ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes
Biology Education
Mathematics Education

Provided by
Universitas Halu Oleo, Indonesia

Version: 24 September 2024

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Program Studi Sarjana Pendidikan Biologi	Bachelor programme in Biology Education	ASIIN	BAN-PT[3]: "Excellent" 2022 - 2025	10
Program Studi Sarjana Pendidikan Matematika	Bachelor programme in Mathematics Education	ASIIN	BAN-PT: "Excellent" 2022 - 2025	12
Date of the contract: 27.02.2024 **Submission of the final version of the self-assessment report:** 13.03.2024 **Date of the audit:** 18.06. – 20.06.2024				
Expert panel: Prof. Dr. Martina Doehrmann, University Vechta Frank Hemmerling, Teacher, Leipzig Priyambodo Priyambodo, Universitas Lampung Dr. Murni Ramli, Universitas Sebelas Maret Ariqah Mumtazah, Universitas Hasanuddin, student				
Representative of the ASIIN headquarter: Rainer Arnold				
Responsible decision-making committee: ASIIN Accreditation Commission				

[1] ASIIN Seal for degree programmes;
[2] TC: Technical Committee for the following subject areas: TC 10 – Life Sciences, TC 12 - Mathematics
[3] National Accreditation Board for Higher Education

Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria as of 23.03.2023 Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of 28.06.2019 Subject-Specific Criteria of Technical Committee 12 – Mathematics as of 09.12.2016	

B Characteristics of the Degree Programmes

a) Name	Final degree (original)	b) Areas of Specialization	c) Corresponding level of the EQF[4]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Undergraduate programme in Biology Education	Sarjana Pendidikan/ Bachelor of Education in Biology	-	6	Full time	no	8 Semester	144 CSU / 244.8 ECTS	1984, Once a year (August)
Undergraduate programme in Mathematics Education	Sarjana Pendidikan/ Bachelor of Education in Mathematics	-	6	Full time	no	8 Semester	144 CSU / 244.8 ECTS	1981, Once a year (August)

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

For the Bachelor's degree programme Biology Education, Universitas Halu Oleo (UHO) has presented the following profile in its Self-Assessment Report:

"1. Offering research-based learning that attends to the characteristics of island regions and utilizes advanced information technology to produce competitive graduates

2. Conducting research in biology and biology learning that are geared towards national and international publications and the acquisition of intellectual property rights.

3. Conducting community service programs that are based on research in biology and biology learning to offer substantial benefits for the larger society.

4. Running activities for the development of students' roles and potentials in fields of spirituality and noble characters, intelligence, sports, arts and culture, and entrepreneurship – all to support their professional competence.

5. Implementing accountable, transparent, and credible program management that contributes significantly to the implementation of university tridharma and provides professional and first-class educational services.

6. Managing the campus environment in ways that support the cultivation of green campus initiatives.

Based on tracer study results, BBE graduate profiles are formulated as follows:

1. Biology educators are graduates who are able to integrate biology core subject knowledge, pedagogy, and technology in planning, implementing, and evaluating the biology learning process professionally at the national and international level based on the characteristics of coastal, archipelagic, and rural areas.

2. Researchers are graduates who are able to work in research teams, apply scientific research in biology and biology education based on the characteristics of coastal, archipelagic, and rural areas and disseminate the results at national and international forums.

3. Entrepreneurs are graduates who are able to systematically plan enterprises in their field of expertise, implement business development plans, apply managerial principles, have innovative, creative, and leadership spirits, have the ability to make fair decisions, and build cooperation networks with related parties in their business field."

For the Bachelor's degree programme Mathematics Education, Universitas Halu Oleo (UHO) has presented the following profile in its Self-Assessment Report:

"The vision of BME is that in 2029 it will become a study program that excels in the development of science and technology in the field of mathematics education at the global level in accordance with the characteristics of the region. Mission of BME is:

1. Carry out education in the field of research-based teaching and learning by utilizing advances in information technology so that Mathematics Education graduates are able to compete at the international level and adapt according to regional characteristics.

2. Carry out excellent research in the field of teaching and learning oriented to national and international publications and the acquisition of Intellectual Property Rights in the field of Mathematics learning.

3. Using the results of research in the field of teaching, learning and other superior intellectual products for the development of mathematics learning.

4. Build sustainable cooperation with stakeholders both nationally and internationally to improve the quality of mathematics education

Based on tracer study results, BME graduate profiles are formulated as follows:

1. Be able to use math knowledge and skills to become a school math teacher

2. Able to apply managerial knowledge to become an education manager"

C Expert Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Homepage Universitas Halu Oleo: https://uho.ac.id
- Homepage Faculty of Teacher Training and Education: http://fkip.uho.ac.id/
- Homepage Mathematics Education: http://fkip.uho.ac.id/pmat/
- Homepage Biology Education: http://fkip.uho.ac.id/pbio/
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts base their assessment of the learning outcomes on the information provided on the websites and in the Self-Assessment Report of both the Bachelor's degree programme Biology Education (BBE) and the Bachelor's degree programme mathematics Education (BME).

For both programmes, Universitas Halu Oleo (UHO) has described and published Programme Educational Objectives (PEO) and Intended Learning Outcomes (ILO). While the PEO are rather general and refer to the vision and mission of the Faculty of Teacher Education (FKIP), the ILO cover a number of specific competences students should acquire in their respective degree programme. Both, PEO and ILO of each degree programme are published on the respective programme's webpage. The faculty's vision is formulated based on the university's vision and takes the input from stakeholders (lecturers, students, alumni, and employers) as well as professional associations such as the Indonesian Biology Education Consortium (KPBI), the Indonesian Mathematics Society (IndoMS), the Indonesian Mathematics Educator Society (I-MES), and the Indonesian Society for Educators and Researchers

(HPPBI) into consideration. The PEO and ILO are verified every five years, with the latest verification in November 2022.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Life Sciences as a basis for judging whether the intended learning outcomes of the Bachelor's degree programme Biology Education, as defined by UHO, correspond with the competences as outlined by the SSC. They come to the following conclusions:

Graduates of the Bachelor's degree programme Biology Education should understand the basic biological processes and be capable of applying the scientific and pedagogical methods of the biological sciences. In addition, graduates should acquire relevant scientific knowledge in the various biological areas such as botany, zoology, biotechnology, microbiology, molecular biology, cell biology, and related natural sciences (chemistry, physics). Furthermore, the students should be able to conduct independent laboratory and fieldwork, plan, implement, assess, and follow up the educational biology learning process and be able to design and perform experiments in biology learning to collect, analyse, and interpret data to solve biological issues. Finally, students should be qualified to conduct lifelong learning and work effectively, both individually and in a team, to demonstrate scientific, critical, and innovative attitude in biology learnings, laboratory works, and environmental care.

The Bachelor's degree programme Biology Education is designed to produce competitive graduates with competences to work as biology educators/teachers, who are able to plan, implement, evaluate, and develop modern biology learning. As junior research assistants, graduates should be able to examine issues in biology and biology learning by implementing scientific methods and be able to design and carry out research projects in the area of biology education. As entrepreneurs, graduates should be qualified to manage a business unit and to develop local biological-based business ideas through innovation and creativity.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Mathematics as a basis for judging whether the intended learning outcomes of the Bachelor's degree programme Mathematics Education, as defined by UHO, correspond with the competences as outlined by the SSC. They come to the following conclusions:

The intended learning outcomes of the Bachelor's degree programme Mathematics Education focus on conveying scientific and educational methods for observing, understanding, analysing, and solving mathematical problems. To this end, students should develop a mathematical and logical reasoning and be familiar with the different areas of mathematics such as analysis, algebra, applied mathematics, computational mathematics, elementary mathematics, and statistics. Finally, graduates should be able to work with and manipulate

mathematical properties and have an understanding of the underlying mathematical concepts. This should enable them to develop critical thinking skills and the ability to use modern mathematical learning and teaching methods. In addition, graduates should be capable to apply and evaluate modern methods and instruments of mathematics learning and teaching by using information and communication technology.

The Bachelor's degree programme Mathematics Education aims at producing professionals who at the beginning of their careers become mathematics educators. However, graduates should also have the ability to be managers of educational institutions and work as entrepreneurs or research assistants.

Supplementing the subject-related qualification objectives, students of both Bachelor's programmes should have adequate competences in oral and written communication skills, be capable of working autonomously as well as in a team-oriented manner, and be able to conduct research activities. Furthermore, they should have trained their analytical and logical abilities, are able to apply information and communication technology in the field of education, and show a social and academic attitude. Finally, students should acquire communicative and language skills and should develop a strategy for life-long learning.

