contextual, thematic, practical and collaborative learning process. UB states that it pursues a student-centred approach in learning and teaching by offering synchronous, asynchronous, and hybrid learning. Students have access to learning material and support on the different learning platforms used, including the university's own platform. The following specific teaching and learning modes are included in the programmes: seminars/talks, group discussions, simulation, collaborative and participatory learning including case-method, and team-based projects, lectures, responses and tutorials, practical courses as well as blended learning using the Rotation Model method. In the framework of the

Freedom to Learn scheme at Bachelor level, students are free to earn 20 credits outside of their study programme through student exchanges, internships/work practices, teaching assistance in education units, research, humanitarian projects, entrepreneurial activities, independent studies/projects, village development/thematic community service programmes. At the Master level, UB puts emphasis on sharpening students' analytical skills by reviewing international journals and case studies. The teaching and learning methods should also strengthen the students' mastery of the latest theories and methods to support the students' final project. UB states that students both at Bachelor and especially at Master level are to be involved in the lecturers' research activities (e.g. collecting data, analysis, and publications).

Assessment takes the form of structured activities, quizzes, written exams, practical assignments, oral tests, presentations, midsemester exams, final exams. According to information in the self-evaluation report, assessment at Master level involves self-assessment, peer-assessment, as well as assessment by teaching staff and teaching assistants (tutor assessment).

UB has defined a procedure for dealing with grade complaints in its Academic Handbook. Students are to initially submit their complaint to the lecturer. If the problem is not resolved, students can then contact the head of the study programme. UB also states that it has developed policies aimed at combating intolerance and discrimination in ensuring the quality of facilities and dealing with intolerance; it has established a Center for Disability Studies and Services as well as unit working towards gender equality and the prevention of sexual harassment and bullying.

Experts' evaluation

Students of the various study programmes have confirmed that the use of learning and teaching methods (e.g. project-based, case study-based, etc.) and the generally very small classes (20-30 students, even when the student body is 200-300 strong) create a student-centred learning environment. This contributes to achieving the defined ILO. While the use of case-based teaching in a variety of study courses is particularly laudable, teaching staff could be encouraged to also develop and use more complex teaching cases, such as ambiguous real-life cases that may have more than one correct solution, in order to even better prepare the students for the professional challenges they are likely to face after graduation.

While some of the PLO, ILO and CLO stress the acquisition of competencies at higher taxonomy levels (i.e. analysis, synthesis), some courses exclusively formulate CLO at the level of understanding or explanation and lack CLO at more advanced levels (e.g. courses "Introduction to Agribusiness Management", "Agribusiness Designs" in the "Agribusiness" programme). Teaching staff should critically reflect on this aspect. The use of Learning methods of level 3 (simulations) and 4 (e.g. business case studies) could be encouraged in some of the modules of the Agribusiness Bachelor's programme, the contents of which are predestined to be taught using applied real-world case materials (e.g. courses "Professional Ethics", "Introduction to Agribusiness Management", "Agricultural Communication", "Farming Management", "Financial Management" etc.). This would contribute to even better equipping students with the skills and competencies required to apply and transfer their knowledge to new situations as a professional.

The use of a broad range of assessment methods in student examination (including multiple choice tests, written and oral exam, group presentations, assignments etc.) appropriately considers the diversity of students' preferences and needs and encourage student motivation, which is a notable strength. While strategies and materials for student assessment were generally well developed (e.g. use of various continuous and final assessments; systematic use of grading rubrics), a number of mid-term and final exam tasks were found to exclusively test for competencies at levels 1 and 2 of the learning taxonomy. Teaching staff should therefore be encouraged to include exam questions/tasks that correspond to higher levels of the taxonomy in each examination. Three domains of learning are used globally: Cognitive, Affective and Psychomotor. These domains should be applied to the curricula (**Finding 28**).

