AQAS

AGENTUR FÜR
QUALITÄTSSICHERUNG DURCH
AKKREDITIERUNG VON
STUDIENGÄNGEN E.V.

FINAL REPORT

UNIVERSITAS BRAWIJAYA

CLUSTER FISHERIES & MARINE SCIENCE

AQUATIC RESOURCES MANAGEMENT (BACHELOR OF FISHERIES)

FISHERIES PRODUCT TECHNOLOGY (BACHELOR OF FISHERIES)

FISHERIES AGROBUSINESS (BACHELOR OF FISHERIES)

FISHERIES RESOURCE UTILIZATION (BACHELOR OF FISHERIES)

MARINE SCIENCE (BACHELOR OF MARINE SCIENCE)

AQUACULTURE (MASTER OF FISHERIES)

December 2022

Content

DECISION OF THE AQAS STANDING COMMISSION

ON THE STUDY PROGRAMMES

- **AQUATIC RESOURCES MANAGEMENT (BACHELOR OF FISHERIES)**
- **FISHERIES PRODUCT TECHNOLOGY (BACHELOR OF FISHERIES)**
- **FISHERIES AGROBUSINESS (BACHELOR OF FISHERIES)**
- **FISHERIES RESOURCE UTILIZATION (BACHELOR OF FISHERIES)**
- **MARINE SCIENCE (BACHELOR OF MARINE SCIENCE)**
- **AQUACULTURE (MASTER OF FISHERIES)**

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 15th meeting on 5 December 2022, the AQAS Standing Commission decides:

1. The study programmes "**Aquatic Resources Management**" (**Bachelor of Fisheries**), "**Fisheries Product Technology**" (**Bachelor of Fisheries**), "**Fisheries Agrobusiness**" (**Bachelor of Fisheries**), "**Fisheries Resource Utilization**" (**Bachelor of Fisheries**), "**Marine Science**" (**Bachelor of Marine Science**), "**Aquaculture**" (**Master of Fisheries**) 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 **31 December 2023**. 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 **31 December 2028**.

Conditions:

For all study programmes:

1. The structure of all programmes must be revised. Special attention must be given to the logical sequence of the courses (basis knowledge at the beginning followed by more in-depth knowledge and then specialised courses at the end) – as indicated for specific courses in the report (see Chapter 1).

2. The title of the courses must be checked against the content of each course and clear and transparent names must be given.

3. Students must be more actively and structurally involved in the regular review of programmes as well as other quality assurance procedures on faculty and university level.
4. UB must take specific measures to strengthen its student-centred learning approach. This should be done by including more diverse teaching methods and assessment forms, e. g. by integrating problem-based learning.
5. The programmes must foster more strongly the development of conceptual thinking by the students and at the same time offer more opportunities for hands-on training.
6. The admission criteria for all programmes, but especially for the Master's programme, must be made transparent.
7. UB must hand in medium-term HR action plans for each programme based on the identified needs of the programmes. The plans must deal with upskilling (e.g., teaching training), planned further training of staff (how the number of PhD holders will be upgraded within the next three years), and acquiring additional lecturers with specialisations not represented at the moment in staff.
8. UB must hand in an action plan regarding the improvement of its facilities, especially:
   a. providing classrooms and laboratories for larger groups of students on its main campus,
   b. improving the facilities of the Marine Station so that larger groups of students and staff can stay there and find equipment to carry out their research.

For the Bachelor's programmes:

9. The profiles of the Bachelor's programmes must be further clarified: the differences between the programmes as well as the common features must be made clearer; if appropriate, by integrating common features such as common fundamentals in shared courses.

For the Bachelor's programme "Aquatic Resources Management":

10. Subjects strengthening the knowledge and skills of students in management and conservation of aquatic resources, biotechnology of aquatic resources, and solving complex problems such as cases of managing aquatic environmental pollution as well as the destruction of marine habitat must be included in the curriculum and depicted accordingly in the corresponding courses.

For the Bachelor's programme "Fisheries Product Technology":

11. The curriculum must include courses related to the graduates' learning outcome that "students are able to identify the characteristics of tuna, crustacean, and seaweed as raw materials for food, health, and industry and able to apply processing technology of these animal and plants and their derivative products on an industrial scale". The respective course descriptions must show that the labour market requirements are considered adequately.

For the Bachelor's programme "Fisheries Resource Utilization":

12. The curriculum must be rearranged and sharpened to provide adequate knowledge and skills in terms of understanding environmentally friendly fishing technology, understanding operating standards, and safety of fishing operations, as well as capture fisheries management and policy. The corresponding programme learning outcomes 6 and 8 must be simplified so that students can realistically achieve them.
13. Subjects such as fishing area mapping, underwater observation, capture fisheries business analysis, and capture fisheries law and policy as well as subjects strengthening the knowledge and skills of graduates in sustainable capture fisheries management, adequate knowledge and skills in the development of

environmentally friendly fishing technology, as well as adequate knowledge and skills in planning and capture fisheries business development must be included in the curriculum.

For the Master's programme "Aquaculture":

14. The profile of the programme must be specified and transparently portrayed. Specific attention must be given to clarity regarding the species focus (fish, invertebrate, algae) as well as the environment focus (fresh water, sea/ocean, brackish water). The structure of the curriculum, choice of courses and order of courses must be changed accordingly.

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

For all study programmes:

1. The programmes should be modularised by merging small courses into larger courses.
2. The links to the fishing industry should be developed, especially for the study programmes "Aquatic Resources Management" and "Fisheries Resource Utilization".
3. Diversity management should be further developed and formalised, e.g. by establishing an equal opportunity officer in the relevant bodies of UB.
4. Information on the outcome of quality assurance measures should be provided more regularly in an aggregated, transparent form and should also be made available in English.
5. UB should take measures to strengthen the mobility of its students.
6. Lecturers should have more time to conduct research. The funding of research should more explicitly support the projects of younger staff members.
7. The format of course description contents should be standardised, and a study course handbook which addresses the needs of the students should be created.
8. UB should monitor the data on the average duration of studies in the programmes and should take measures to shorten the duration, if needed.

For the Bachelor's programmes "Fisheries Agrobusiness" and "Fisheries Product Technology":

9. More practical classes should be included in the curriculum of each programme.

For the Bachelor's programme "Marine Science":

10. The social sciences should be made more visible in the curriculum.
11. The inclusion of the field station should be strengthened.

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

EXPERTS' REPORT

ON THE STUDY PROGRAMMES

- **AQUATIC RESOURCES MANAGEMENT (BACHELOR OF FISHERIES)**
- **FISHERIES PRODUCT TECHNOLOGY (BACHELOR OF FISHERIES)**
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- **AQUACULTURE (MASTER OF FISHERIES)**

OFFERED BY UNIVERSITAS BRAWIJAYA, MALANG, INDONESIA

Online visit to the university: 6-10 June 2022 and Confirmation site visit in Malang: 1-3 August 2022

Panel of experts:

Prof. Dr. rer. nat. Bela H. Buck	Bremerhaven University of Applied Sciences & Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research – AWI (Germany)
Prof. Ari Purbayanto, Ph.D.	IPB University, Faculty of Fisheries and Marine Science (Indonesia)
Professor Dr. Fatema Hoque Shikha	Bangladesh Agricultural University, Faculty of Fisheries (Bangladesh)
Prof. dr. Johan Verreth	Wageningen University & Research (Netherlands)
Dr. Bert Wecker	Förde Garnelen GmbH & Co. KG, Strande (Germany) (representative of the labour market)
Juliane Lukas	Humboldt-Universität zu Berlin, Faculty of Life Sciences (Germany) (student representative)

Coordinators:

Doris Herrmann, Alexandre Wipf, Maria Rentmeister	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 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), on which all Bologna countries agreed as a 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 results from the external review of the study programmes "Aquatic Resources Management" (Bachelor of Fisheries), "Fisheries Product Technology" (Bachelor of Fisheries), "Fisheries Agrobusiness" (Bachelor of Fisheries), "Fisheries Resource Utilization" (Bachelor of Fisheries), "Marine Science" (Bachelor of Marine Science), "Aquaculture" (Master of Fisheries) 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 necessarily can be applied to every programme.

2. Approach and methodology

Initialisation

The university mandated AQAS to perform the accreditation procedure in April 2021. The university produced a Self-Evaluation Report (SER). In November 2021, the institution handed in a draft of the SER together with the relevant documentation on the programmes and an appendix as well as, statistical data on the programmes. 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 6 December 2021. The final version of the SER was handed in January 2022.

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 April 2022. 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 potential needs 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 visits

After a review of the SER, a virtual site visit to the university took place on 6-10 June 2022. Online 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.

Based upon the preliminary findings of the group of experts, and in accordance with the university, an on-site confirmation visit by two representatives of the panel of experts (Prof Purbayanto and Prof. Verreth) was organised from 1-3 August 2022, to get an impression of the laboratories and facilities and to clarify some open questions. The experts discussed specific topics with the heads of programmes and teaching staff of the study programmes and with laboratory staff. This visit concluded by the presentation of their findings to the university representatives, and subsequent adjustment and finalisation of the report.

Reporting

After both site visits 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 5 December 2022. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed conditions.

In January 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, has three campuses, 16 faculties and offers 177 study programmes (Diploma programmes, vocational programmes, Bachelor, Master and PhD programmes) to over 60,000 students. UB employs close to 2,100 lecturers and about 1,900 education staff.

The university purses a *Tridharma* (three pillars) of education, research, and community service. It has defined its vision and mission at university level, as well as at faculty level. The activities of UB are based on its Strategic Planning for the period 2020-2024, under which specific performance targets in the three areas of education, research and community service as well as in institutional management have been set. The university has identified milestones and specific targets to be reached including having 85 % of study programmes internationally accredited by 2039. In the shorter term, UB wants to focus on creating a sustainable environment by improving the quality and quantity of educational and community services, infrastructure and facilities.