According to the tracer studies conducted by UHO, most graduates (around 70%) work as biology or mathematics teachers in high schools all over Southeast Sulawesi and other areas in Indonesia. Some work as tutors, or become trainers at public educational centers. As FKIP has the goal to educate researchers and entrepreneurs, but none of the graduates are employed in these areas, FKIP should discuss how students could be better prepared for becoming t researchers or entrepreneurs. For example, FKIP could cooperate with the Faculty of Mathematics and Natural Sciences in the area of research and with the Faculty of Economics in order to offer some electives for students who want to found their own business. Additionally, the experts suggest reviewing the graduate profile of "researcher". This does not seem to be in accordance with the actual occupation areas in the Biology Education programme. Moreover, FKIP should actively support young researcher in the field of mathematics and biology didactics and thus research in this area. To this end, it would be necessary to have respective PhD positions at FKIP.

In summary, the experts are convinced that the intended qualification profiles of both undergraduate programmes under review allow students to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that they meet the goals set for them. The experts conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification and correspond sufficiently with the ASIIN Subject-Specific-Criteria (SSC) of the Technical Committee 10 – Life Sciences (BBE) and the SSC of the Technical

Committee 12 – Mathematics (BME) and adequately reflect the intended level of academic qualification (EQF 6).

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report

Preliminary assessment and analysis of the experts:
UHO awards a Bachelor of Education (B.Ed.) or Sarjana Pendidikan (S.Pd.) degree to the graduates of both undergraduate programmes.

The names of the degree programmes properly reflect the respective focus and content of the undergraduate programmes, which is on education in the respective scientific area.

The experts confirm that the English translation and the original Indonesian names of both Bachelor's degree programmes correspond with the intended aims and learning outcomes as well as the main course language (Bahasa Indonesia).

Criterion 1.3 Curriculum

Evidence:

- Study plans of the degree programmes
- Module descriptions
- Homepage Faculty of Teacher Training and Education: http://fkip.uho.ac.id/
- Homepage Mathematics Education: http://fkip.uho.ac.id/pmat/
- Homepage Biology Education: http://fkip.uho.ac.id/pbio/

Preliminary assessment and analysis of the experts:

Both programmes are offered by the Faculty of Teacher Training and Education (FKIP) of Universitas Halu Oleo (UHO). All undergraduate programmes at UHO are designed to be completed in eight semesters or four academic years with a maximum of 14 semesters or seven academic years. Each semester is equivalent to 14 weeks of learning activities. Besides these learning activities, there is one week for midterm exams and one week for final exams. The odd semester starts in August and ends in January of the following year, while the even semester last from February to July.

The BBE and BME programmes consist of compulsory and elective courses. The credit load that must be taken by students to obtain a bachelor of education degree is a minimum of 144 credits (ECTS 244.8). Compulsory courses are subjects' courses that students must take as a condition for graduating and obtaining a bachelor's degree. Elective courses are courses that students choose based on their needs. A systematic university-wide review of the curriculum is conducted every four years but minor changes may be implemented every year after endorsement by FKIP.

The curriculum of both undergraduate programmes under review consists of university/national requirements and compulsory and elective courses determined by FKIP and the respective departments. University/national requirements are courses that need to be attended by all undergraduate students at UHO. This includes courses such as: Pancasila, Religion, Indonesian Language, English, Civic Education, and Community Service. These courses are all offered in the first two semesters of studies, in addition to courses conveying basic knowledge of natural sciences, mathematics, and education. There are also several courses, which focus on education: Instructional Design, Educational Profession, Inclusive Education, Learning and Instruction, Cognitive Development of Student, Insight and Studies of Mathematics and Natural Science, Information Technology, Introduction to Educational, Administration and School Management, Classroom Action Research, Micro Teaching,

Courses on the different subject-specific educational sciences are offered from third to eighth semester. Elective courses can be taken from the third year of study. Students usually choose elective courses that relate to their thesis and/or their individual interests.

The Bachelor's degree programme Biology Education consists of 135 credits (229.5 ECTS) of compulsory courses and 9 credits (15.3 ECTS) of elective courses. The BBE curriculum can be divided into course groups based on seven areas of knowledge:

1. Basic Knowledge on science and computation (8 credits, 13.6 ECTS)
2. Basic and Advanced Biology (69 credits, 117.3 ECTS)
3. Education (14 credits, 23.8 ECTS)
4. Teaching and Learning (14 credits, 23.8 ECTS)
5. Research and Publication (6 credits, 10.2 ECTS)
6. Spirituality and Nationalism (15 credits, 25.5 ECTS)
7. Managerial & Institutional Identities (9 credits, 15.3 ECTS)

Students also have to cover electives and the school internship, which encompass 9 credits (15.3 ECTS) and are not included in the listed seven areas of knowledge.

The Bachelor's degree programme Mathematics Education consists of 135 credits (229.5 ECTS) of compulsory courses and 9 credits (15.3 ECTS) of elective courses. The BME curriculum can be divided into course groups based on ten areas of knowledge:

1. Elementary Mathematics (11 credits, 18.7 ECTS)
2. Analytical Mathematics (18 credits, 30.5 ECTS)
3. Statistics (11 credits, 18.7 ECTS)
4. Applied Mathematics (18 credits, 30.5 ECTS)
5. Algebra (14 credits, 23.8 ECTS)
6. Mathematics Education Technology (16 credits, 27.2 ECTS)
7. Education Management (12 credits, 20.4 ECTS)
8. Education Research and evaluation (19 credits, 32,3 ECTS)
9. School Mathematics (6 credits, 10.2 ECTS)
10. Personality Development (13 credits, 22.1 ECTS).

Students also have to complete a final project (Bachelor's Thesis), which encompasses 6 credits (10.2 ECTS) and is not included in the listed ten areas of knowledge.

With respect to the electives in BBE, the experts point out that it would be useful to increase the number of elective courses with respect to regional specialities like coastal and maritime resources in Southeast Sulawesi. In the same way, UHO could make better use of its spacious and green campus as a natural laboratory to support several courses related to plant biology and ecology. This is in accordance with information derived from alumni and employers who work at schools with limited technical equipment. Students' skills in developing teaching media and practicum media from the surrounding environment may be a form of implementation of interdisciplinary learning with limited resources.

In addition, the BBE programme should increase the portion of modern biology content (e.g. molecular biology and bioinformatics) with relevant to the current research and innovation in biology at least as electives in the curriculum. The courses may be set up as collaborative courses with the Faculty of Mathematics and Natural Sciences. At the same time it would be necessary to make a comprehensive design related to the improvement of molecular biology laboratory facilities and computer laboratories that can be used to enhance students' bioinformatics skills.

The experts also point out that only very few interdisciplinary courses on teaching sciences are offered at UHO, although this is fostered by the Indonesian government, and teaching integrated sciences is mandatory in high schools in Indonesia. Moreover, it would be highly

advisable to introduce all students to digital teaching and learning methods; this includes teaching them about the correct use of AI.

With respect to practical learning, the experts point out that biology education students should be given more opportunities for exploring and experimenting freely, so they may experience errors and repeat the experiment if necessary. It means the practicum should not be based on the cook-book manual or procedures, because this traditional type of practicum has been practiced since secondary school level and it reveals to incapability of students to understand science phenomena properly. It will work in the early semester of the study, but it should be different in higher semesters. This would also train students' critical thinking and problem-solving skills and especially the PCK (Pedagogical Content Knowledge) skills to design the inquiry-based experiments to be implemented at schools during the teaching practicum or when they work as new teachers.

For gaining practical work experience in schools, both undergraduate programmes include an internship programme called School Field Experience Practice (PLP). It is an independent course where students are involved in teaching at selected schools. During the internship programme, students learn pedagogical strategies from their mentor teacher at the school. By the end of the programme, students are required to write a fieldwork report. The final grade for the internship programme is based on the students' performance at the school and the fieldwork/internship they submit. The experts observe that practical PLP activities only last for four weeks at partner schools and are usually conducted in the sixth or seventh semester. The current duration of practical school training is relatively short in comparison to other teacher education programmes and comes very late in the course of study. To this end, the experts strongly recommend considering an extension of this period. In this context, a division into several subperiods could be conceivable, of which the first could be anchored as early as possible in the study program (possibly already in the 2nd year of study).