In a similar vein, experts also confirmed during the site visit that the overall GPA of students in various programmes is very high (average around 3.97-4.00). This suggests that there might be a positive bias built into the assessment/grading system (e.g. through assessment of level 1 and 2 competencies only, or through assessment of students' participation and the close relationship they have to their instructors in the very small class sizes). It is therefore recommended that teaching staff be encouraged to openly discuss grade distribution in the courses and strive to use a broader range of grades in order to better distinguish between the really excellent students and the very good and good students (**Finding 29**).

An online learning platform is used at UB to announce exams well ahead of the examination date, and to record and communicate student performance. Students have confirmed that they have good access to this platform. The fact that students can only access their exam results *after* they have completed the regular evaluation and provided feedback for the study course effectively contributes to a feedback culture that helps university staff to continuously improve their teaching and learning.

Conclusion

The criterion is partially fulfilled.

4. Student admission, progression, recognition and certification

Bachelor's/Master's degree

Consistently applied, pre-defined, and published regulations are in place which cover student admission, progression, recognition, and certification.

[ESG 1.4]

Description

UB's Academic Handbook as well as the relevant Rector's regulations govern the admission requirements and admission processes at the university. There are three types of admission routes: 1) the National Selection Entrance of State Universities (SNMPTN) based on academic achievements in secondary education or portfolios, 2) the Joint Selection Entrance of State Universities (SBMPTN) based on the results of the Computer-Based Examination (CBE), and 3) the Universitas Brawijaya Independent Selection (SMUB), regulated by its corresponding Rector's Regulation. To enrol in the Bachelor's programmes, students must be high school graduates, and in the case of the Bachelor's programme "Agroecotechnology", students cannot be colourblind. Admission to the Master's programmes is only possible through the Independent Selection route. To enrol in the Master's programmes, students must complete their Bachelor studies with a GPA of at least 2.75, have a TOEFL ITP score of at least 450 or IELTS 5.0 equivalent, and a minimum score of 450 at the Academic Potential Test.

The number of credits that students can accumulate in one semester depends on the students' GPA in the previous semester. As a rule, however, students can take up to 24 credits per semester. According to information in the self-evaluation report, the students' progress is checked at the end of each semester primarily by their academic advisor, as well as based on data available in the academic information system (SIAM). Compulsory counselling is planned for students whose number of credits acquired per semester is below average. Support is also provided to students by the Student Counselling Unit at the university level.

Support for international students is regulated in specific guidelines and standard operating procedures. They take part in classes taught in English and are supported by academic supervisors and student assistants. Their

studies are recognised based on a credit transfer system. UB states that it provides support to students going abroad through specific partnerships with other universities. Students can contact the university-wide International Office and the faculty's own International Relations Office. Recognition of studies abroad and of other activities in the framework of the Freedom to Learn policy is based on corresponding national regulations and the relevant Rector's Regulation. UB states that it has also implemented a Recognition of Prior Learning (RPL) scheme regulated at faculty level.

Upon graduation, students receive a certificate, an academic transcript, and a diploma supplement providing information on the grades of each course, their GPA, the thesis, as well as information on the qualification and learning outcomes.

Experts' evaluation

The enrolment structure corresponds to the requirements in the Indonesian system. However, it is interesting to note the flexibility for student admission by way of the three different routes to enrol at UB with specific routes for Bachelor's and Master's programmes. This is commendable. Also, the flexibility of the programmes, allowing students to spend a considerable time abroad as exchange students to ensure an optimal balance between learning and realistic field situations, is a positive aspect. During discussions with students, however, they indicated that the current international exchange programmes are too short – more international opportunities including longer exchange programmes for students/financial support etc. would be preferred. Reviewing the current exchange programme offers for Indonesian students by exploring opportunities for exchange studies abroad and possibly increasing their duration to allow for optimal international exchange experience and exposure for participating students could be another way to increase mobility numbers (**see Finding 26**). Also, there appears to be inadequate provisions made for international students coming to Indonesia through exchange programmes. Reverse international student mobility (students coming from abroad to UB) is consequently very low. This is a deficiency and should be addressed in order to raise mobility numbers (**see Finding 26**) with special provisions made for language integration of international students, especially at Bachelor level where most courses are taught in Indonesian. Ultimately, it would be good if the university can develop standard learning agreements to facilitate student mobility for both local and international students. Currently, mobility seems to be mostly limited to formal cooperation agreements with specific universities abroad. This will also facilitate development of standardised guidelines and regulations for recognition of competences and transfer of credits from other higher education institutions abroad, which in turn can also be made available to both local and international students as per international standards and in addition to the specific ones available through cooperation with select universities as is the case with the National Taiwan University as an example. Ultimately, this is expected to attract and increase student numbers while supporting students to develop and/or improve their skillset, ultimately, ensuring better integration and international exchange and cooperation. Procedures put in place for faculty international exchange seem more than adequate and are commendable. However, this can be further improved by making specific arrangements to include international faculty to take up short technical courses that are in high demand such as Genomics, Climate Change Mitigation, Circular Economy Systems as well as general courses such as Project Management, and International Development etc.