The Faculty of Fisheries and Marine Science was founded in 1962 as a College of Marine Fisheries. In 2020/2021 it was home to about 3,400 students. The missions of the faculty are to 1) provide entrepreneurship-based education, research and community service processes to produce academically capable graduates of international standards with such a good personality who can support the development of science and technology in the field of fisheries and marine science, 2) develop science and technology in the field of fisheries and marine science in the productive and environmentally sustainable management and utilisation of fishery resources and 3) foster science and technology in fisheries and marine science to improve the standard of living and welfare of the community. The faculty is made up of three departments (Aquatic Resources Management, Fisheries and Marine Resource Utilisation, Fisheries and Marine Socio-Economic) and offers six undergraduates programmes, one master's programme and one PhD programme – including the six programmes in the present cluster.

IV. Assessment of the study programmes

1. Quality of the curriculum

Bachelor/Master 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

According to the Self-Evaluation Report (SER), the curricula of UB's Faculty of Fisheries and Marine Science are structured following Outcome-Based Education standards. UB states that this approach is considered when designing the curricula as well as setting the learning objectives and achievements, education strategies, learning methods, assessment procedures and the education environment. Each study programme defines Programme Educational Objectives describing the expected profile of the graduates on the basis of which Programme Learning Outcomes are formulated and subsequently Course Learning Outcomes. According to the SER, the programme learning outcomes cover the facets of attitude, knowledge, general skills and specific

skills and are aligned to the Indonesian Qualification Framework (KKNI) at the respective level – itself aligned to the European Qualifications Framework (EQF). The general curricula regulations at the faculty stipulate, among others, that all Bachelor's programmes must include nationally mandated subjects as General Compulsory Courses in the amount of eight credits.

One academic year at UB consists of two semesters, each including 16 weeks of lectures/meetings. Student and staff workload is assessed based on the national SKS credit system, whereby 1 SKS amounts at Bachelor level to 170 minutes for lectures, 220 minutes for laboratory work, 320 minutes for field work, and at Master level to 340 minutes for lectures, 440 minutes for laboratory work, 640 minutes for field work (all covering face-to-face meetings, structured assignments and self-study time). UB provides a conversation table of SKS to ECTS.

General evaluation by the experts: Curriculum of all programmes

The panel of experts has the overall impression that the profiles of the different Bachelor's programmes are not sufficiently clarified and distinctive from each other. (Regarding the specific situation of the Master's programme and its own profile see underneath). For a freshman student it may not be clear which programme would fit best her/his ambitions. The panel of experts believes that the faculty's senior staff must sit together and agree where and how the different programmes really differ from each other, and where they possibly might be integrated (**Finding 1**). It may well lead to the conclusion that the first semesters of some programmes can be integrated into one joint basis. Generally, this would also provide the opportunity to review the credits for some courses / to reconsider the current approach at the faculty since the panel has concerns about the large number of small courses with a low number of credits. The experts generally recommend changing this approach and merging some courses into larger courses (based on the credits) (**Finding 2**).

Generally, the structure of all the programmes must also be revised (**Finding 3**). The committee recommends exploring the feasibility of building the programmes in a funnel shaped manner, with general introductory courses (which also inspire and orient the students on the future professional field) in the first two semesters. It further suggests reconsidering/re-negotiating with the university authorities the position of the national/university/faculty courses within each programme – the panel of experts fully understands that specific courses are mandatory for all universities in Indonesia, the panel solely refers to the timing of the courses within each programme. The current flow of learning of the students might be interrupted or they might get confused regarding the order of the offered courses. Offering courses on Religion, Indonesian Language and Civic Education in more than one semester is also not well justified. From a pedagogic point of view, and from the point of view of a logical curriculum structure, these courses must not necessarily be given in the first semesters – or over several semesters. Subsequently, each programme can fan out into the major topic areas of the programme (related to the agreed profile). In this way, a logical learning path becomes visible for the students. When reviewing the structure special attention must be given to the logical sequence of the courses (basis knowledge at the beginning followed by more in-depth knowledge and then specialised courses at the end).

Additionally, the programme leaders should take this opportunity to check the material provided since there are some inconsistencies between module descriptions, curriculum overview but more importantly between the content of courses and the titles (which also need to be made clear(er)) (**Finding 4**). This is also valid for all programmes under review since the material provided showed inconsistencies. The expert panel welcomes the commitment made during the on-site confirmation visit by the faculty and study programme leaders to fix this problem.

Within the frame set by national regulations, the faculty must try and define clear admission criteria for its programmes. This is particularly urgent for the Master's programme in Aquaculture (see **Finding 22**, Chapter 4).

Finally, UB states that for all programmes students should develop their entrepreneurial skills. Some of the programmes (e.g. Fisheries Agrobusiness) directly refer to this aspect in several courses, which is a positive aspect indeed. Generally, the experts consider that entrepreneurship and entrepreneurial skills cannot be learned via a classical course; it is developed through a combination of skills and attitudes that need to be acquired via learning-by-doing (with proper feedback). Problem-based learning courses, internships etc. can also be instrumental here (see Chapter 3) as well as better facilities (see Chapter 6). In the view of the experts, it is generally acceptable that the programmes do not include subject-specific entrepreneurship courses.

Aquatic Resources Management (Bachelor of Fisheries)

Description

The Bachelor's programme on Aquatic Resources Management (ARM) covers 144 SKS and lasts eight semesters. Over the past five years UB accepted an average of 172 new students every year.

According to the SER, the graduates of this programme are able to continue their higher education at universities with national and international reputation in the field of marine resource management and other relevant fields. They should also be able to develop themselves as professional practitioners and become a resource person for the integrated management of aquatic resources and other relevant fields, as well as apply and develop an entrepreneurial spirit and are skilled in solving complex problems in marine resource management and technology for water conservation, rehabilitation, aquatic resource development and community empowerment. On this basis the persons responsible for the programme have defined ten programme learning outcomes. The graduates should, among others, understand the concept of aquatic resource management, including springs, lake ecosystems, reservoirs, rivers, ponds, ponds and coasts, holistically. They should also be able to realise water resource management plans, including springs, lake ecosystems, reservoirs, rivers, ponds, and coasts as well as detect water quality with management approaches and/or applications and the latest eco-aquatic technology from the molecular to the community level.

Thematically, the courses in the curriculum are divided into two groups: techno-aquatic skills and management approach skills. The curriculum includes six general courses (e.g. Pancasila; Entrepreneurship), ten faculty courses (e.g. English Competence; Etiology; Limnology; Fishing Equipment), 25 study programme specific courses (e.g. Applied Aquatic Ecology; Water Pollution; Biochemistry; Aquatic Resource Conservation; Statistics), 13 electives (chosen from e.g. Aquatic Ecotourism; Geohydrology; SDI Management Policy; Sanitation and Waste Management; Academic Writing), one field work practice and the final Bachelor's thesis.

Experts' evaluation

The ARM programme has described the desired qualifications to be achieved and presented the desired learning outcomes (PEOs and PLOs tables in the SER).

The desired learning outcomes reflect academic/scientific requirements and also the needs of the labour market, especially the labour market in the fields of education and research to fill vacancies for lecturers and researchers, the NGO job market, the job market for a small number of fisheries industries, fishery practitioners, as well as creating their own business (entrepreneurship). Updating of learning outcomes is carried out through intense communication with alumni networks. These alumni are working in various sectors and are asked for their suggestions and input on improving the curriculum and teaching and learning processes. However, industry involvement is still limited to the fisheries industries or NGOs whose alumni work there. The

involvement of large industries such as the oil and gas, marine tourism, and power generation industries do not yet exist – this should be developed as it would benefit both students for their studies and lecturers for their research (**Finding 5**). The evidence provided for the suitability of learning outcomes in the labour market is in the form of a graduate survey conducted through the delivery of questionnaires and also feedback from graduate users, be it government, NGOs, companies/industries, and other business sectors.

The fulfilment of undergraduate learning is stated by the completion of the total number of credits that must be completed by each student in the ARM programme for at least eight semesters and 144 SKS. The learning outcomes are in accordance with the requirements of the Indonesian National Qualifications Framework (KKNI) level 6 and the European Qualification Framework (EQF) level 6. This achievement is shown after completing the programme with a 'mini-thesis writing final project', seminar, and final examination.

The curriculum structure has been prepared with reference to national higher education standards and the results of the forum for higher education leaders in fisheries and marine sciences in Indonesia, to support learning outcomes with a total of at least 144 SKS completed in 8-14 semesters. The curriculum structure consists of subject courses which are grouped into general compulsory subjects/university compulsory courses, faculty courses, study programme courses, and elective courses. For selected subjects, students are given the opportunity to take part in an internship in the MBKM programme.

The curriculum includes general and specific knowledge and skills in the main competencies of the ARM programme, as shown in several courses in the courses on techno-aquatic skills and courses on management approach skills. However, some specific knowledge and skills in the subjects and across subjects provided have not been included in the curriculum. This concerns especially subjects strengthening the knowledge and skills of students in management and conservation of aquatic resources, biotechnology of aquatic resources, and solving complex problems such as cases of managing aquatic environmental pollution as well as the destruction of marine habitat. These topics need to be added to the curriculum (**Finding 6**). Through the policy of independent learning and independent campus (MBKM programme) that is being promoted by the Indonesian government, students can explore additional specific knowledge and skills based on their desires and interests. Within the MBKM programme the ARM students at least in the 6th semester are allowed to take part in learning according to their wishes to deepen certain fields of knowledge in the disciplines they are engaged in or inter/intra-disciplinary outside the study programme but still within the same campus.

Reviews and modifications of the curriculum are carried out on a 4-5 years-cycle through a mechanism that has been regulated by the programme/faculty by involving relevant stakeholders. This review and modification of the curriculum are expected to improve the quality of the ARM programme. Additional suggestions for improvement are included in this report.

The ARM programme does not organise distance learning programmatically, but since the Covid-19 pandemic in early 2020, UB has organised internet-based online learning following the regulations set by the government. This programme organises part-time learning or internships which have now become a government-driven learning model to be applied in every university in Indonesia through the MBKM programme. During the online visit, it was explained that the ARM programme provides opportunities for every student to carry out an internship in the MBKM programme.