Usually during the last year of studies, students must complete the community service. The experts discuss with the programme coordinators about the content and goal of this course. The programme coordinators explain that community service is compulsory for all Indonesian students. It has a minimum length of four weeks and often takes place in villages or rural areas where students stay and live together with the local people. The course is designed "to allow students to apply their knowledge based on their field in order to empower society." Since the community service usually takes place in remote areas, the students cannot attend any classes during this time. The students work in interdisciplinary teams during the community service in order to advance the society and bring further development about. This course was introduced at all Indonesian Universities in 1971. The assessment of the community service consists of a work plan, programme implementation,

and activity report. The experts understand that students should work for the benefit of the community and the Indonesian society during the community service and support this concept.

The members of the teaching staff explain on demand of the experts that students find suitable topics during the research methods course, in which they do literature research and read selected papers. In this course, students have to design a research proposal with a time schedule for the project, which is discussed with the academic advisor. If they agree, students apply formally for being allowed to work on the suggested topic. It is also possible to conduct the Bachelor's thesis outside UHO.

In general, the experts confirm that both degree programmes are well designed and impart a broad range of competencies so that graduates can find suitable jobs as teachers or educators. The experts gain the impression that the BBE and BME graduates are well prepared for entering the labour market and can easily find adequate jobs in Indonesia.

After analysing the module descriptions and the study plans, the experts confirm that both degree programmes under review are divided into modules and that each module is a sum of coherent teaching and learning units. All practical lab work and internships are well integrated into the curriculum and the supervision by the Faculty of Teacher Training and Education guarantees for their respective quality in terms of relevance, content, and structure.

In summary, the experts confirm that the choice of modules and the structure of the curriculum ensure that the intended learning outcomes of the respective degree programme can be achieved.

International Mobility

UHO provides some opportunities for students to conduct internships and exchange programmes abroad. For example, students of the Mathematics Education and Biology Education programmes can join the SEA Teacher (Southeast Asia-Teacher) project. This programme was initiated by the Southeast Asia Ministers of Education Organisation (SEAMEO) involving countries in Southeast Asia. Eleven SEAMEO member countries are collaborating on this project that is aimed to improve the quality of education in Southeast Asia, revitalize teacher education, and continue to build and improve the quality of teachers in their home country.

Students' international academic mobility is supported by UHO. For example, through scholarships from UHO and International Students Mobility Awards (IISMA), a scholarship programme from the Ministry of Education, Culture, Research and Technology starting

from 2021. In addition, lecturers are encouraged to carry out joint research activities with international partners and to involve students in their projects.

The new policy of the Indonesian government actively supports any activities outside of the university by releasing a regulation on the Merdeka Belajar-Kampus Merdeka (MBKM), which requires the university to promote students who want to spent part of their Bachelor's programme outside UHO (Minister of Education and Culture Regulation Number 3, Year 2020). UHO recognizes the courses taken by the students outside UHO, based on the comparability of the intended learning outcomes. The experts consider this regulation sufficient. However, according to the opinion of the expert group, the academic mobility of the students should be further promoted.

Students who take part in student exchanges through cooperation programmes can gain recognition of the acquired credits after obtaining approval from their undergraduate programme. The credits acquired abroad are transferable to UHO, although this transfer of credits is only possible if an agreement exists between UHO and the involved international university. This agreement regulates the details of the transfer, such as the list of courses that can be transferred, the minimum grade, equivalency of curriculum between universities, etc..

The International Office of UHO is responsible for managing and coordinating the international activities such as coordinating and managing student mobility programmes, developing and maintaining relationships with partner institutions and organisations around the world, recruiting and admitting international students, providing support and assistance to international students during their time at UHO, such as helping with housing, visa issues, and other practical matters.

The number of students, either in the BBE or the BME programme, who spend some time abroad is still low despite students' high interest. For example, since 2018 three BME students joined the SEATEACHER programme and studied at Dong Thap University (Vietnam), Far Eastern University and Central Luzon State University (both in the Philippines). The numbers are similar in the BBE programme, here since 2019 one student studied at Pangasinan State University and one student at Cavite State University (both in the Philippines). The experts appreciate that various collaborations between institutions or parties with UHO exist. UHO cooperates with international institutions such as Mie University, Japan, La Rochelle University, France, the University of Rhode Island, USA, and Universiti Teknologi Mara, Malaysia.

In addition, several BBE and BME students take part at the MBKM programme every year, but all of these stays were conducted in Indonesia in the context of teaching in educational institutions, projects in villages, or short term stays at other universities.

The students confirm during the discussion with the experts that some opportunities for international academic mobility exist and that the credits acquired abroad are recognised at UHO. However, they also point out that they wish for more places and scholarships for long- and short-term stays abroad. The number of available places in the mobility programmes is still limited and there are restrictions due to a lack of sufficient financial support. UHO can provide only limited travel grants, while the demand from students is rising. The lack of financial support hinders students from joining the outbound programmes. National scholarships are available, but they are highly competitive, so only a few students receive them. The experts understand these problems; nevertheless, they recommend increasing the efforts to further internationalising UHO by offering more places in international exchange programmes and more scholarships.

The experts emphasize that it is very useful for students to spend some time abroad already during their Bachelor's studies to improve their English proficiency, to get to know other educational systems, and to enhance their job opportunities. To this end, it would also be very useful to offer more subject-specific courses that are at least partly taught in English. In addition, the experts emphasise that not only the students but also the teachers should improve their English proficiency in order to be able to teach more in English and to expand the possibilities to do international research collaboration, joint publication, co-teaching, and as joint supervisor.

Furthermore, FKIP should initiate more international exchange programmes, offer more places at international schools, and provide more scholarships for students. FKIP should extend the collaboration with international schools, both in Indonesia and in other ASEAN countries. To attract international students, FKIP should think about conducting international summer schools on coastal and maritime topics. The experts are convinced that such an offer would appeal to many students, especially from Europe, and this might help to further promoting the internationalisation of UHO.

A good starting point for initiating more international co-operations are the personal international contacts of the faculty members and the guest lecturers. It is also possible for students and teachers to apply to international organisations like the German Academic Exchange Council (DAAD) for receiving funds for stays abroad. In addition, FKIP should invite more academics from renowned international universities as guest lecturers. Additionally, the teachers would like to have more support from UHO and FKIP on establishing international contacts and cooperations in the area of teacher education. Moreover, it would also be useful of establishing an international coordinator or team at FKIP to initiate international cooperations specifically for the area of teacher education.

In summary, the experts appreciate the effort to foster international mobility and support FKIP to further pursuing this path. However, the academic mobility is still low and there is room for improvement.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- UHO New Student Admission Regulation for Undergraduate Programmes
- Homepage Universitas Halu Oleo: https://uho.ac.id
- Homepage Faculty of Teacher Training and Education: http://fkip.uho.ac.id/
- Homepage Mathematics Education: http://fkip.uho.ac.id/pmat/
- Homepage Biology Education: http://fkip.uho.ac.id/pbio/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the Self-Assessment Report, admission procedures and policies for new students follow the new national regulations in Indonesia, which were introduced in 2023. The requirements, schedule, registration venue, and selection test are announced on UHO's webpage and thus accessible for all stakeholders.

There are three different ways by which students can be admitted to a Bachelor's programme at UHO:

1. National Achievement-Based Selection (SNBP), which replaces the former system known as the National State University Selection (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during the high school.

2. National Test-Based Selection (SNBT), which replaces the former system known as the Joint Entrance Selection of State Universities (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national selection test is held every year for university candidates. It is a nationwide online test (subjects: mathematics, Indonesian language, English, physics, chemistry, biology, economics, history, sociology, and geography).

3. Independent Selection for Higher Education Entrance (SMMPTN). New students are selected based on specific criteria (academic merit, special needs etc.) as defined by UHO for prospective students that haven not been accepted through SNBP or SNBT.

The entrance requirements are prepared by the universities and then forwarded to the National Testing Agency for State Universities to be accessible to all SNBP and SNBT applicants. The number of BBE applicants fluctuated from 2018 to 2022 and tended to decline during the pandemic. The capacity of the BBE programme is 80-100 new students per year. The exact numbers for the BBE programme from 2018 to 2022 are shown in the following table:

Admission System	2018			2019			2020			2021			2022		
	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat
SNMPTN	238	23	1:10	130	9	1:14	113	34	1:3	153	34	1:5	133	30	1:4
SBMPTN	547	19	1:28	423	25	1:16	177	48	1:4	158	47	1:3	171	39	1:4
UHO Campus Admission Test	119	25	1:5	119	23	1:5	165	43	1:4	165	38	1:4	113	20	1:7
Total	904	67	1:13	672	57	1:11	455	125	1:4	476	119	1:4	417	89	1:5

Table 1: BBE Admission Statistics (2018-2022), Source: SAR UHO

The experts see that the Bachelor's degree programme Biology Education receives many applications and the demand is higher than the number of available study places. During the last five years, between 904 (2018) and 417 (2022) candidates applied for the programme. The acceptance quota is rising, which is due to the declining number of applications.