Data for admission procedures of past cohorts for both local and international students is available from UB, but the statistical breakdown should be made available to the general public at the university's website. This does not appear to be the case and providing such information could help raise mobility numbers (**see Finding 26**). While current learning and teaching methods considerably contribute to an appreciable student-centred learning environment, it appears difficult to be able to conduct a data-based review/check of the achievement of the PLO and ILO following the successful completion of individual programmes since the PLO and ILO are not concisely formulated; their completion is not easily discernible in terms of evaluation. Reviewing the formulation of the PLO/ILO – as advised in some of the individual course assessments of this report (see

Chapter 1, **Finding 1**) – will also facilitate a more data-based approach regarding student gender diversity and social inclusion, in turn enabling more flexible learning paths and stimulating student motivation, self-reflection, and engagement in the learning process. UB has very good facilities for teaching and learning. Along with substantial efforts to improve literacy rates at the national level, it is prudent to correlate this with the proposed low number of students dropouts. It appears critical for UB to sequentially document student dropout rates and the underlying causes for dropouts in both the Bachelor's and Master's programmes, even if numbers are low.

UB offers a certificate, an academic transcript, and a diploma supplement upon graduation, this is commendable and consistent with established international procedures including those in Europe.

Conclusion

The criterion is fulfilled.

5. Teaching staff

Bachelor's/Master's degree

The composition (quantity, qualifications, professional and international experience, etc.) of the staff is appropriate for the achievement of the intended learning outcomes.

Staff involved with teaching is qualified and competent to do so.

Transparent procedures are in place for the recruitment and development of staff.

[ESG 1.5]

Description

Teaching staff at UB can be recruited as civil servants or on a contract basis. According to national guidelines, the minimum qualification to teach in a Bachelor's programme is to hold a Master's degree, for teaching in Master's programmes lecturers most hold a doctorate. Staff recruitment at UB is based on a basic competence test as well as a field competence test. Based on national guidelines, lecturers' workload covers 12 to 16 credits per semester; this includes teaching, research, and community service activities. Research is compulsory for teaching staff. The Faculty of Agriculture has delegated the repartition of the workload between these three areas to the different departments.

At faculty level there is a total of 179 lecturers (39 professors, 26 associate professors, 94 assistant professors, and 20 senior lecturers) and 133 administrative staff. Supporting staff include, among others, laboratory assistants. For the "Agribusiness" study programme UB indicates a lecturer to student ratio of 1:14 with a total of 108 lecturers, including eight full professors, five associate professors and 43 assistant professors. For the "Agroecotechnology" study programme UB indicates a lecturer to student ratio of 1:23 with a total of 111 lecturers, including 25 full professors, 26 associate professors and 16 assistant professors. For the "Soil and Water Management" study programme UB indicates a lecturer to student ratio of 1:2 with a total of 16 lecturers, including nine full professors, six associate professors and one assistant professor. For the "Agricultural Entomology" study programme UB indicates a lecturer to student ratio of 1:1 with a total of 13 lecturers, including four full professors, five associate professors and four assistant professors. For the "Plant Pathology" study programme UB indicates a lecturer to student ratio of 1:2 with a total of 14 lecturers, including four full professors, four associate professors and five assistant professors.