The ARM programme has documented all further elements of the curriculum (courses/modules) including their functions, whether they are mandatory or optional. The idealised typical course plan is available in the form of a semester learning plan for each course. The total workload of the programme has been allocated correctly and transparently to the different courses/modules. Likewise, the correct number of credits has been given for all elements of the curriculum as described in the SER document and supporting documents. However some material still needs to be checked since there are inconsistencies as mentioned at the beginning of Chapter 1 (see **Finding 4**).

Conclusion

The criterion is partially fulfilled.

Fisheries Product Technology (Bachelor of Fisheries)

Description

The Bachelor's programme on Fisheries Product Technology (FPT) covers 144 SKS and lasts eight semesters. Over the past five years UB accepted an average of 169 new students every year.

Following graduation, the students should be able to plan, manage and develop a fishery product business/industry and be able to plan policies and regulations on food ingredients from the fisheries sector. Graduates should also be able to apply quality standards of fishery product management and plan and implement a learning system in the field of Fisheries Product Technology. Further, graduates should be able to apply the principles and concepts of biotechnology in the management of fishery products and plan and carry out the work process of the fishery product industry. Derived from this graduate profile UB formulated twelve programme learning outcomes, according to which the graduates should, among others, have entrepreneurial skills and be able to explain fisheries and marine systems. They should also be able to treat waste and utilise by-products of the fishing industry and analyse the chemical, physical and sensory characteristics of tuna, crustaceans, and seaweed and their derivative products.

The courses of the curriculum are divided into four thematic groups: safety and microbiology of aquatic commodities, quality management and regulation of aquatic commodities, marine commodity analysis, processing and engineering of aquatic commodities. The curriculum includes six general courses (e.g. Pancasila; Entrepreneurship), six faculty courses (e.g. English Competence; Aquaculture Basics; Introduction to Fisheries), 30 study programme specific courses (e.g. Fishery Products Biochemistry; Food Additives; Fish Nutrition; Sensory Analysis of Fishery Products; Scientific Method), 14 electives (chosen from e.g. Introduction to Quality Fish Products; Regulations and Policies on Food; Fishery Industrial Machines and Tools; Fishery Counselling and Communication; Digital Business) as well as one field work practice and the final Bachelor's thesis.

Experts' evaluation

The desired qualifications to be achieved are presented as intended learning outcomes, however there are some shortcomings. Subject specific elements are included until the 5th semester. Among 41 courses offered up to this level there are five general compulsory courses/university compulsory, four faculty courses and one elective course – the rest are department/study programme courses. In the other three semesters of the study programme eleven elective courses are offered in the 6th semester and two elective courses in the 7th semester. Practical classes are not offered for the subjects like Aquaculture Basics, Introduction to Fishery Agribusiness, Fishery Process Engineering, Process Design, Scientific Method, Fisheries Research Design Handling of Fishery, Fishery Products Industry, Material Microscopic Analysis. For elective courses there are also no practical classes offered. Yet, some of these courses might be more understandable to students if they would get the opportunity to practice the obtained knowledge in the practical classes. The experts therefore suggest including more practical classes in the curriculum (**Finding 7**). In this study programme the courses are offered in four groups; under the first group four courses are on safety and microbiology of aquatic commodities, seven courses are on quality management and regulation of aquatic commodities. Eleven courses are on marine commodity analysis and 16 courses are on processing and engineering of aquatic commodities.

The intended learning outcomes reflect academic/scientific requirement but lack to some extent in labour market requirements. For example, graduate learning outcomes (GLOs) for the study programme show that students are able to identify the characteristics of tuna, crustacean, and seaweed as raw materials for food, health,

and industry and able to apply processing technology of these animal and plants and their derivative products on an industrial scale. But the courses mentioned in the curricula do not reflect clearly these topics. The corresponding courses need to be changed to reflect the intended learning outcome at programme level – it also needs to be clear in the course descriptions how the requirements of the labour market are considered (**Finding 8**). The intended learning outcomes are updated according to current developments; this is carried out using input from stakeholders, alumni, and students through the information collection process. Information was also collected from alumni through the Forum Group Discussion (FGD) by inviting alumni and stakeholders. The graduate profile and GLOs are published in the faculty's education manual. These two are in close relationship; the graduate profile is proof for the intended learning outcomes. This published information shows the activities of the graduates in the relevant field, their success, achievements etc. The achievement of the learning outcomes by the students is demonstrated upon the completion of the programme by a final thesis with some requirements: students have accumulated at least 144 Indonesian credits, they have completed the internship and thesis with a minimum grade of B and have submitted reports and articles to the university. Generally, the programme and its learning outcomes correspond to the requirements of the National Qualifications Framework at level 6, itself aligned to EQF level 6.

Regarding the curricular structure, as compulsory courses there are five types of courses namely: Course on Personality Development (MPK or PD), Course on Creative Skill Development (MKB or CSD), Course on Scientific Skill Development (MKK or SSD), Course on Socialization and Community Life (MBB or SCL), Course on Occupational Behaviour (MPB or OB). They are designed by UB and support the achievement of the intended learning outcomes and the learner's progression. With all these, if more practical classes or field visits could be included, the learner's progression would be further strengthened (see above). The curriculum covers subject-specific and cross-subject knowledge as well as subject-related, methodological and general skills in a big part but why tuna, crustacean, and seaweed processing technology are mentioned is not clear (see above).

In the curriculum the order of some courses seems not appropriate/not offered in the appropriate semester – as mentioned at the beginning of Chapter 1 (see **Finding 3**). All curricular elements (courses/modules) including their functions, their compulsory or elective character and their usage/exclusiveness are documented. An idealised typical course plan is available. However, the title of some courses is not well understood by the experts, for example the courses Food, Food Additives, Operation Unit. These are not detailed enough as course titles – this needs to be checked for all courses and corrected accordingly (see **Finding 4**).

The FPT study programme carries out a curriculum review based on the Decree of the Minister of National Education Number 232 of 2000 concerning Guidelines for Preparation of Higher Education Curriculum and Assessment of Student Learning Outcomes, Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education. The internal curriculum evaluation and upgrade process is carried out periodically based on the annual evaluation of the Faculty Education Guidelines Book. This internal evaluation and update emphasise the suitability and the depth of the lecture material provided with the learning outcomes. Adjustments or minor curriculum construction at the programme level are also carried out when the university or faculty issues a new policy. One example of the policy implemented is the merging of student community service (three credits) and fieldwork (three credits) into internships (four credits) for accelerating the study period. In addition, some course names were also adjusted based on the National Curriculum agreed upon by all Fisheries Products Technology study programmes in Indonesia. The programme includes internships, and it is reflected adequately and transparently defined in the design of the curriculum.

The total programme workload is allocated as follows: eight credits for general compulsory courses, 14 credits for university compulsory courses and a minimum of 122 credits for specialty courses with a maximum of 138 credit. Among these courses, compulsory courses of the study programme cover 90 credits, on the other hand 32 credits are allocated to elective courses of the study programme. The total programme workload is

correctly and transparently allocated to the different courses/modules. A correct number of credits is assigned to the elements of the curriculum. In some cases, there is an opportunity to review the credits for some courses/ to reconsider the current approach at the faculty (teaching a large number of courses with each a low amount of credits) (see **Finding 2**).

Conclusion

The criterion is partially fulfilled.

Fisheries Agrobusiness (Bachelor of Fisheries)

Description

The Bachelor's programme on Fisheries Agrobusiness (FA) covers 144 SKS and lasts eight semesters. Over the past five years UB accepted an average of 167 new students every year.

According to the graduate profile, the students should, upon completion of the programme, be able to apply the socio-economics of fisheries and entrepreneurship to act as entrepreneurs, business designers and entrepreneurial policy-makers. They should also be able to design, implement, evaluate and develop scientific-based learning and have science and technology skills in the socio-economic field of fisheries and plan, implement, analyse and interpret research results, and publish research results. They should further master, apply and utilise knowledge and technology in the socio-economic field of fisheries and show a balance between technical knowledge and managerial knowledge in professional work. Finally, they should be able to identify, analyse and formulate policies related to the socio-economic field of fisheries and have the ability to analyse company/banking finances, manage fishery resources, manage human resources and carry out management functions and cooperation. On this basis the persons responsible for the study programme have formulated eight programme learning outcomes.

The curriculum courses are divided into three thematic groups: economic and resource management skills, business and entrepreneurial skills, fisheries and marine social and institutional expertise. The curriculum covers six general courses (e.g. Pancasila; Entrepreneurship), seven faculty courses (e.g. Computer Skills; Handling of Fishery Products; Introduction to Fisheries), 30 study programme specific courses (e.g. Fisheries Law; Macro Economics; Fisheries Development Policy and Strategy; Operation Research; Social Research Methods), 14 electives (chosen from e.g. Economic Sociology; Institutional Economics; Maritime Anthropology; Digital Business; Export-Import) and one field work practice as well as the final Bachelor's thesis.

Experts' evaluation

The desired qualifications to be achieved are presented as intended learning outcomes but there are some practical shortcomings. Subject-specific elements are included until the 5th semester. Among 43 courses offered up to this level there are six general compulsory courses/university compulsory, five faculty courses and two elective courses – the rest are department/study programme courses. In the other three semesters of the study programme ten elective courses are offered in the 6th semester and two elective courses are offered in the 7th semester. Practical classes are not offered for the subjects like Fishing Equipment, Aquaculture Basics, Introduction to Fishery Agribusiness, Handling of Fishery Products, Fisheries Institutions and Cooperatives, Fisheries Extension and Communication, Fisheries Community Empowerment, Fisheries Anthropology and Digital Business. Yet, some of these courses might be more understandable to students if they would get the opportunity to practice the obtained knowledge in the practical classes. Additional practical classes should be offered in the curriculum (**Finding 7**). In this study programme the courses are offered in three groups; under the first group seven courses are on Economic and Resource Management, six courses are on Business and Entrepreneurial Skills and seven courses are on Fisheries and Marine Social and Institutional Expertise.