This observation also applies to the BME programme, which also has a capacity of 80-100 new students per year. From 2018 the number of application decreased from 743 to 352. The exact numbers for the BME programme from 2018 to 2022 are shown in the following table:

Admission System	2018			2019			2020			2021			2022		
	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat	App	Acc	Acc Rat
SNMPTN	251	23	1:10	194	18	1:10	205	35	1:6	163	34	1:4	168	36	1:4
SBMPTN	415	24	1:17	345	49	1:7	183	46	1:4	183	46	1:3	149	45	1:3
UHO Campus Admission Test	77	26	1:2	114	32	1:3	60	38	1:2	40	39	1:1	39	35	1:1
Total	743	73	1:10	653	99	1:6	448	119	1:4	386	119	1:3	352	116	1:3

Table 2: BME Admission Statistics (2018-2022), Source: SAR UHO

The experts discuss with the programme coordinators why the number of applications has declined in both programmes in the last few years. They learn that there are similar study programmes in Southeast Sulawesi since some years, so there is more competition among the universities. In addition, tuition fees at UHO are higher than at other smaller universities in the area.

Undergraduate students at UHO have to pay tuition fees. The fees for each Bachelor's degree programme vary according to the operational costs of learning. In addition, the fees for each student are also different according to the financial ability of their parents. The lowest fee for BBE and BME is currently IDR 500 000 (EUR 28.40) and the highest IDR 4 500 000 (EUR 255.65) per semester.

Several grants for students with financial difficulties are available, such as from the government, industries, and foundations. Some senior students work as teaching assistants to earn some money for financing their studies.

The details of the application process at UHO and further information on admissions criteria and deadlines can be found in the UHO New Student Admission Regulation for Undergraduate Programmes.

In summary, the experts find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

Criterion 1.5 Work load and credits

Evidence:

- Self-Assessment Report
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Based on the National Standards for Higher Education of Indonesia (SNPT), both programmes under review use a credit point system called SKS.

For regular classes, 1 SKS of academic load for the undergraduate programme is equivalent to 3 academic hours, which equals 170 minutes. This includes:

- 50 minutes of scheduled contact with the teaching staff in learning activities,

- 60 minutes of structured activities related to lectures, such as doing the assignments, writing papers, or studying literature,
- 60 minutes of independent activities outside the classroom to obtain a better understanding of the subject matters and to prepare academic assignments such as reading references.

For lab work, final project, fieldwork, and other similar activities, 1 SKS is equivalent to 3 to 5 hours a week of student's activities. The details and the students' total workload are described in the respective module description.

Bachelor's students with high academic achievement can take more courses (up to 24 SKS) to speed up their studies; the academic advisor must approve this.

According to the submitted Rector's decree, UHO uses a fixed conversion factor of 1.7 between SKS and ECTS points. The reasoning behind this calculation is that one SKS equals 170 minutes (2.833 hours). As the semester lasts for 16 weeks 2.833 x 16 = 45,328 hours per semester. This total workload is then divided by 26.7 to get the conversion factor: 45.33 / 26.7 = 1.7. However, this implies that UHO calculates 26.7 hours of students' total workload for one ECTS point. This fact is stated in no regulation and is in contradiction to the workload calculation in the module description. Here, it is mostly 27 hours per one ECTS point.

The experts point out that there can be no fixed conversion rate between SKS and ECTS points. Therefore, the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course. Especially the courses with the high share of self-studies (KKN, PLP, and Bachelor's thesis) show, that the students spend much more time on their final projects than is currently reflected in the awarded ECTS points. UHO should follow the ECTS Users' Guide to determine the students' total workload. As described in the ECTS Users' Guide, the estimation of students' workload should include all learning activities. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations). In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students.

Since workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from this estimate. Individual students differ: some progress more quickly, while others progress more slowly. Therefore, the workload estimate should be based on the time an "average student" spends on self-studies and preparation for classes and exams. The initial estimation should then be verified via students' satisfaction questionnaires.

Since the workload of the students was only estimated by the programme coordinators and seems to be too low in comparison to the actual time needed by the students, the experts ask UHO to verify the students' total workload and to adjust the awarded ECTS points. This could e.g. be done by including a respective question in the satisfaction questionnaires. In any case, UHO must make sure that the actual workload of the students and the awarded ECTS credits correspond with each other and make that information transparent in the module descriptions and the study plans. Additionally, UHO needs to define in an official regulation, how many hours of Students' total workload are required for one ECTS point.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Various teaching and learning methods such as lectures, class and group discussions, case studies, demonstrations, assignments, simulations, experiments, field studies, teaching practise, and problem-based learning are applied in both undergraduate programmes under review. Structured activities include homework, assignments (reading or problem exercises) and practical activities. Group project assignments are given in some courses to develop students' skills in teamwork, communication, and leadership. The assignments and exercises should help students to develop their abilities with respect to critical thinking, written/oral communication, data acquisition, problem solving, and presentations.

Students are further encouraged to apply their knowledge in a series of student projects that are oriented towards teaching practice in the classroom and in laboratories. Classes and laboratories are designed in problem-based learning settings in order to introduce student-oriented teaching methods to involve all students in the learning processes and to develop their thinking and analytical skills. Problem based learning and student centred learning is used in several courses and students are assigned to group projects and have to present their findings in front of the class. In addition, teaching practice in form of school internships is also part of the curriculum. Moreover, students gain practical experience through the PLP (Field School Internship) and KKN (Student Community Service) activities

that integrate teaching practice with community service, so that students are expected to be able to identify, analyse and solve problems in the school and its environment.

The most common method of learning is class session, with several courses having integrated laboratory work. Lecturers generally prepare presentations to support the teaching process. In addition, several courses include teaching practice sessions or micro-teaching (i.e. students presenting teaching practice trials in front of their peers). With individual or group assignments, such as discussions, presentations, or written tasks, students are expected to improve their academic as well as their soft skills. Laboratory work covers laboratory preparation, pre- or post-tests, laboratory exercises, reports, discussions, and presentations. In addition, practical activities should enable students to be acquainted with academic research methods.

In summary, the experts consider the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concept of both undergraduate programmes comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

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

The experts thank UHO for explaining that the Career Centre has several offers to prepare students for the job market. This includes (1) Job Preparation Test Guidance; (2) Job Fair; (3) Soft Skill Development Training; (4) National career Centre seminar; (5) Socialization of the Entrepreneurial Student Development Program; (6) Entrepreneurship Training; (7) Get involved in the Career Acceleration Program (8) UHO Entrepreneurship Festival. The experts point out that these are all extra-curricular activities. In addition, UHO should offer more electives to better support students who want to become entrepreneurs.

The experts acknowledge that the programmes will carry out a curriculum review and will consider whether the profile and the intended learning outcomes needs to be reviewed with respect to the goal of becoming a “researcher”.

The experts understand that UHO offers several interdisciplinary courses and students are assigned problems related to science. However, the experts suggest that UHO offers some courses for specifically teaching students about “science education” so that they are better prepared to teach respective courses in high school.

The experts support UHO's plan to integration digital teaching and learning technologies in the study plans and to provide specific training for students on the use of AI.

The experts appreciate that UHO will restructure the study plans with regards to PLP by bringing it forward to the fourth semester.

With respect to the conversion of SKS into ECTS points, the experts emphasise that a fixed conversion rate, even it makes a difference between lectures and practical courses, is not useful. Instead, UHO should ask the students how much time the really spend on self-studies for each course and then calculate the ECTS points accordingly. The details are described in the ECTS Users' Guide.

The experts consider criterion 1 to be mostly fulfilled.

2. Exams: System, concept and organisation

Evidence:

- Self-Assessment Report
- Module descriptions
- UHO Academic Guide
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the Self-Assessment Report, the students' academic performance is assessed by on assignments, laboratory work, mid-term exam, and final exam. The form of each exam is mentioned in the module descriptions that are available to the students via UHO's homepage. Usually, there are two written exams in each course (besides the assignments, homework, and presentations); the mid-term exam is conducted in the 8th week of the semester and the final exam in the 16th week. Student attendance needs to be at least 80% of the number of scheduled lectures.