In addition, UB states that external lecturers/guest lecturers from foreign institutions or industrial practitioners are invited on an individual basis to deliver a course. This includes participation in the so-called 3-in-1-programme, a collaboration of national lecturers, international lecturers as well as practitioners.

UB states in its self-evaluation report that teaching staff is required to take part in further training, including on teaching methods through, e.g. the national PEKERTI or Applied Approach (AA) trainings dealing among others with new teaching methods and the use of technology in teaching and learning. UB also offers academic writing workshops, pre-doctoral training, and language training. Furthermore, lecturers are encouraged to seek profession certification, e.g. the Engineering Professional Certification or the Agriculture Competence Certification. Training for laboratory and administrative staff is also available. Lecturers are provided with incentives and allowances to attend subject-specific seminars, trainings and to pursue their studies from a Master's degree to a doctorate.

Experts' evaluation

In general, there is a high number of staff members, especially at lecturer/senior lecturer level. This facilitates an intense supervision of students in particular at Master level. Staff members also have a broad expertise corresponding with the demands of the current curricula (still, depending on the need to modify the curriculum of the individual study programmes as suggested in Chapter 1, there may be a need for additional expertise). From the discussions during the site visit with the students, with graduates as well as teaching staff, it became clear that staff members are motivated and accessible to students. Furthermore, staff members support each other. In general, UB has defined a concept for staff development. Accordingly, staff (including administrative and support staff) have access to further training. For teaching staff, there are multiple opportunities for further development in their subject, but also regarding teaching methods and/or assessment methods.

A very important observation made concerns the good and partly even excellent international connections. Several lecturers completed their PhD abroad and kept tight connections with their graduating universities. This results in very active connections to international networks, e.g. in Europe. The study programmes at the UB Faculty of Agriculture greatly benefit from these connections. The faculty and university management support these international activities, e.g. active participation in international conferences, attending special courses and workshops on methodological aspects, but also other forms of academic and further education opportunities for staff including pursuing PhD programmes. It is very positive that funding for staff training also covers stays abroad (5% of the total faculty budget is allocated to staff training). Such efforts should continue in the future since this is a very important investment into the quality and international visibility of study programmes and associated research.

In some study programmes staff members apparently have a rather high teaching load – a reduction or redistribution of the teaching load, where it is found to be too high, might be helpful. This also holds true for the study programmes in which the resources should be better adapted to the size of the student body. Even though the skills in communicating, teaching and writing in English as the global language in science are advanced for the overwhelming part of staff members, there is still room for improvement (**Finding 30**). This holds especially true for Master's programmes with their many connections to international networks and exchange students coming from foreign universities (i.e. partner universities with double degree options in Taiwan and Thailand).

In general, the 3-in-1 programme is a good and highly promising scheme. However, it should be made more prominent for the general public. This could also help in increased visibility and marketing of the programmes for attracting higher student numbers.

The Faculty of Agriculture has an appropriate system of planning which ensures that teaching staff will be available for the next six years (duration of the accreditation). It appears that recruitment procedures for

teaching staff are well defined and transparent, which ensures that highly qualified persons will be employed on the different academic levels. Furthermore, UB has established schemes that ensure that the lecturers actually involved in the different study programmes are qualified to teach. There is an advanced way of communication ensuring that external/guest lecturers are made familiar with the requirements of the individual study programmes.

Conclusion

The criterion is fulfilled.

6. Learning resources and student support

Bachelor's/Master's degree

Appropriate facilities and resources are available for learning and teaching activities.

Guidance and support is available for students which includes advice on achieving a successful completion of their studies.

[ESG 1.6]

Description

General information on the study programmes is provided by way of an Integrated Study Orientation Programme (ISOP). UB states that course material and course descriptions (Semester Lesson Plans, RPS) are updated before the start of every semester. Students have access to the material on the university learning platform and they receive a schedule each semester. Information on the academic regulations is available in the different Academic Handbooks.