The intended learning outcomes reflect both academic/scientific and labour market requirements to a large extent, though there is some room to include more topics related to labour market in the upcoming curriculum review by the university. The intended learning outcomes are updated according to current developments; this is done by gathering input from stakeholders, alumni, and students through the information collection process. The information collection process from alumni was also carried out using the Forum Group Discussion (FGD) by inviting alumni and stakeholders. The graduate profile and graduate learning outcomes are published in the faculty's education manual. These two are in close relationship; the graduate profile is proof of the achievement of the intended learning outcomes. Generally, the programme and its learning outcomes correspond to the requirements of the National Qualifications Framework at level 6, itself aligned to EQF level 6. The achievement of the LOs by the students is demonstrated upon the completion of the programme by a final thesis with some requirements: students have accumulated at least 144 SKS, they have completed the internship and thesis with a minimum grade of B and have submitted reports and articles to the university.

Regarding the curricular structure, there are five types of compulsory courses namely: Course on Personality Development (MPK or PD), Course on Creative Skill Development (MKB or CSD), Course on Scientific Skill Development (MKK or SSD), Course on Socialization and Community Life (MBB or SCL), Course on Occupational Behaviour (MPB or OB). They are designed by UB and support the achievement of the intended learning outcomes and the learner's progression. With all these, if more practical classes or field visits could be included the learner's progression would be further strengthened (see above).

The curriculum covers subject-specific and cross-subject knowledge as well as subject-related, methodological and general skills in a large part. In the curriculum the order of some courses seems not appropriate/not offered in the appropriate semester (see **Finding 3**). The curricular elements are defined, even though some clarifications are required (see **Finding 4**).

The changes carried out to the programme are based on the processes and procedures defined at university and faculty level. They consider the national guidelines issued by the ministry and are documented in the Faculty UB Education Guidelines Book. The review is carried out periodically and it emphasises the suitability and the depth of the lecture material provided with the learning outcomes. Adjustments or minor curriculum construction at the programme study level are also carried out when the university or faculty issues a new policy. The programme includes internships, and it is reflected adequately and transparently defined in the design of the curriculum.

The total programme workload is allocated as follows: twelve credits for general compulsory courses or university compulsory courses, ten credits for faculty courses and 76 for compulsory courses. The rest of the credits are for elective courses, internship, research and thesis. The total programme workload is allocated correctly and transparently to the different courses/modules. A correct number of credits is assigned to the elements of the curriculum – a general check by the faculty as stated at the beginning of Chapter 1 would be welcome (see **Finding 2**).

Conclusion

The criterion is partially fulfilled.

Fisheries Resource Utilization (Bachelor of Fisheries)

Description

The Fisheries Resource Utilization (FRU) Bachelor's programme covers 144 SKS and lasts eight semesters. Over the past five years UB accepted an average of 166 new students every year.

The graduates of the programme should be able to apply techniques for obtaining, processing and interpreting capture fisheries data and information and be able to plan policies and regulations in the field of capture fisheries. They should also be able to apply science and technology in the field of capture fisheries and plan and develop capture fisheries businesses. On the basis of these programme educational objectives the persons responsible for the study programme have defined ten programme learning outcomes. The aims being, among others, to train the students to be able to apply spatial and in-situ techniques to identify potential fishing grounds, to identify materials, design and manufacture fishing gear and fishing aids and to apply environmentally friendly fishing technology.

The courses of the programme are divided into three thematic groups: fisheries biology, fisheries technology, fisheries management. The curriculum is made up of six general courses (e.g. Pancasila; Entrepreneurship), nine faculty courses (e.g. Computer Skills; Aquaculture Basics; Limnology), 27 study programme specific courses (e.g. Fish Behaviour; Fishing Boat Engine; Hydrodynamics; Fisheries Bioeconomy; Research Methods), nine electives (chosen from e.g. Fishing Boat Design; Fisheries Geospatial Analysis; Seafaring Services; Postharvest Physiology of Fishery Products; Social Statistics) as well as a field work practice and the Bachelor's final thesis.

Experts' evaluation

The FRU programme has described the desired qualifications to be achieved and presented the desired learning outcomes (PEOs and PLOs tables). In the view of the experts the desired learning outcomes do not *fully* reflect the academic/scientific requirements and also the needs of the labour market, especially the job market in the field of capture fisheries management. This is because the designed learning curriculum has not been able to accommodate PLOs, especially for aspects of general skills and specific skills. Thus, it is necessary to rearrange and sharpen the curriculum to provide adequate knowledge and skills in terms of understanding environmentally friendly fishing technology, understanding operating standards, and safety of fishing operations, as well as capture fisheries management and policy. PLO 6 and PLO 8 need to be simplified so that students can realistically achieve them (**Finding 9**). The updating of the learning outcomes is carried out through intense communication with networks of alumni who are working in various sectors. They are asked for their suggestions and inputs on improving the curriculum and teaching and learning processes. Yet, following the discussions during the digital site visit, the experts believe that the involvement of the capture fisheries industry is still minimal – this should be developed and strengthened to benefit both students and lecturers (**Finding 5**). Evidence provided for the compatibility of learning outcomes with *some* labour markets is in the form of graduate surveys conducted through the delivery of questionnaires as well as feedback from graduate users, particularly government, NGOs, and other business sectors.

The fulfilment of undergraduate learning outcomes is shown by the completion of the number of credits by each student in the FRU programme for at least eight semesters or 144 SKS. Learning outcomes are in accordance with the requirements of the Indonesian National Qualifications Framework (KKNI) at level 6 and the European Qualification Framework (EQF) at level 6. This achievement is shown after students complete the programme with a 'mini-thesis writing final project', research results seminar, and final exam.

The curriculum structure of the programme has been prepared with reference to the national standard of higher education curriculum and the results of the deliberations of the forum for higher education in fisheries and marine sciences in Indonesia, to support the achievement of learning outcomes with a total of 144 SKS

completed in at least eight semesters. The curriculum structure consists of courses that are grouped into general compulsory courses/university compulsory courses, faculty courses, study programme courses, and elective courses. For the elective course, students are given the opportunity to take part in an internship in the MBKM programme. In contrast to the ARM programme, the FRU programme does not explain the implementation of the policy of independent learning and independent campuses in the SER; the general framework as described during the site visit is however acceptable in the view of the experts. The MBKM programme provides opportunities for students to participate in learning according to their wishes to deepen certain fields of knowledge in the disciplines they are engaged in or inter/intra-disciplinary outside the study programme but still in the same campus.

The curriculum includes general and specific knowledge and skills in the main competencies of the FRU programme, as shown in several courses on fisheries biology, courses on fishing management, and courses on fishing technology. However, specific knowledge and skills gained from learning courses (such as fishing area mapping, underwater observation, capture fisheries business analysis, and capture fisheries law and policy) have not been included in the curriculum. This is also true for elements strengthening the knowledge and skills of graduates in sustainable capture fisheries management, adequate knowledge and skills in the development of environmentally friendly fishing technology, as well as adequate knowledge and skills in planning and capture fisheries business development. These aspects must be included in the curriculum (**Finding 10**).

The review and modification of the curriculum are carried out on a 4-5 years-cycle through a mechanism that has been regulated by the programme/faculty by involving relevant stakeholders. It is hoped that this curriculum modification can improve the quality of the FRU programme. Additional suggestions for improvement are included in this report.

The FRU programme does not organise distance learning programmatically, but since the Covid-19 pandemic in early 2020, UB has organised internet-based online learning following the regulations set by the government. This programme organises part-time learning or internships which have now become a government-driven learning model to be applied in every university in Indonesia through the MBKM programme. In future the programme could describe the implementation of MBKM in more details.

The FRU programme has documented all elements of the curriculum (courses/modules) including their functions, whether they are mandatory or optional. The idealised typical course plan is available in the form of a semester lesson plan for each course. The total workload of the programme has been allocated correctly and transparently to the different courses/modules. Likewise, the correct number of credits has been given for all elements of the curriculum as described in the SER document and supporting documents.

Conclusion

The criterion is partially fulfilled.

Marine Science (Bachelor of Marine Science)

Description

The Bachelor's programme Marine Science covers 144 SKS and lasts eight semesters. Over the past five years UB accepted an average of 173 new students every year.

According to the graduate profile, the graduates should be able to suggest solutions to problems in the coastal and marine fields, and to plan and develop science and technology in the field of exploration and conservation of marine resources. Further, they should be able to set, apply, and develop marine technology. Finally, they should be able to propose policies and manage marine activities as well as be able to plan and develop businesses in the marine sector. Specifically, the persons responsible for the programme have defined nine

programme learning outcomes. Thus, the students should, at the end of their studies, be able to, among others, apply systematic and innovative thinking in the development of science and technology in the field of marine science and fisheries and be able to design, implement, report and deliver research results both orally and in writing independently.

The courses of the curriculum are divided into four thematic categories: oceanography expertise, marine resource exploration expertise, marine biotechnology expertise, coastal and marine ecosystem conservation expertise. The curriculum covers six general courses (e.g. Pancasila; Entrepreneurship), four faculty courses (e.g. Ichthyology; Introduction to Oceanography), 28 study programme specific courses (e.g. Marine Research Statistics; Marine Pollution; Coralogy; Tropical Marine; Marine Acoustics), seven electives (chosen from e.g. Marine Biological Industrial Biotechnology; Research Bioethics; Coastal Ecosystem Restoration; Marine Law; Marine Anthropology) as well as one field work practice and the final Bachelor's thesis.

Experts' evaluation

Information on the intended qualifications and learning outcomes is sufficiently well presented in the programme description for Marine Science. The intended graduate knowledge and skills are clear and comprehensible. The intended learning outcomes reflect both academic and scientific requirements. The qualifications of the graduates are described as well as how these fit into the market demand, especially in research.