The most common type of evaluation used are written examinations; however, quizzes, laboratory work, assignments (small projects, reports, etc.), presentations, seminars, and discussions may contribute to the final grade. Written examinations, either closed-book or open-book, typically include short answers, multiple-choice questions, fill-in texts, problem-solving or case-based questions, and calculation problems. Some lecturers also give multiple choice or true-false questions in examinations or quizzes. The grade from labora-

tory work usually consists of laboratory skills, discussions, reports, and oral exams. Students are informed about mid-term and final exams via the Academic Calendar. Students can access their results via UHO's digital learning management system SIAKADBETA.

Student competencies during the school internship are guided and assessed by lecturers, tutor teachers, and school principals from partner schools. The assessment is conducted based on students' competencies in using learning tools, teaching materials, learning media, and assessment instruments. In addition, students are also required to be able to identify learning problems in the classroom and propose solutions. The assessment of the community service consists of a work plan, programme implementation, and activity report.

Every undergraduate student is required to do a final project (Bachelor's thesis). This project is conducted independently under the guidance of one or more supervisors and usually consists of literature study, practical research, and data analysis. Both the student and his /her supervisors might decide the topic and content of the project. In many cases, the lecturers offer particular topics connected to their research. The final project includes the proposal exam, which aims to determine whether the problem proposed by the student is appropriate, and the findings seminar, which is held after the student has carried out the research activities and has written a thesis report. This seminar is designed to provide suggestions for improving the written thesis. Finally, there is the thesis exam, during which the students have to present their results and defend them in an oral presentation. The thesis exam is attended by the thesis supervisor as well as two examiners.

The maximum score that a student can get in a course is 100 and the minimum score to pass the course is > 36. If a student fails, she or he usually has to repeat the entire module in the following semester; it is usually not possible to retake just parts of the course or to just retake the final exam. However, mid-term exams can be repeated (remedy) but if a student fails the final exam, she or he has to retake the whole course in the next semester. As an alternative to retaking the course in the next semester, students can also join the short semester during the summer time. In this short semester, students can repeat some of their courses. The grading scheme is shown in the following table:

Score Range (Scala 100)	Number	Letter
81-100	4,00	A
66 - 80,99	3,00	B
51 - 65,99	2,00	C
36 - 50,99	1,00	D
< 35,99	0,00	E

Table 3: Grading Scheme Source: SAR UHO

The absence of students in the midterms and finals due to illness or otherwise is remediable by taking the exam later. Students, who cannot attend practical courses for acceptable reasons (e.g. illness), can repeat the practicum later; the lecturers are responsible for the arrangement. Students with special needs are provided with support to enable them to participate in the academic activities and exams. Within two weeks after the announcement of the final grades, students can ask for explanations and can appeal their grades.

The students appreciate that there are several short exams instead of one big exam and confirm that the exam load is appropriate and they are well informed about the examination schedule, the examination form, and the rules for grading.

With respect to the exams in BBE, the experts are convinced that it would be useful to put more emphasis on questions related to transfer skills and critical thinking. The mid-term and final exams should not only verify that the students have learned the content by heart but that they understand the context and the reasoning behind it and are able to apply the acquired knowledge to new areas. In general, the examinations focus on learning by heart and too little on the ability to solve problems by self-determined application of what has been learnt.

The form of exams needs to be aligned with the intended learning outcomes. Transfer and problem solving skills as well as critical thinking cannot be verified by multiple choice questions or fill-in texts. More complex exam forms like essays, or open questions and oral exams should be applied to verify if students have achieved the intended competencies. This is especially important for more advanced topics in the higher semesters. The discrepancy between the intended learning outcomes in the module descriptions and the actual examination methods need to be solved; the exams need to be competency oriented.

This easily can be improved but it requires more effort and open minded thinking from the lecturers to design such exams and handle/accept even “unusual” solutions given by the students. The students should be motivated to think freely and to be brave to present own results which cannot be found directly in a textbook. The experts point out that this is especially relevant for mid-term and final exams. Students should be trained in critical and analytical thinking and not only learn facts by heart; this should be reflected in the written exams. In addition, the share of exam questions dealing with transfer skills should be increased in the course of the degree programmes and should be highest in the latest semesters.

The experts also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples.

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

The experts emphasise that in the Biology Education programme, the discrepancy between the intended learning outcomes in the module descriptions and the actual examination methods needs to be solved. The exams need to be competency oriented and should put a stronger focus on transfer skills and critical thinking. UHO should submit sample exams and updated module descriptions as a verification of the implemented improvements.

The experts consider criterion 2 to be mostly fulfilled.

3. Resources

Criterion 3.1 Staff and Development

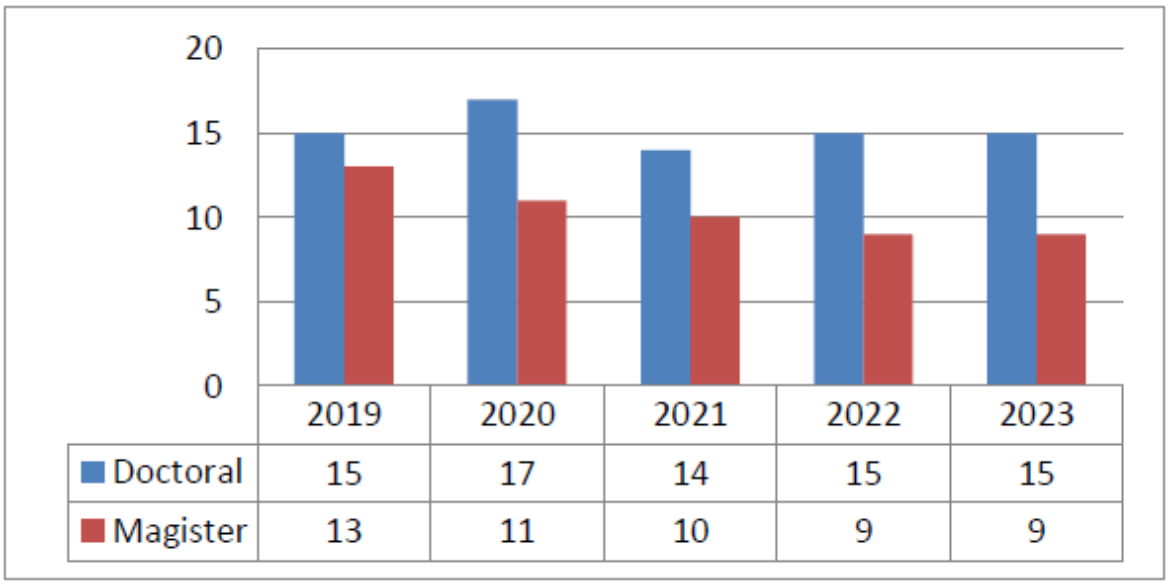
Evidence:

- Self-Assessment Report
- Staff Handbook
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:

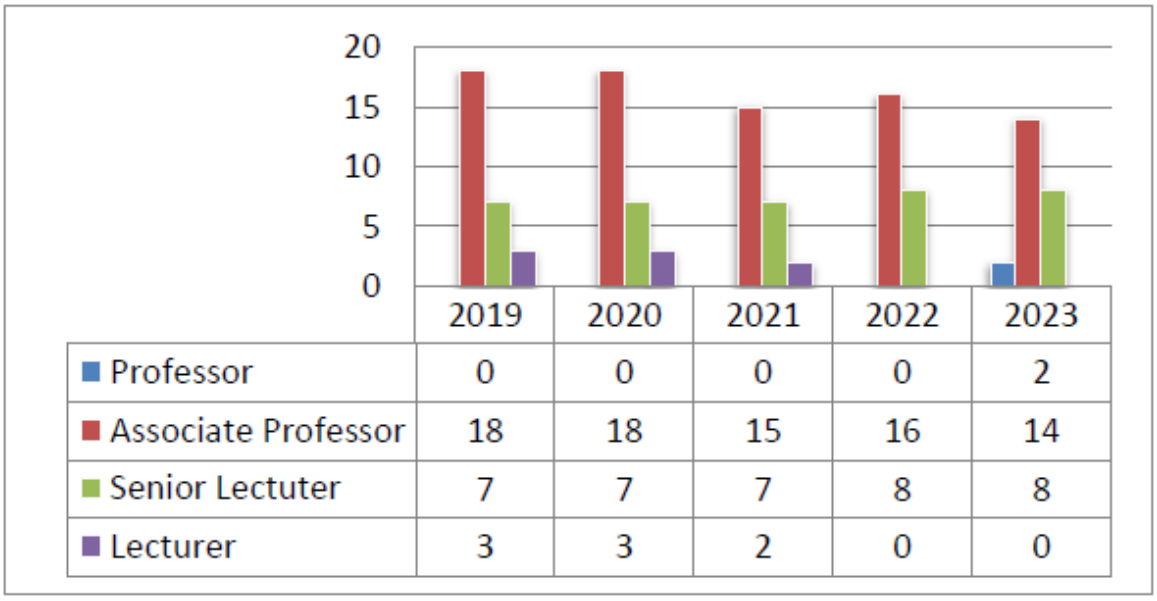
At UHO, the staff members have different academic positions. There are professors, associate professors, assistant professors, and lecturers. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, a full professor needs to hold a PhD degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position.