Students are supported by academic advisors / academic supervisors assigned to them for the duration of their studies; their role is to assist students in planning their studies each semester, evaluating semester outcomes and other aspects of the educational process. In the Master's programmes academic assistance is provided by the head of the respective study programme. Additional counselling for non-academic matters is available at the Student Counselling Division. UB states that it also provides support for students with special needs through the UB Disability Service Study Centre (DSSC), including with the help of so-called student companions and the adaptation of facilities to render them accessible to all. UB offers financial aid and scholarships. There is also an Integrated Service Unit for Sexual Harassment and Bullying; students can also approach the Career Development Center and the Career Development and Entrepreneurship Unit for support regarding career opportunities, job training, and self-development to enter the professional world.

The Faculty of Agriculture is spread over nine buildings, including a lecture room building, department buildings and one student activities building. UB lists 17 educational laboratories used in the five programmes under review, as well as research centres at faculty level (including the Maize Research Centre, the Center for Tuber Crops Studies, the Tropical Agroforestry Research Center, and the Underutilized Crops Research Center), and field laboratories for lowland crops, for highland crops, and for urban farming activities. According to information in the self-evaluation report, each laboratory is served by a permanent laboratory assistant. There is also a central Technical Implementation Unit and studios as well as IT support and Smart Classrooms for the use of media in teaching. Students have access to the UB central library as well as to the faculty's own library. UB describes its campus as a Green Campus including facilities for sports, for student intra-curricular activities, health facilities, a dormitory, and worship facilities. In addition, there are 18 student talent development units supporting the students in developing their soft skills. UB mentions a Student Representative Council, a

Student Consultative Assembly, and a Student Executive Board as well as student associations at the level of the programmes.

The university has a Rector's programme for the development of the main facilities/infrastructure in the framework of its Strategic Plan, as well as Standard Operating Procedures, e.g. for equipment maintenance in each laboratory.

Experts' evaluation

First of all, the experts would like to address the high number of teaching staff which results in a very good ratio of students to lecturers. The students are very satisfied with the fact that lecturers and staff (including their academic advisor) are very accessible and reactive to any of the students' wishes and questions. There are enough support services too, which students can use. In terms of accreditation, the experts do not have any concerns that the size of teaching staff will be in a critical state in the next few years.

The students feel well informed, and the online platforms are easy to use, so any missing information is quite accessible. Students did not state any issues for getting information or support for special needs. UB's established Centre for Disability Studies and Services to address among others gender equality and preventing sexual harassment and bullying is commendable. However, information provided on the current state is scanty and should be made more explicit and visible: the university could provide in the future concrete information as to how the Centre functions in practice in addressing practical student issues through examples of anecdotal evidence while facilitating the establishment of internal track records of how some past issues have been resolved.

There is a marked variability in the quality of infrastructure. There are some very good facilities, especially in the Agribusiness study programme/department. The faculty has a few small rooms for group work, which are often used by students of the respective study programmes. The library has access to the databases and main publishers which the experts evaluated as adequate. There is also good IT support and licences are available for students. There is a podcast room, which is easily accessible. Yet, some of the facilities could be improved: The overall equipment and facilities of the 'agricultural labs' (e.g. plant nutrition, soil science, plant pathology) appear oftentimes outdated and in need of either replacement or renovation. Some of these laboratories could be renovated to meet modern standards. Not all facilities appear to be entirely accessible to students with disabilities. The experts therefore recommend ensuring that there is maintenance funding which secures continuous improvement of the concerned facilities (**Finding 31**). The equipment in the laboratories is mostly sufficient but the maintenance funding might provide financial support for future improvements as well. There are some green houses that are used for the study programmes, i.e. for thesis purposes. Additional green houses are planned to be constructed in the near future as they are very much needed in view of the considerable amount of research studies to be conducted within the faculty. The requisite funding for these has already been secured as confirmed by the faculty.

The students feel well supported if they want to take part in an exchange semester. There is also a so-called exchange programme for a very short exchange of two weeks where students receive substantial financial support. Students, however, criticised the duration of this programme and said it was too short. The experts believe that there are ways to extend the duration of the exchange programme while maintaining financial support for students (see also Chapter 4, **Finding 26**).

Conclusion

The criterion is fulfilled.