This degree programme is aligned to a different labour market when compared to the other programmes in this accreditation procedure: namely not to (manufacturing) industry or fisheries/aquaculture, but rather to the field of research and consulting as well as employers with a sustainable ecosystem approach (NGOs, nature conservation, etc.). When presenting the degree programme, the intensive exchange with different target groups was stated, namely not only the alumni, but also the above-mentioned employers as well as scientists from current research.

From the point of view of the experts, the academic degree corresponds to the learning outcomes and the requirements of the corresponding Bachelor level of the European Qualifications Framework (EQF), which are completed through corresponding examinations at the end of the study programme or through English tests at the beginning of the study programme.

The curricular structure of the programme supports the achievement of the intended learning outcomes and the learning progress of the learners through a very well designed, consecutively arranged and complete course content, which only needs to be adapted to a very limited extent. For example, the "Social Science Aspect" is present, but not clearly displayed as a specific subject (**Finding 11**). This is the case with three other disciplines that are 'hidden' under other subject titles (e.g. Marine Ecology, Climate Change, Biodiversity). This should be presented more uniformly and clearly. Further adjustments include the clarification of the course titles (see **Finding 4**), in this case "non-fishing exploration and exploitation" to "fishery exploration and exploitation".

Finally, it should also be mentioned that the content of the field station should be better integrated into the programme. During the on-site confirmation visit it became clear that students spent very little time at the Marine Station (one to three days at a time) and that groups were too small to use the station as a *research station* – currently the station is rather used as a *sampling station*. In the view of the experts the university does not use the full potential of the Marine Station and misses out on the opportunities that it could offer. It would be good and beneficial for students e.g. to conduct long-term data collection on site. The equipment of the Marine Station is also very limited (no laboratory staff on site, small laboratory space, not yet supported by adequate equipment) (see **Finding 28**, Chapter 6). Generally, the inclusion of the field station in the programme should be strengthened (**Finding 12**). It would also be good to document this transparently in the relevant course descriptions. Further, the committee was surprised that learning to swim and to dive was part

of the formal curriculum. Obvious personal skills such as these should be offered outside the curriculum, as it blocks space for other, more important content.

The Marine Science programme has documented almost all (for the missing parts, see above) elements of the curriculum (courses/modules) including their functions, whether they are compulsory or optional. The ideal curriculum is available in the form of a semester learning plan for each course. The total workload of the study programme is well structured and transparently distributed among the various contents and modules. All credits are allocated to these respective elements in a comprehensible way, as described in the SER document and the supporting documents.

Conclusion

The criterion is partially fulfilled.

Aquaculture (Master of Fisheries)

Description

The Master's programme Aquaculture covers 40 SKS and lasts four semesters. Over the past five years UB accepted an average of 37 new students every year.

According to the programme educational objectives the graduates should be able to plan and apply solutions to problems in aquaculture, convey learning in aquaculture, plan and manage aquaculture activities as well as apply aquaculture techniques. There are nine programme learning outcomes for the Master's programme according to which the students should be trained to manage and develop research that can be applied and disseminated in scientific publications, proceedings and national and international scientific journals. A further aim of the programme is for students to be able to develop new concepts and knowledge in sustainable aquaculture systems and best management practices of aquaculture and to develop new concepts and knowledge in disease prevention and management of aquatic animal health.

In the curriculum there are four topical areas of expertise: fish reproduction, fish disease, aquatic environment, fish feed and nutrition. The curriculum is made up of five compulsory courses (i.e. Cultivation Development; Aquatic Microbiology; Physiology of Aquatic Biota; Research Methodology; Colloquium), two compulsory courses of interest (chosen from e.g. Breeding and Reproduction of Aquatic Animals; Fish Disease and Health Management; Aquatic Bioindicators and Toxicology; Advanced Fish Nutrition), three electives (chosen from e.g. Hatchery Technique Water Quality Management; Modelling of Water Management System; Aquaculture Engineering; Fishery Bioactive) as well as one field study and the final Master's thesis.

Experts' evaluation

The Aquaculture study programme deals with the world's fastest growing food production sector. Indonesia, in particular, plays a very important role in the world market based on its production.

By scrutinising the study programme, some very interesting content in courses/modules were observed. It is, however, unclear what exactly is being studied. Taking the Gantt chart from the SER as a basis, there is hardly any information about the content of the programme. For example, regarding the credit points, it is not easy to allocate them to each semester/course. According to this chart, in the 4th semester there are only 2 SKS, which is somewhat strange and might be due to a typo.

Since there is an Aquaculture Bachelor's programme at UB (which is not part of this accreditation procedure), it seems that many important course contents are already offered in the Bachelor's programme. This in turn leads to the fact that some students who have studied aquaculture in the Bachelor's programme at UB have an obvious advantage over those students who come from other Bachelor's programmes. This also leads to

the questions: what is the precise required previous knowledge to be admitted to the programme? And how does the programme deal with students with a slightly deficient pre-knowledge at entrance? What do these students have to catch up on and do these students manage this extra workload during their studies in the Master's programme? (Regarding entry requirements see also Chapter 4).

Another very important point is, which type of aquaculture (in which water bodies) is the main focus of the programme – is it fresh, brackish, marine waters? Also the focus on the species groups is not clear, such as fish, crustaceans, and (very important) seaweed, to name a few. And is this broad content of aquaculture species/water bodies supported by the necessary infrastructure and staff expertise at UB?

For the expert group it is equally unclear who the target group in the job market is for graduates of the Aquaculture Master's programme. This can only be answered clearly if the contents (above) are more precisely identified.

Unfortunately, the material provided by UB, and the discussions conducted during the digital site visit as well as during the on-site confirmation visit in Malang could not clarify all these important aspects for the expert panel. This study programme certainly has its justification, but a better focus on the actual expertise and goals is necessary. UB must specify the profile of the programme and portray it transparently. Specific attention must be given to clarity regarding the species focus as well as the environment focus. The structure of the curriculum, choice of courses and order of courses must be changed accordingly (**Finding 13**).

Conclusion

The criterion is partially fulfilled.

2. Procedures for quality assurance

Bachelor/Master 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

UB sees quality assurance as a contributing instrument in reaching its university-wide strategic goals. The main body responsible for quality assurance at university level is the Educational Development and Quality Assurance Office. It is responsible for the development of an internal quality assurance system in the academic field. A separate unit, the UB Quality Assurance Centre, has been created and tasked with carrying out quality control, quality assurance and quality improvements in academic and non-academic fields and is assisted by Quality Assurance Groups at faculty level and Quality Assurance Units at department level.

External quality assurance at UB takes the form of national compulsory accreditation (according to the SER the six present programmes have been accredited either "excellent" or with "A" grade nationally), voluntary international accreditation, certification and other recognitions.

Internal quality assurance at UB is based on an OSDAT-system: 1) develop a quality assurance organisation (O); 2) develop a system in the form of policy and document system (quality standards, quality manuals, procedure manuals and work instructions) (S); 3) implement the system (socialisation and work reference) (D); 4) conduct an Internal Quality Audit (one cycle of quality assurance) (A); 5) follow-up (T). The internal quality audit is conducted at faculty and at programme level every year by the UB Quality Assurance Centre in cooperation with the Quality Assurance Groups at faculty level and Quality Assurance Units at department level. It includes system audits and performance audits. The results of the internal quality audits are reported to the Rector for possible corrective action. Further feedback on the programmes is gathered through students' evaluations of the performance of the lecturers each semester, through alumni tracer studies and through a general complaints, feedback and suggestions mechanism (UB Care). Evaluation results are available on the central university platform and can be accessed by the lecturers.

The procedure for curriculum development and review includes the definition of graduate profiles / programmes educational objectives considering the feedback of professional associations and alumni, benchmarking results as well national regulations including the National Standards for Higher Education. According to the SER, the programme learning outcomes and course learning outcomes are aligned to one another and consider the vision and mission of the faculty. The process of curriculum development is coordinated by the Centre for Educational Relevance Development within the Educational Development and Quality Assurance Office. UB states in its SER that a curriculum development cycle lasts approximatively 4-5 years. In this process the curriculum design and the formulated learning outcomes are to be assessed and the teaching materials and curriculum structure mapped and checked in view of their comprehensiveness. According to the SER, UB also uses feedback from alumni gathered in the alumni association, the results of the internal quality audits, the results of the annual management review and discussions at regular study programme meetings to strengthen the quality of its curricula.

UB has provided data on the number of applicants and of students in the six programmes as well as data on drop-out rates.

Experts' evaluation

Based on the evidence provided in the SER documentation and gathered through interviews during the virtual site visit, the experts are able to confirm that UB is committed to the continuous improvement of its study programmes and services. As such, UB is regularly undergoing internal quality assessments (by the autonomous Educational Development and Quality Assurance Office) as well as external accreditations (most recently in 2018 by the National Accreditation Agency for Higher Education of Indonesia, BAN-PT). In addition, UB has undertaken international benchmarking against the Times Higher Education's performance indicators (most recently in 2022 achieving the 1201+ position on the global ranking and 501+ within Asia, thereby equalling other leading Indonesian universities). UB's commitment to quality assurance is further demonstrated by its Strategic Planning Outline (2019-2039). This plan contains clearly defined milestones and indicator-based strategies to raise the university's profile through international accreditation as well as improving the quality and quantity of educational and community services, infrastructure, and facilities. Overall, the SER exhibits a close concord between the vision, mission, objectives (as to expected learning outcomes, research performance, community services), core values and expected graduate attributes.

Structurally, UB created a comprehensive Quality Assurance System on three levels: the university, the faculty and the department. The panel of experts appreciates several positive aspects of the system that have been successfully implemented, for example the regular monitoring and evaluation of UB's academic and student services through annual internal audits as well as the evaluation of study programmes and teaching performance through student feedback and alumni tracer studies. Further, the strategy for quality assurance supports academic integrity and helps to avoid discrimination against students and staff. The university is

committed to academic integrity as a core value and acknowledges that it is important to its reputation and credibility. Yet, it was not clear for the expert committee to which extent systematic procedures are set in place to prevent academic misconduct; such procedures should be made more visible and transparent (**Finding 14**).