According to the Self-Assessment Report, the teaching staff in the BME programme currently consists of 24 persons with academic ranks. There are two professor, 14 associate professors, and 8 senior lecturers. Fifteen teachers hold doctoral degrees and nine teachers have a Master's degree. The ratio of permanent lecturers to active students in BME is 1:17.8 (in 2022). This is considered ideal based on the provisions of the Directorate General of Higher Education of the Republic of Indonesia, which requires a ratio of at least 1:30. The details are shown in the following to diagrams:



	2019	2020	2021	2022	2023
Doctoral	15	17	14	15	15
Magister	13	11	10	9	9

Diagram 1: Teachers' Academic Qualification BME, Source: SAR UHO



	2019	2020	2021	2022	2023
Professor	0	0	0	0	2
Associate Professor	18	18	15	16	14
Senior Lectuter	7	7	7	8	8
Lecturer	3	3	2	0	0

Diagram 2: Teachers' Academic Rank BME, Source: SAR UHO

In 2022, there were 21 permanent lecturers in the BBE programme: one Professor, seven Associate Professors, five Assistant Professors, four Senior Lecturers, and four Junior Lecturers. Eleven teachers hold doctoral degrees and ten teachers have a Master's degree. The ratio of permanent lecturers to active students in BBE is 1:21 (in 2022).

Diagram 3: Teachers' Academic Qualification BBE, Source: SAR UHO

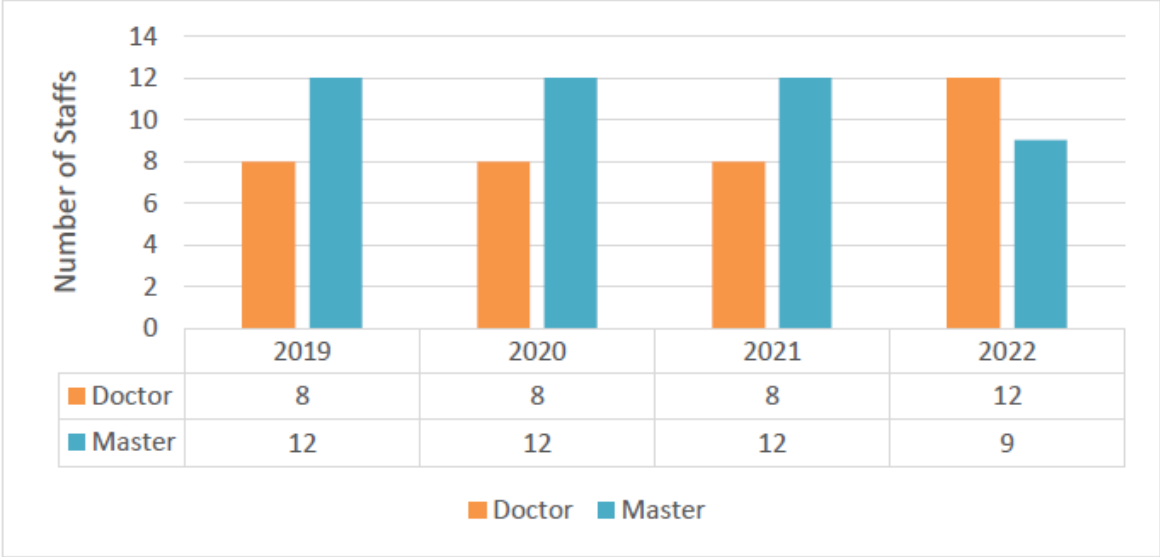


Diagram 4: Teachers' Academic Rank BBE, Source: SAR UHO

In addition, there are several supporting staff at FKIP such as laboratory technicians, administration staff, and general services. Finally, UHO regularly invites international guest lecturers from Australia, USA, Belgium, or Malaysia to give classes.

Details of the academic qualifications of the teachers are described in the staff handbooks, which are accessible via the respective department's webpage. All fulltime members of the teaching staff are obliged to be involved in (1) teaching/advising, (2) research, and (3) community service. However, the workload can be distributed differently between the three areas from teacher to teacher. In addition, there are non-academic staff members consisting of librarians, technicians and administrative staff.

The experts discuss with UHO's management how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UHO's management, which subsequently announces the vacancies on UHO's webpage. One way to recruit new teachers is to send promising Master's students from UHO abroad to complete their PhD and then to hire them as teachers when they are finished. Nevertheless, UHO also hires graduates from other universities. Vacancies are announced nationally, so UHO gets applications from other universities.

During the audit, the experts inquire how high the teaching load is and if enough opportunities are offered to the academic staff members to conduct research activities. They learn that teachers at the Faculty of Teacher Training and Education have a total workload of 12 to 16 credits; the national maximum is 16 credits. One credit is equivalent to 170 minutes of work per week with about one hour contact time. How much time staff members actually devote to research is different from teacher to teacher, because working hours are spent flexibly for teaching, research, and community service.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining both degree programmes.

Staff Development

UHO encourages training of its academic and technical staff for improving the educational abilities and teaching methods. As described in the Self-Assessment Report, faculty members attend courses in English language training, Information and Communications Technology (ICT), laboratory safety and instrumentation, writing publications, and e-learning. Furthermore, Applied Approach (PEKERTI-AA) is a compulsory training for all staff members that focuses on advancing pedagogical knowledge. It is designed particularly for junior faculty members to introduce various teaching methods, learning strategies, preparation of assessments, class management, as well as syllabus and course content development. All teachers at UHO are obligated to attend the lecturer certification programme held by the Directorate General of Higher Education (Direktorat Jenderal Pendidikan Tinggi Ditjen, DIKTI). An official teaching certificate is issued after the faculty member has completed the certification process. In addition, the study programmes organise trainings to upgrade lecturers' pedagogical content knowledge on a regular basis.

During the audit, the experts inquire if the teaching staff has the opportunity to spend time abroad and to participate in international projects. They learn that UHO provides funds for joining international conferences. Moreover, teachers have the opportunity to receive

funding from the Ministry of Research, Technology and Higher Education. The funding covers conference and publication fees, and expenses for accommodation and traveling. The teachers are satisfied with the existing opportunities and the available financial support.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UHO, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars. With respect to English proficiency, the experts emphasise that delivering part of the lectures in English is highly encouraged. Teachers should be supported to be fluent in communication in the English language.

In summary, the experts confirm that UHO offers sufficient support mechanisms and opportunities for members of the teaching staff who wish for further developing their professional and teaching skills.

Student Support

UHO offers a comprehensive advisory system for all undergraduate students. At the start of the first semester, every student is assigned to an academic advisor. Each academic advisor is a member of the academic staff and is responsible for several students from her/his classes. He/she is the student's first port of call for advice or support on academic or personal matters.

The role of the academic advisor is to help the students with the process of orientation during the first semesters, the introduction to academic life and the university's community, and to respond promptly to any questions. They also offer general academic advice, make suggestions regarding relevant careers and skills development and help if there are problems with other teachers. During the semester, counselling activities are usually offered three times, namely at the beginning of the semester (before the courses start), mid-semester, and at the end of the semester. The students confirm during the discussion with the experts that they all have an academic advisor, whom they can approach if guidance is needed.

In general, students stress that the teachers are open-minded, communicate well with them, take their opinions and suggestions into account, and changes are implemented if necessary.

Students who prepare their thesis have one or more supervisors, who are selected based on the topic of the final project. The role of the final project supervisor is to guide students in accomplishing their final project, e.g., to finish their research and complete their final project report.

All students at UHO have access to the digital learning management system SIAKADBETA. The students' profiles (student history, study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via this digital platform.

Finally, there are several student organizations at UHO; they include student's activity clubs, which are divided into arts, sports, religious and other non-curricular activities.

The experts notice the good and trustful relationship between the students and the teaching staff; there are enough resources available to provide individual assistance, advice and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well informed about the services available to them.

Criterion 3.2 Funds and equipment

Evidence:

- Self-Assessment Report
- Visitation of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Basic funding for both programmes and the facilities is provided by UHO and the Faculty of Teacher Training and Education. The financial sources are government funding which contribute to around 50% to the total budget and which cover the salaries of all employees. The rest of UHO's funds are mostly derived from students' tuition fees.). Moreover, UHO cooperates with local governments in Southeast Sulawesi and receives some funding from them. Additional funds for research activities can be provided by UHO or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them.