7. Information

Bachelor's/Master's degree

Impartial and objective, up-to-date information regarding the programme and its qualifications is published regularly. This published information is appropriate for and available to relevant stakeholders.

[ESG 1.8]

Description

The website of UB provides overall information on its study programmes and study conditions as well as services to students. It includes information on profiles, education, research and service activities, students and alumni services, facilities, and quality assurance procedures and results.

The faculty has an Information Systems and Public Relations Manager; support is provided by the UB Information Technology Development Unit. Information is also provided through various social media channels. Information on the study programmes on the pages of the faculty include specific admission requirements, programme vision, mission and accreditation, academic and non-academic guidebooks, academic and non-academic activities, lecturer and staff profiles, student services, student affairs, stakeholder feedback, tracer studies, facilities. UB also mentions contributing to separate news portals on agriculture.

Experts' evaluation

While all basic information with respect to formal admission of the various programmes such as admission requirements, course time schedules and regulations, tuition fees, financial aid are clearly stated and are accessible for prospective and enrolled students from UB's website and hard copies upon request, there seems to be a lack of accessibility of consistent and senate-approved up-to-date information on the individual course curriculum/academic handbook for partners and different stakeholders for collaborative engagements with the university. These should include concise and up-to-date information on intended learning outcomes, and teaching, learning and assessment procedures (**Finding 32**). Such elaborate and consistently described information for the various programmes could be of high interest for both future applicants of the various programmes and as well as for local and international cooperation.

Furthermore, the experts encourage UB to upload the most recent and updated relevant information of the various programmes, including course syllabi, to its website, as some of the materials shared with the panel of experts in the self-evaluation report in this context were outdated. Also, there should be consistency and standardisation in the formatting of the documentation across programmes to clearly inform the students and other users of the different aspects of the programmes. This would not only improve transparency with the community but would also improve the accessibility for students and future applicants. To this end, updated information should be made accessible to all students prior to the beginning of the semester.

UB also seems to have done considerable research work in the agricultural sciences. Additional information on the Research Centre's partnership with other institutions internally and abroad, within the university and with the private sector to commercialise newly introduced technologies and products for potential buyers would be helpful. In addition, it is also critical that, as UB aspires for international accreditation, it strongly improves the visibility of its international programmes through targeted marketing and solicitations for formal international cooperation and collaborative partnerships – this would help towards an increase in mobility (**Finding 26**). Community outreach efforts should also be undertaken by UB to increase the current low student numbers in some of the Master's programmes.

Current information on the university website and brochures on international student mobility should be substantially improved to raise the actual mobility numbers (**Finding 26**) and the university should, among others,

place emphasis on student agreements and other mechanism and marketing options. The number of courses taught in English should be increased (see Chapter 1, **Finding 3**) so as to be able to attract international students coming from abroad to Indonesia. This should include information on credit transfer and language integration including the possibility of exchange faculty coming from abroad to teach short course modules or even for sabbatical/visiting professor engagements at UB.

Conclusion

The criterion is fulfilled.

V. Recommendation of the panel of experts

The panel of experts recommends accrediting the study programmes “Agribusiness” (Bachelor of Agriculture), “Agroecotechnology” (Bachelor of Agriculture), “Soil and Water Management” (Master of Agriculture), “Agricultural Entomology” (Master of Agriculture) and “Plant Pathology” (Master of Agriculture) offered by Universitas Brawijaya with conditions.

Commendation:

The experts commend the faculty for the intensive use of the 5%-earmarked budget for staff development, especially through international cooperation and training.

The experts commend the faculty for the intensive use of the 3-in-1 programme joining local lecturers, international lecturers, and industry representatives in joint teaching efforts.

Findings:

For all programmes:

1. The programme learning outcomes, intended learning outcomes and course learning outcomes of all programmes must be better aligned with each other. In the process, the faculty must ensure that the learning outcomes are subject-specific, related to the core competencies of each study programme, clear, comprehensive, properly aligned to the different levels of competencies (e.g., Bloom’s taxonomy, using higher order thinking skills and according to the cognitive, affective and psychomotor domains). The assessment forms must be properly aligned to the learning outcomes.
2. Cooperation and exchanges with other faculties and between departments should be intensified.
3. The use of English in teaching and learning should be increased, e.g. through incentives to write the thesis in English, courses on scientific English, English-taught courses.