Stakeholders, such as administrators, academic staff, students and alumni are involved in one way or another with the review of programmes at UB, and the results are communicated to them. However, at the moment, feedback from contacts within industry and society as well as foreign experts is not systemically considered. In addition, the panel considers the formal role of students within the quality management procedures and bodies to be too limited. Instead, the panel of experts urges for students to be actively involved in the regular review of programmes as well as other quality assurance procedures on faculty and university level through e.g. (voting) representatives (**Finding 15**). Further, the support of special interest groups (e.g., students and staff with special needs) requires further formalisation, including active involvement in decision-making processes, for example through the inclusion of an equal opportunities officer (**Finding 16**).

The experts can also positively evaluate the process of developing well-thought programme visions and objectives as well as their subsequent translation into desired skill acquisition and course content. Course syllabi are updated yearly, if any changes are necessary, and include course description, course elements, contact hours, and learning outcomes formulated as competences, evaluation methods and grading. In the interviews during the site visit, it emerged that students are generally satisfied with the teaching, however online learning during pandemic conditions has brought up new challenges, for example due to connection issues. With student feedback surveys and course development being performed only once a year, there is not much flexibility to adjust programmes in accordance with such short-term developments. UB should consider whether mid-semester surveys could be useful to allow to respond to results while courses are still running.

In line with UB's strategy to achieve a more prominent international reputation, information on the outcome of quality assurance measures must be provided more regularly in an aggregated, transparent form also in English (**Finding 17**).

Conclusion

The criterion is fulfilled.

3. Learning, teaching and assessment of students

Bachelor/Master 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

According to the SER, students are encouraged to take an active role in learning activities. Lecturers are described as facilitating the learning process, motivating the students, giving them tutorials and providing feedback on the attainment of the learning outcomes. UB indicates that it uses various methods such as project-based learning and case-based methods to foster student-centred learning. Further examples include small group discussions, cooperative and collaborative learning, role-play and simulation, discovery learning, and problem-based learning. According to the SER, the curricula also use a blended-learning method with the Student Active Learning (SAL) approach. Learning is carried out both synchronously and asynchronously, both

face-to-face and online using the virtual learning environment/online learning platform of UB. Next to classroom activities UB also mentions practical activities, both field practice and laboratory practice, which according to UB are included in at least three-fourths of the courses in the curricula of the six study programmes under review. UB cooperates with external organisations, public authorities, research centres and industry in order to facilitate out-of-campus activities. Further, UB states that participation in research activities and community service is an integral part of the students' learning process.

Assessment takes the form of structured activities, quizzes, midsemester exams, final exams and practicums. Especially midterm (week 8) and final exams (week 16) are regulated in the general academic guidelines and individual steps are set in a specific Standard Operating Procedure. Structured activities can be individual or group assignments; assessment of fieldwork is also carried out. According to UB, it also offers the possibility to re-take an exam, either through special exams, makeup tests and/or remedial exams.

The students' grades are combined from attendance records, assignments, midterm exams, final semester exams, practicum, group work and presentations. A general complaints procedure has been defined at UB; complaints related to student learning assessments should be submitted to the course manager.

Experts' evaluation

The information provided by the SER gives an idealistic picture regarding the student-centred learning environment at the faculty. However, the sheer number of students and the high student-staff ratio may reduce the flexibility of the lecturer to adapt her/his instruction method to the individual student needs, the time to spend on each individual student and thus, overall may reduce the effectiveness of the intended instruction method. Even more, the high student numbers and the limited availability of large sized class- and practical-rooms force the faculty to request teachers to split the students in smaller groups and to repeat their lectures/practical lab exercises etc. This is in the view of the experts extremely ineffective and limits the possibility of the lecturer to attend to the needs of individual students, and to coach them in their individual learning process, which is so important in a real student-centred learning environment. Thus, UB needs to take specific measures to guarantee that a student-centred approach can be implemented in reality (**Finding 18**), e.g. by raising the number of staff/availability of staff, delivering common basic courses, providing larger facilities, using more diverse teaching and learning methods (see underneath and Chapters 5 and 6).

The university has tried to solve this issue by introducing teaching methods which stimulate self-study and self-exploration by the students, such as cooperative learning, group discussion, role-play etc. However, these methods require a certain level of maturity of the students and make them more effective during the last four semesters of a Bachelor's programme. The question is to which extent the massive classroom/classical instruction teaching imposed by the high annual number of student entrees matches with the intended student-centred learning environment. One solution to enable a more individual learning path would be to provide a broad set of elective courses in the second half of each study programme. Students are also allowed to select themselves a topic for their thesis and/or internship research. Generally, it remains somewhat difficult for the expert committee to see how the coherence of each student's choice of electives is guaranteed (because of the sheer number of students) even though the advisory support system through the academic advisor is generally good, as indicated underneath (see Chapter 6) and as confirmed during the confirmation site visit following the virtual site visit.

According to both students and lecturers, the virtual learning environment for online education seems to satisfy its users and seems to work well. This may alleviate the burden of the high student numbers (in relation to the staff size) a bit but will not solve the question marks the experts have regarding the reality/implementation of the intended strong student-centred learning environment.

Yet, on the positive side, there is a lot of attention at the faculty for community service and internships in industry or societal organisations, such as public administration, regional authorities or NGOs, which seem to be well received and appreciated by the involved students and stakeholders. The MBKM programme is an attractive opportunity in this regard. This counteracts somewhat the weak student-centred learning environment of the first half of the Bachelor's studies. It supports the various programmes at the faculty in responding to individual student needs, and in providing some flexibility for individual learning paths, which are badly needed indeed. Overall, the programme of semesters 5-8 at Bachelor level will certainly motivate the individual student and help to achieve the intended learning outcomes. The panel of experts suggests the programme directors further develop this line by putting even more emphasis than today on problem-based teaching and learning, which is a strong instrument to boost the student's motivation and to enhance her/his affinity with the professional reality (see above).

Given this dichotomy in the student-centred learning environment, there is no structural guarantee that each student realises the intended interlace of theory and practice. During the site visit some employers emphasised in the discussions that graduates of UB still need a strong in-house training before they are really productive in their organisation. Others had a more positive experience. This demonstrates that the study programme management has insufficient control over the extent to which students achieve also practical/professional skills besides theoretical knowledge. Based on the information given by the stakeholders, the productivity of the students must be improved by including more hands-on experience within the course modules given throughout all semesters (**Finding 19**). Assessment regulations and procedures seem well defined and are available to all students. Regulations for the internships are also well defined. The internship assessment from companies/industry/SMEs/agencies where the internship takes place have the following criteria and weights: Disciplined (20%), Attitude (20%), Cooperation with others (20%) and Active participation (40%) – for the experts it is surprising that professional content/professional performance is not assessed during the internship; it would be good for UB to make this angle more visible and verifiable in the assessment (**Finding 20**). Actually, the university has addressed well all administrative procedures regarding their study programmes and student services. Examination requirements are transparent and clear. Exam questions are, at least on paper, directly related to the course learning outcomes. It remains somewhat unclear to which extent the ultimate questions really assess higher cognitive goals. Therefore, the experts consider it as important that the programmes foster more strongly the development of conceptual thinking by the students (**Finding 19**).

According to the information given during the online site-visit, students have the right to appeal exam results, in the sense that they can have an interview with the lecturer about their answers and how the marks were given. Yet, it was not clear for the expert committee to which extent students have a "legal" right to appeal at higher and more independent level. The process of student complaints and appeals should be described and published transparently (**Finding 21**). Students can retake an exam, often upon consultation with the teacher.

Conclusion

The criterion is partially fulfilled.

4. Student admission, progression, recognition and certification

Bachelor/Master degree
Consistently applied, pre-defined, and published regulations are in place which cover student admission, progression, recognition, and certification.
[ESG 1.4]

Description

The overall academic rules and procedures are defined in UB's Education Guidelines for each academic year and the faculty has published an equivalent Educational Guidelines regarding every aspect of its programmes, e.g. credits, procedures, complaints, exams, admission and transfer requirements, role of the academic advisor. The general academic regulations include rules and procedures regarding the transfer of students from another study programme and the recognition of courses. In the framework of the national scheme "Independent Learning/Independent Campus" (MBKM) students can study up to three semesters outside their study programme either at another faculty or take part in non-lecture activities outside the study programme, e.g. student exchanges, internships or work practices, research, humanitarian projects, entrepreneurial activities. These activities are then recognised in their own study programme.

There are three enrolment schemes at UB: 1) a National Selection Entrance Test for prospective new students based on their academic and non-academic achievements and/or portfolios (national procedure); 2) a Joint Selection Entrance Test based on the results of a Computer-Based Examination (national procedure); 3) a UB Independent Entrance Test, a mechanism conducted by UB independently based on the scores of the Joint Selection Entrance Test and the applicants' achievements in academics, sports and arts. For the present Bachelor's programmes UB states that applicants have to be graduates of high school (or equivalent) or of a vocational high school or vocational school for fishing vessels, trading vessels, fisheries and fishery products processing. Additionally, applicants to the Bachelor's programmes on Aquatic Resources Management, Fisheries Product Technology, and Marine Science must not be colour blind.

For the Master's programme enrolment is solely based on the Independent Entrance Test. Applicants must have completed an undergraduate study in the appropriate field, have a GPA of 3.00 (or at least 2.75 with additional requirements), a certificate of Academic Potential Test with a minimum score of 450, and an English Language Proficiency Certificate (at least Institutional TOEFL with a score of 500 or IELTS with a minimum score of 5.5 or equivalent).

In the Bachelor's programmes student take between 14 and 24 SKS in their first seven semesters, in their final semester they concentrate on their Bachelor's thesis (6 SKS). In the Master's programme the first three semesters cover about 13 SKS each, in their final semester students finish their thesis begun in the third semester. According to central regulations the maximum number of credits students are allowed to take in one semester (up to 24 SKS) is based on the Grade Point Average (GPA) achieved in the previous semester. Students with a lower GPA can only take a limited number of credits.