The annual budget of the Faculty of Teacher Training and Education is determined at university level. Every year, UHO's management will ask the faculties to prepare an activity plan and a budget for the next period. The activity and budget planning is presented and discussed during the management meetings at faculty level, and subsequently forwarded to UHO's management.

FKIP has a micro teaching laboratory, where a group of students can do micro teaching sessions while being observed by other students and teachers. This learning laboratory is well equipped and suitable for providing learning experiences to prospective teachers under the guidance of lecturers. The laboratory is led by a head and assisted by a secretary

and one coordinator for each department/study programme. However, the experts notice that only one micro teaching laboratory exists at UHO and FKIP alone has 21 departments. For this reason, the experts suggest establishing another micro teaching laboratory so that students can have more hands-on experience with micro teaching.

Besides the facilities at the Faculty of Teacher Training and Education, there is the integrated laboratory, which offers laboratory classes for subjects such as fundamental physics, chemistry, and general biology. In the field of research, there are several laboratories: biochemistry, molecular biology, biotechnology, microbiology, materials sciences, energy, electronics, and instrumentation. Other services include testing and analysis of soil, water, food samples, etc.

During the audit, the expert group also visits the laboratories in the Faculty of Teacher Training and Education and the Integrated Laboratory in order to assess the quality of the facilities and the technical equipment. They notice that there are no severe bottlenecks due to missing equipment and confirm that the laboratories are equipped with the necessary basic equipment. However, the instruments and devices are outdated and do not meet modern standards. There is a need to enhance this situation. Introducing modern technical equipment would be necessary to fulfill UHO's vision of "developing education through global collaborative research". This would be essential to facilitate a better learning environment for students.

With respect to the BME programme, the experts point out that it would be necessary to expand and update the computer equipment. In addition to projection devices, new PCs, interactive media tools like smart boards as well as mobile devices such as laptops and/or tablets should also be considered. Furthermore, the training in the use of current digital tools in school teaching should be further promoted and deepened, with "GeoGebra" being particularly noteworthy. The experts also could not find other mathematical software such as MATLAB and R for data analysis and visualisation. The Mathematics Learning Laboratory is equipped with basic demonstration tools and conventional materials such as wood. However, advanced equipment to support innovative and interactive technology-based research was not evident. The layout of the laboratory appears quite simple and it remains unclear if the room is also used for teaching practise. A rearrangement of the laboratory with chairs, tables and some additional furniture would provide a more supportive and engaging learning environment.

The expert group understands that modern equipment for sophisticated laboratory work, sufficient in terms of quality and quantity, is not available and that the funds are limited. For this reason, the experts expect UHO to provide a concept, a reliable financial plan, and

a timetable for stepwise increasing and upgrading the technical equipment used for teaching, education and research in the laboratories.

One critical point from the experts' point of view is the fact that all of the visited laboratories, especially in the Integrated Laboratory, do not follow international safety standards. The experts point out that the basic personal protective equipment that needs to be available to all persons working in laboratories includes safety goggles, laboratory coats, and hand gloves. It should be worn when working in the laboratory with chemicals and when conducting sensitive experiments. Students should be trained in the right use of the equipment (e.g. the need to change contaminated gloves before touching a door handle or a keyboard, which also might be used by persons not wearing safety gloves). The personal protective equipment should be stored separately from street clothes. In addition, working safety hoods should be available in all labs (with exhaust to the outside) and chemicals and solvent containers should be labeled properly and be stored in special lockers with exhausts leading outside the labs. Moreover, there should be emergency exit signs and posters with the safety regulations. Finally, it is important that all students know how sterile work in a laboratory is conducted and that at least once year a safety inspection of the laboratories is done.

The experts stress that there are many hazardous substances and instruments used in the laboratories, which causes a significant risk of accidents and presents a danger to human health, and the natural environment. This demands care in order to protect human health, conserve the natural environment and to prevent laboratory accidents. As a consequence, UHO needs to draw up a plan, how the internationally accepted safety standards are adopted in all laboratories in the near future.

At UHO, there is the Career Development Center (PK2M), which offers help to find suitable internships, announces job vacancies, organises job fairs, and offers courses to develop soft skills. Finally, there are several supporting facilities such as Mosque, Medical Centre, Student Dormitory, Cafeteria, Pharmacy, Sport Facilities, and Language Center.

The students also express their satisfaction with the library and the available literature there. Remote access via VPN is possible and UHO offers access to several scientific digital databases such as ScienceDirect and Scopus, so that teachers and students can access current scientific papers, e-books, and journals. However, during the visit of the library, the experts observe that it would be necessary to expand and update the book collection. It would also be useful for the library to organise activities that can raise students' interest in visiting and enjoying reading collections in the library. This will have a good impact on improving the academic atmosphere at UHO.

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

The experts thank UHO for explaining that FKIP has 21 study programmes. There are 15 study programmes that use the microteaching laboratory facilities, while 6 study programmes do not use microteaching. The arrangements for using the microteaching laboratory are divided into two parts, namely 8 study programs in odd semesters and 7 study programs in even semesters. With this division, the laboratory space can facilitate all study programs at FKIP. The experts point out that the division in even and odd semesters show that the demand for the microteaching laboratory is high and can only be met by offering the respective courses only every second semester. For this reason, the experts are still convinced that it would be useful to open a second microteaching laboratory at FKIP.

The experts point out that it is important to update the instruments and the technical equipment and to provide more working places in the laboratories. Moreover, all laboratories need to follow international standards with respect to the safety standards.

The experts consider criterion 3 to be partially fulfilled.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Self-Assessment Report
- Module descriptions
- Homepage Universitas Halu Oleo: https://uho.ac.id
- Homepage Faculty of Teacher Training and Education: http://fkip.uho.ac.id/
- Homepage Mathematics Education: http://fkip.uho.ac.id/pmat/
- Homepage Biology Education: http://fkip.uho.ac.id/pbio/

Preliminary assessment and analysis of the experts:

After studying the module descriptions of both programmes, the experts confirm that they include all necessary information about the persons responsible for each module, the teaching methods and work load, the awarded credit points, the intended learning outcomes, the content, the applicability, the admission and examination requirements, and the forms of assessment and details explaining how the final grade is calculated.

However, the experts need to point out that some module descriptions are missing. For example, the module descriptions for the community service (BME + BBE), for the teaching internship PLP (BME), and thesis (BBE) are not included in the module handbook. Additionally, the module handbook of BME should have a list of all modules at the beginning. For this reason, the experts expect UHO to submit a complete module handbook for both programmes. Moreover, several literature references are quite old and should be updated.

Finally, the module descriptions should be available to all other stakeholders, e.g. by publishing them on the programmes' homepages (see criterion 4.3).

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Sample Transcript of Records for each degree programme
- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the experts:
The experts confirm that all students are awarded a Degree Certificate, a Transcript of Records, and a Diploma Supplement after graduation. The Diploma Supplement contains all required information about the degree programme. The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Report
- All relevant regulations as published on the university's webpage

Preliminary assessment and analysis of the experts:
The experts confirm that the rights and duties of both UHO and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the course material at the beginning of each semester.

However, the experts emphasise that the relevant information about the degree programmes (e.g., module handbook, study plan, intended learning outcomes) need to be

available to all stakeholders. To this end, it would be very useful to publish them on the English homepages of the programmes.

Additionally, the experts point out that the study plans of both programmes should be updated in order to make transparent what are electives and a list of possible electives needs to be added.

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

The experts expect UHO to submit complete and updated module handbooks for both programmes in the further course of the accreditation procedure. In addition, it is necessary to have separate English homepages for each of the two programmes, which need to include the essential information about the degree programme (profile, intended learning outcomes, study plan, and module descriptions).

The experts consider criterion 4 to be mostly fulfilled.

5. Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- UHO Academic Guide
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The highest academic board at UHO is the University Senate, which is responsible for implementing and supervising all academic processes at UHO. Under the leadership of the Rector, UHO has four Vice Rectors, two heads of institutes (the Institute for Research and Community Service and the Institute for Educational Quality Assessment and Development), 14 Deans, one Director of Graduate Studies, as well as seven Heads of Technical Service Units (Library, Language Center, Botanical Garden, Integrated Laboratory, Information Technology Center, Archives, and Entrepreneurship and Student Career Development Unit). Members of the University Senate are teachers from each faculty, Rector, the Vice Rectors; the Deans, and the Heads of Institutions. On university level, there is also the Advisory Board of UHO, which reviews and gives suggestions with respect to the Rector's

policies in the non-academic field. The Advisory Board consists of at least five members, who come from regional governments, communities, educational institutions, and companies.