For Agribusiness:

4. Each course should include learning objectives at the level of application, analysis and synthesis/judgment.
5. The curriculum should include elective courses dealing with animal production or agricultural technology.
6. Elective courses should be grouped according to “professional tracks” in order to provide students with more guidance.
7. The course descriptions must be improved by including additional information on the contents of each course.
8. The references and literature recommendations indicated in the course descriptions should be updated.

For Agroecotechnology:

9. The study programme should be titled “Agriculture” or “Agricultural Sciences”.
10. The programme learning outcomes and intended learning outcomes must better reflect the course programme and its core skills.
11. The curriculum must include at least one basic course in farm animal biology and husbandry to ensure international comparability.
12. Propaedeutic courses in mathematics, physics, chemistry, and zoology should be offered.
13. The makeup of the curriculum should be improved:
 - a. the order of courses should be rearranged to enhance the gradual didactic acquisition of knowledge,

- b. basic courses should focus on the compulsory parts of the curriculum and courses with a higher degree of specialisation should be offered as electives.

For Soil and Water Management:

- 14. The curriculum must include a general compulsory course on engineering-related hydrology.
- 15. The curriculum should deal with irrigation, rice field water management, wastewater management – either within a new course or by making the contents explicit in the current course descriptions of relevant courses.
- 16. The curriculum should offer additional electives on hydrology topics and on forestry-related topics.

For Agricultural Entomology:

- 17. The programme learning outcomes and intended learning outcomes must be revised to ensure that
 - a. the programme learning outcomes are specific and concise,
 - b. the intended learning outcomes are specific, measurable and quantifiable,
 - c. both better reflect the competences defined at level 8 of the Indonesian Qualifications Framework (IQF) and level 7 of the European Qualification Framework (EQF) respectively.
- 18. The programme must include content on current threats resulting from climate change and biodiversity loss – either within new courses or by making the contents explicit in the current course descriptions of relevant courses.
- 19. The course descriptions must be improved:
 - a. the contents and topics of each course must be described concisely,
 - b. the level of detail regarding the course learning outcomes (i.a. subcategories, ranking) must be consistent,
 - c. the different taxonomy and competence levels must be applied properly,
 - d. the different learning outcomes must be aligned with the proper domains of learning (i.e. cognitive, affective, psychomotor),
 - e. the assessment forms must be properly aligned with the domains of the intended competencies,
 - f. the references and literature recommendations must be updated.

For Plant Pathology:

- 20. The curriculum must include more state-of-the-art topics and methods, e.g. in molecular biology, molecular diagnosis, and chemical analytics.
- 21. The references and literature recommendations indicated in the course descriptions must be updated.
- 22. Pathogenesis must be part of compulsory courses and not electives.
- 23. Courses should include more practical work elements.
- 24. The idealised typical course plan should be corrected and improved.

For all programmes:

- 25. The follow-up process of quality assurance should be improved, e.g. by developing a PDCA cycle.
- 26. Measures should be taken to raise international student (and staff) mobility.
- 27. The design of the tracer studies should be improved to gather more feedback for curriculum improvement; emphasis should be put on a matching analysis of diverse job placements and potential gaps between the curriculum and labour market requirements.
- 28. Questions/tasks that correspond to higher levels of the taxonomy should be included in each exam; exam questions/tasks should reflect the three domains of learning (i.e. cognitive, affective and psychomotor).
- 29. Teaching staff should be encouraged to openly discuss grade distribution and strive to use a broader range of grades.
- 30. Teaching staff should be offered additional English language training.

31. The faculty should ensure that maintenance funding is made available to secure continuous improvement for the facilities.
32. The university should publish an overarching informative document for each study programme, e.g. a course handbook, with concise, consistent and up-to-date information on the intended learning outcomes, curriculum, academic regulations, teaching, learning and assessment procedures.