Upon completion of their studies students receive a graduation certificate (diploma), transcripts and a Diploma Supplement according to the national template. According to the SER, students of all study programmes also receive an additional Certificate of Competence on English skills and ICT regulated by UB. UB also offers its students, in collaboration with the National Professional Certification Agency, the possibility to gain further professional/industry certificates during their studies.

Experts' evaluation

The admission process is largely regulated by the Indonesian Ministry of Education, with UB also performing some independent selection based on applicants' achievements in academics, sports and arts. To the panel of experts, the admission procedures, while defined, appear not very transparent. Specifically, it remained unclear what kind of students are targeted and what profile, for example a background in natural sciences, is required. The admission criteria for all programmes, but especially for the Master's programme (for background see Chapter 1), must be made more transparent. Special attention must be given to the required competences and necessary prior knowledge for applicants (**Finding 22**). Overall, the impression arose whether admission requirements may be set too broadly for science-based studies. Further, the panel considers the requirement of full colour vision to be an outdated practice.

On the positive side, processes concerning monitoring of student progression, recognition and certification are well defined and implemented by UB. Transfer between study programmes of the same faculty is generally possible. Student progression is closely monitored through an electronic system and guided by academic advisors. The panel of experts recognises that the tracking of students' GPA works well to identify students in need of extra support.

Currently, institutional support for mobility is in place through the programme Kampus Merdeka, MBKM. During site visit interviews with teaching staff and students, the panel of experts was informed about additional initiatives to enable students to take part in international conferences and some departments have implemented joint degrees with partner universities in Taiwan, Japan and Australia. There is no doubt that relevant structures for international exchange are in place. Nevertheless, the panel of experts gained the impression that these initiatives are only used to a minimal extent. Therefore, UB should closely monitor this aspect and take measures to strengthen the mobility of its students (**Finding 23**).

Conclusion

The criterion is partially fulfilled.

5. Teaching staff

Bachelor/Master 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 the SER, each study programme and its respective faculty conduct a job analysis and workload analysis to identify the required number of staff. New openings are transmitted to the central government agency in charge of recruitment of civil servant positions, or directly advertised by the university for contractual staff. According to the regulations, lecturers in Bachelor's programmes must hold at least a Master's degree and lecturers in Master's programmes must hold at least a Doctorate – it is also mandatory for each teaching staff to conduct research and engage in community service. According to the SER, all lecturers undergo a basic training offered by the ministry and the university. Additionally, the faculty has made it mandatory for lecturers to follow a Basic Instructional Skill Development Training (PEKERTI) as well as a training on the Applied Approach (AA); these

programmes should support lecturers in developing their skills in, e.g. course reconstruction, writing teaching materials, basic concepts and paradigms of curriculum development or implementing Classroom Action Research (CAR). Lecturers can also take part in further schemes, including a national Scheme for Academic Mobility and Exchange for staff at universities in Indonesia, and obtain professional/industry certificates.

For the Aquatic Resource Management Bachelor's programme there is a total of 23 teaching staff, of which 3 are professors, 5 associate professors, 6 assistant professors and 9 lecturers. The lecturer to student ration is 1:23. For the Fisheries Product Technology Bachelor's programme there is a total of 25 teaching staff, of which 3 are professors, 8 associate professors and 14 lecturers. The lecturer to student ration is 1:21. For the Fisheries Agrobusiness Bachelor's programme there is a total of 19 teaching staff, of which 3 are professors, 4 associate professors, 4 assistant professors and 8 lecturers. The lecturer to student ratio is 1:30. For the Fisheries Resource Utilization Bachelor's programme there is a total of 19 teaching staff, of which 6 are associate professors, 7 assistant professors and 6 lecturers. The lecturer to student ratio is 1:29. For the Marine Science Bachelor's programme there is a total of 20 teaching staff, of which 4 are associate professors, 3 assistant professors and 13 lecturers. The lecturer to student ratio is 1:28. For the Aquaculture Master's programme there is a total of 42 teaching staff, of which 12 are professors, 19 associate professors and 11 lecturers. The lecturer to student ratio is 1:2.

According to the SER, national and international guest lecturers are invited to contribute to the different study programmes. There is also a 3in1-Program through which practitioners are invited to support learning and teaching at the university, in the form of either team teaching, joint research, joint publications or transfer of knowledge regarding education management and curriculum.

Experts' evaluation

As has been mentioned earlier in this report, the student-staff ratio is in the view of the experts far too high to enable a genuine student-centred learning environment where the individual student needs are catered for (see **Finding 18**, Chapter 3). According to the information available to the expert panel, the Indonesian government considers a staff-student ratio of 1:20 as a minimum ratio for university teaching. As depicted in the SER, all evaluated Bachelor's programmes have a staff-student ratio close to 1:30. Yet, during the on-site confirmation visit UB states that all programmes had a staff-student ratio far below 1:20 and thus comply everywhere with the recommended levels. The experts could not check this additional information. Based on the available and documented information, the expert panel remains convinced that the staff resources do not fit the size of the student body (see underneath).

At the same time, the facilities also seem to be shorthand related to the size of the student body. For undergraduate teaching, mostly classrooms with a capacity of 40 students are available, while the student body in the first year of all evaluated Bachelor's programmes is higher than 160. As the drop-out is generally less than 10 %, this high number of students remains throughout all semesters. As mentioned earlier, it always results in either a too high teaching load for staff, with a consequent reduced possibility to spend sufficient time on academic research, or on a superficial teaching, reducing the quality of the teaching. Whatever choice is made by the lecturer, the end result is always a reduced academic quality of the education. The committee of experts is highly concerned about this situation and generally recommends the faculty to invest strongly in its staff quality and size or to reduce the student entrance numbers (see underneath). Practically, the experts require that lecturers should have more time to conduct research (this could be achieved by e.g. sharing more common courses (large lectures avoiding duplications) or by limiting the number of students). The funding of research should also support the projects of younger staff members more explicitly than it does today (**Finding 24**).

The committee received an extensive list of all teaching staff involved in all evaluated programmes, including their academic qualification, their research interest and the courses they are involved in. Compared to an average European university, the ratio of teaching staff with a PhD degree to those without is rather low; for

all evaluated Bachelor's programmes, it varied between 30 % and 50 % of the lecturers holding a PhD degree. Formally, staff is stimulated to seek a PhD, but given the heavy teaching load, the committee did not see many structured opportunities offered by the university to help its staff to pursue this ambition. Although it is mandatory for each teaching staff to also conduct research and engage in community service, the research environment seems not stimulating enough for staff to embark on a PhD trajectory. This situation warrants attention of the university management (see underneath).

The university has a system in place to invite external experts and/or stakeholders to participate in the teaching efforts as guest lecturers. The committee of experts would recommend the university to enforce this regulation and invest more in attracting highly qualified academic scientists to come and teach (see underneath). It is also applaudable that industry leaders or other stakeholders participate in the education for an invited lecture, or a workshop or a practical exercise.

The faculty has made it mandatory for lecturers to follow a Basic Instructional Skill Development Training (PEKERTI) as well as a training on the Applied Approach (AA); this is highly appreciated by the committee of experts as it guarantees a minimum and standardised didactic quality of all teachers. Teaching/research staff has further access to further training in their subject or in teaching qualities etc. This corroborates well with European standards of proper university management.

All in all, the experts consider the quality of the teaching staff appropriate but not yet optimal for the set of undergraduate and graduate programmes of the faculty; they appreciate the systems for staff upgrading set in place but would prefer to see a more structured approach for stimulating all staff to have a PhD degree. The weak point however is the number of staff which is too low compared to the size of the student body. Therefore, the experts believe that UB must hand in a medium-term HR action plans based on the identified needs of the programmes. The plans must deal with upskilling (e.g. teaching training), planned further training of staff (how the number of PhD holders will be upgraded within the next three years), and acquiring additional lecturers with specialisations not represented at the moment in staff (**Finding 25**).

Conclusion

The criterion is partially fulfilled.

6. Learning resources and student support

Bachelor/Master 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

For each course students receive a Semester Lesson Plan (RPS) detailing the programme learning outcomes, the course learning outcomes, the learning frequency, duration of learning, course types, duration of face-to-face learning, duration of independent study, number of students, prerequisites for attending lectures, course objectives, learning methods, assessment methods, the person in charge of the course. Overall academic regulations are published in the faculty's Educational Guidelines, which are updated yearly. Additional material is made available on the university online platform including teaching material and teaching media, e.g. videos, presentation files. According to the SER the university online platform serves as a central access point for

teaching and learning for both students and lecturers, for research and community service, as well as for academic information systems, services and online reporting.

Students receive an introduction to the campus. The facilities of the faculty are divided across four locations, covering a total of six buildings for teaching and learning as well as laboratories, support services, a cafeteria and other student activities. According to the SER there are 30 classrooms for undergraduate and five classrooms for graduate study programmes available as well as the following laboratories: Laboratory of Hydrology/Laboratory of Fish Culture, Fisheries Product Technology Laboratory, Exploration Laboratory of Fisheries and Marine Resources, Fisheries Socio-Economic Laboratory, Freshwater Fisheries Laboratory of Sumber Pasir, Probolinggo Brackish Water and Marine Fisheries Laboratory, Sendang Biru Marine Station Laboratory, Fisheries Agrobusiness Laboratory, Fish Cultivation Laboratory, Computer Laboratory. Students also have access to the central facilities of UB, including the Central Library, BioScience laboratories, healthcare facilities, sport centre and religious facilities. Maintenance is carried out by the General and State Property Sub-Division of UB.

Academic counselling is provided by the students' academic advisors – their role is regulated in a Manual for Guidance and Counselling. The students should meet with their advisor at least four times per semester. Additionally, there is also a Centre for Academic and Professional Education Development for non-academic matters including psychological counselling, online or face-to-face. As stated in the SER, UB provides financial and non-financial support for students as well as information on possible scholarships. Moreover, there is a Technical Implementation Unit for Career Development and Entrepreneurship supporting students in connecting with the labour market. According to the SER, the Centre for the Study of Disability Services supports students with disabilities, e.g. by providing assistants or sign language interpreters, and UB's buildings are being retrofitted to be easily accessible for students with disabilities. Further, the Integrated Service Unit for Sexual Violence and Bullying provides additional support for a good learning environment. Foreign students can turn to the international office for advice and counselling.

UB states in its SER that there is a Student Representative Council as well as a Student Executive Board at UB for formal procedures and matters, as well as student associations at the level of the faculties and for the different subjects.

Experts' evaluation

Students have access to course/module descriptions by an integrated service information system portal (GAPURA) that provides easy access to information and services for all UB Information System service users. Students can access academic and student-related services from SIAM (included in GAPURA), e.g. arranging Study Plan Cards, viewing Study Result Cards, and viewing class schedules. Furthermore, all information is also prepared and shared by the teaching staff during the first meeting of each semester. Teaching materials include Semester Lesson Plans, modules, videos, presentation files, etc. Reviewing the provided examples of course programmes, the experts consider that students are provided with sufficient information about each course regarding learning outcomes, methods of learning and teaching, forms of assessment, and the expected workload. Despite this, the experts recommend standardising the format of course description contents and to summarise it within a kind of study course handbook to achieve a better clarity (**Finding 26**). Moreover, the panel of experts had problems to understand the structure of each study programme based on the course structure presented in the SER for each programme. Thus the experts assume that also students might have difficulties to arrange their semester lesson plan and to identify their workload. However, the experts must admit that the SIAM system (not tested by the experts) might be a valuable tool for it.

Regarding set procedures assisting students on content and organisational level to avoid course overlap and unnecessary extensions of the study period the SER is lacking sufficient information. It can be assumed that the implemented IT is a valuable tool and the mentioned regular advisor meetings (at least four times per

semester) are also helpful. On the other hand many study programmes are highly diverse, and it was already mentioned that the presented course structure is not easy to understand from an outside perspective. Additionally, UB provided statistical data showing somewhat long study times. The reasons for this could not always be provided by UB representatives during the digital site visit. Therefore, the experts encourage the programme leaders to further work on improving the average duration of studies in the programmes (**Finding 27**).

The presentation of infrastructure in the SER, the virtual and the on-site confirmation visit showed an appropriate level to generally fulfil the needs of the study programmes. However, considering the very large number of students and courses the experts see deficits especially in classroom size (appr. 1 student per m² area, max. 50 students), student-lecturer ratio for most of the programmes (see Chapter 5), laboratories size and equipment. The experts recommend offering common courses for some of the programmes as well as courses in bigger classrooms to reduce the lecturers' workload (see Chapter 5). In terms of laboratories, the experts have not seen any setting enabling the students to practice on their own (this was confirmed in the on-site confirmation visit). What is missing are parallel workstations (or similar) where students are practicing at the same time in order to be able to handle the sheer number of students. As presented, the experts assume that it is difficult for all students to achieve appropriate practical skills.

The library is well equipped with appropriate national/international literature and other academic sources to achieve the intended learning outcomes.

All in all, like foreseen already in the strategic planning of the UB, the infrastructure must be improved, including classrooms and laboratories for larger groups of students. In addition, the facilities of the Marine Station must be improved so that larger groups of students and staff can stay there and also find equipment to carry out their research. The panel of experts requests that a concept and action plan be handed in, in which the improvement of the infrastructure on campus and at the Marine Station is addressed (**Finding 28**).

Advisory services are provided by assigning academic advisors for students and the online service information system portal (GAPURA). The academic advisors provide counselling for students at least four times in one semester. Services provided include consultation about the study courses to be taken or academic problems students face. Regular consultation hours were not mentioned in the SER.

There is an international office providing support for foreign or exchange students. It coordinates within each study programme the hosting of international students. Yet, there are currently no international students in the six study programmes under review, this indicates the current national focus of the programmes.

The university provides financial and non-financial support for students by adapting the single tuition fee (based on financial means), donation for education facilities and various scholarships.

Conclusion

The criterion is partially fulfilled.

7. Information

Bachelor/Master 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. Each study programme has a specific webpage linked to the site of the faculty. This includes information on the study programme profiles, the academic regulations at the faculty, the intended learning outcomes, academic systems, research activities and community service, student organisations, scholarships, job vacancies, quality assurance systems, agendas and contact persons. UB indicates in its SER that information is also provided to prospective students, current students, alumni and the wider community through various social media channels.

Experts' evaluation

Generally, the website of UB provides good overall information. All information related to the undergraduate and graduate programmes at the faculty is shared through various media, including websites, social media, and video sharing media, to reach all levels of society. Unfortunately, the English versions are not always functional, limiting the evaluation by the panel of experts. The websites of UB, of the faculty and of the study programmes have different layouts (corporate identity), functionalities and contents. It seems that they do not build on each other as would have been expected. Moreover, many links also jump between the homepages of UB, the faculty and study programmes, which creates a lack of clarity. To sum it all up, all required information seems to be accessible, yet it would be helpful if the structure of the homepages were built on an overall common structure.

Conclusion

The criterion is fulfilled.

V. Recommendation of the panel of experts

The panel of experts recommends accrediting the study programmes “Aquatic Resources Management” (Bachelor of Fisheries), “Fisheries Product Technology” (Bachelor of Fisheries), “Fisheries Agrobusiness” (Bachelor of Fisheries), “Fisheries Resource Utilization” (Bachelor of Fisheries), “Marine Science” (Bachelor of Marine Science), and “Aquaculture” (Master of Fisheries) offered by Universitas Brawijaya with conditions.

Findings:

1. The profiles of the Bachelor’s programmes must be further clarified: the differences between the programmes as well as the common features should be made clearer. If appropriate, common features such as common fundamentals could be integrated in common courses.
2. The experts suggest modularising the programmes by merging small courses into larger courses.
3. The structure of all programmes must be revised. Special attention must be given to the logical sequence of the courses (basis knowledge at the beginning followed by more in-depth knowledge and then specialised courses at the end).
4. The title of the courses must be checked against the content of each course and clear and transparent names must be given.
5. The links to the fishing industry should be developed, especially for the study programmes “Aquatic Resources Management” and “Fisheries Resource Utilization”.
6. Subjects strengthening the knowledge and skills of students in management and conservation of aquatic resources, biotechnology of aquatic resources, and solving complex problems such as cases of managing aquatic environmental pollution as well as the destruction of marine habitat must be included in the “Aquatic Resources Management” curriculum.
7. More practical classes should be included in the curriculum of the “Fisheries Agrobusiness” and “Fisheries Product Technology” study programmes.
8. The “Fisheries Product Technology” curriculum must include courses related to the graduate learning outcomes “students are able to identify the characteristics of tuna, crustacean, and seaweed as raw materials for food, health, and industry and able to apply processing technology of these animal and plants and their derivative products on an industrial scale”. The respective course descriptions must show that the labour market requirements are considered.
9. The curriculum of the “Fisheries Resource Utilization” programme must be rearranged and sharpened to provide adequate knowledge and skills in terms of understanding environmentally friendly fishing technology, understanding operating standards, and safety of fishing operations, as well as capture fisheries management and policy. The corresponding PLO 6 and PLO 8 must be simplified so that students can realistically achieve them.
10. Subjects such as fishing area mapping, underwater observation, capture fisheries business analysis, and capture fisheries law and policy as well as subjects strengthening the knowledge and skills of graduates in sustainable capture fisheries management, adequate knowledge and skills in the development of environmentally friendly fishing technology, as well as adequate knowledge and skills in planning and capture fisheries business development must be included in the “Fisheries Resource Utilization” curriculum.
11. The social sciences should be made more visible in the “Marine Science” curriculum.
12. The inclusion of the field station in the study programme “Marine Science” should be strengthened.

13. The profile of the Master's programme "Aquaculture" must be specified and transparently portrayed. Specific attention must be given to clarity regarding the species focus (fish, invertebrate, algae) as well as the environment focus (fresh water, sea/ocean, brackish water). The structure of the curriculum, choice of courses and order of courses must be changed accordingly.
14. UB should make its procedures safeguarding academic integrity more visible and more transparent.
15. Students must be more actively and structurally involved in the regular review of programmes as well as other quality assurance procedures on faculty and university level through e.g. (voting) representatives in the different bodies.
16. Diversity management should be further developed and formalised, e.g. by establishing an equal opportunity officer in the relevant bodies of UB.
17. Information on the outcome of quality assurance measures must be provided more regularly in an aggregated, transparent form also in English.
18. UB must take specific measures to strengthen its student-centred learning approach. This could be done by including more diverse teaching methods and assessment forms, e. g. by integrating problem-based learning.
19. The programmes must foster more strongly the development of conceptual thinking by the students and at the same time offer more opportunities for hands-on training.
20. Professional performance should be considered in the assessment of internships.
21. The process of student complaints and appeals should be described and published transparently.
22. The admission criteria for all programmes, but especially for the Master's programme, must be made more transparent. Special attention must be given to the required competences and necessary prior knowledge for applicants.
23. UB should take measures to strengthen the mobility of its students.
24. Lecturers should have more time to conduct research. The funding of research should more explicitly support the projects of younger staff members.
25. UB must hand in medium-term HR action plans based on the identified needs of the programmes. The plans must deal with upskilling (e.g. teaching training), planned further training of staff (how the number of PhD holders will be upgraded within the next three years), and acquiring additional lecturers with specialisations not represented at the moment in staff.
26. The format of course description contents should be standardised, and a study course handbook which addresses the needs of the students should be created.
27. The experts encourage the programme leaders to further work on improving the average duration of studies in the programmes.
28. UB must hand in an action plan regarding the improvement of its facilities, especially:
    a. providing classrooms and laboratories for larger groups of students on its main campus,
    b. improving the facilities of the Marine Station so that larger groups of students and staff can stay there and find equipment to carry out their research.