The Faculty is led by the Dean and assisted by three Deputy Deans, consisting of the Deputy Dean for Academic Affairs, Deputy Dean for General Administration, Planning and Finance, Deputy Dean of Student and Alumni Affairs. The Dean leads the implementation of education, research and community service, develops educational staff, students and faculty administrative staff. The Faculty Senate consists of the Dean, the Deputy Deans, the Heads of Department, professors, Head of laboratories and lecturers representing study programs. The Faculty Senate is authorized to formulate policies and to monitor all academic activities at faculty level, in this case the Faculty of Teacher Training and Education. Finally, for each degree programme there is the Head of Study Programme, who is responsible for implementing all educational activities within the respective degree programme.

The experts discuss the quality management system at UHO with the programme coordinators. The experts learn that there is an institutional system of quality management aiming at continuously improving the degree programmes.

This system relies on internal (SPMI) as well as external (SPME) quality assurance. SPMI encompasses all activities focused on implementing measures for improving the teaching and learning quality at UHO. SPME focuses on both national and international accreditations. Every degree programme and every Higher Education Institution in Indonesia has to be accredited by the National Accreditation Board of Higher Education / Badan Akreditasi Nasional Perguruan Tinggi (BAN-PT). Both degree programmes under review have received the highest accreditation status “Excellent” from BAN-PT.

The policy on quality assurance is developed on university level by the Institute for Development and Quality assurance of Education (LPPMP) at university level, the Quality Assurance Unit (Gugus Penjaminan Mutu/ GPM) at the Faculty of Teacher Training and Education, and the Quality Assurance Working Group (Gugus Kendali Mutu/ GKM) at programme level. Quality assurance is commenced through the annual Internal Quality Audit (AMI), which is performed collectively by GPM and GKM. The results are presented to the Faculty Senate and the Dean. The structure is depicted in the following diagram:

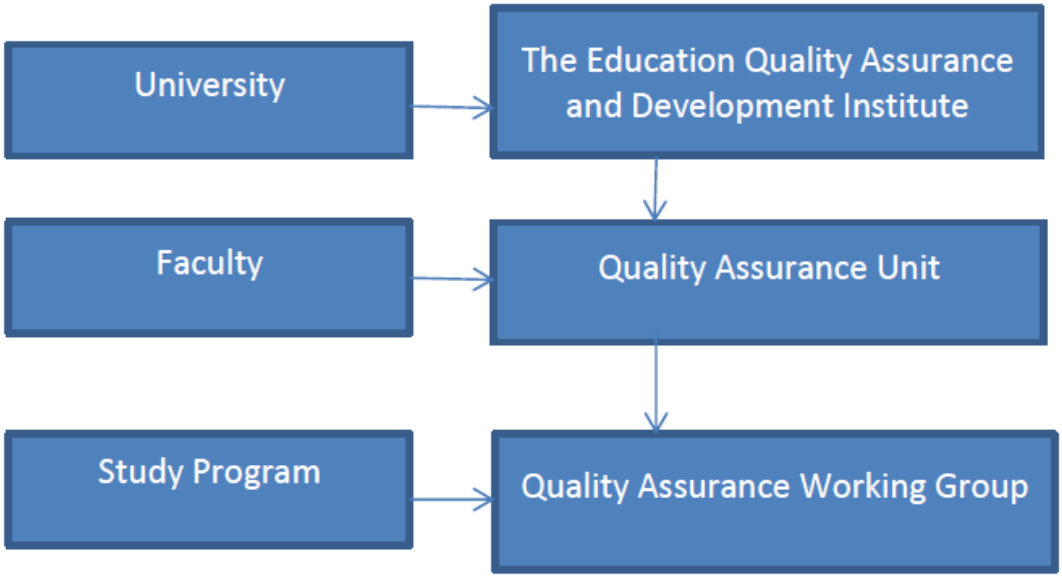


Diagram 5: Internal Quality Assurance, Source: SAR UHO

Internal assessment of the quality of the degree programmes is mainly provided through teacher, student, alumni, and employer surveys. The students give their feedback on the courses by filling out the questionnaire online each semester. Students assess various aspects such as students' understanding, lecturer's responsiveness, course delivery, lecturer's proficiency, explanation of course objective, and references in each enrolled course. Students' opinion is quantified by means of index 1 (unsatisfactory) to 4 (very good).

The students' feedback is given through online questionnaires, which are prepared by LPPMP for all degree programmes at UHO. The questionnaire consists of 26 questions concerning the quality of administrative services, learning process services, student services, and workload. Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on the university's digital platform. The data generated from students' feedback is then analysed by the GKM, which then forwards the results to the Head of Study Programme and the Dean. The action plan, which based on the results of the satisfaction questionnaires, is published on UHO's webpage so that students and other stakeholders are informed about the measure intended to improving the respective degree programmes. The experts notice that the students are not well informed about the availability of the reports. To this end, the students should get notified when and where the results are published. Additionally, UHO should make sure and make transparent, that suitable measures are implemented to solve the issues mentioned in the quality assurance reports.

In addition, the Faculty of Teacher Training and Education regularly conducts an alumni tracer study. By taking part at this survey, alumni can comment on their educational experiences at UHO, their professional career, and can give suggestions how to improve the programme. The tracer studies show that around 70% of the graduates of both programmes work as school teachers. The rest either continue their academic qualification or work as instructors in the education area. A few have founded their own businesses. In general, the graduates have very good job perspectives as students, alumni, and employer confirm during the audit.

During the audit, the experts learn that students are not represented in the university's boards. Thus, students are not directly involved in the decision-making processes. The experts are convinced that it would be very useful to have student members in the different boards. For this reason, they recommend that student representatives should be members of the boards at UHO and be actively involved in the decision-making processes for further developing the degree programmes. For example, it would be useful to make student representatives members of the Quality Assurance Working Group on programme level.

The experts discuss with the representatives of UHO's partners from public institutions, and private companies if there are regular meetings with the partners on faculty or department level, where they discuss the needs and requirements of the employers and possible changes to the degree programmes. They learn that employers and alumni can give their feedback on the content of the degree programmes in the course of the tracer studies.

The experts appreciate that UHO stays in contact with its alumni and the employers. However, no academic advisory board exists. As the experts consider the input of the employers to be very important for the further development of the degree programmes, they recommend establishing an academic advisory board at FKIP in order to discuss regularly with about the needs of the job market and new developments in the area of science education.

The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university (e.g. high schools, training centers, and governmental institutions). Including students, professionals, and employers in the different boards will help further developing the degree programmes.

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

The experts thank UHO for explaining that the reports on the results of the satisfaction questionnaires can be accessed on mathematics educational website and the UHO Education Quality Assurance and Management Institute (LPPMP) website. Nevertheless, students are not well informed about this.

The experts appreciate that UHO stays in contact with its alumni and the employers. However, they are convinced that establishing an advisory board with external stakeholders would further improve the quality assurance processes. To this end, UHO should seriously think about changing their internal regulations accordingly.

The experts consider criterion 5 to be mostly fulfilled.

D Additional Documents

Before preparing their final assessment, the panel asks that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

- Complete module handbooks with descriptions of all courses

E Comment of the Higher Education Institution (22.08.2024)

UHO provides the following statement:

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
1	The Degree Programme: Concept, Content & implementation			
1.1	Objectives and learning outcomes of a degree programme (intended qualifications profile)	Students should develop a mathematical and logical reasoning and be familiar with the different areas of mathematics such as analysis, algebra, applied mathematics, computational mathematics, elementary mathematics, and statistics. Finally, graduates should be able to work with and manipulate mathematical properties and have an understanding of the underlying mathematical concepts. This should enable them to develop critical thinking skills and the ability to use modern mathematical learning and teaching methods. In addition, gradu-	In the BME Curriculum there are groups of courses that support the development of Mathematical Concept and Logical thinking abilities. Then BME courses are constructed to support students' critical thinking skills. On the other hand, in lectures students use modern equipment to solve cases in the fields of calculus, Linear Programming, Numerical Methods, etc. For example, the use of CAS (Computer Algebra System) in solving calculus problems. Classification of courses and use of learning software can be seen in the attachment.	Appendix: BME: Course Grouping CAS Use Project Appendix BBE: Course Grouping

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		ates should be capable to apply and evaluate modern methods and instruments of mathematics learning and teaching by using information and communication technology.		
		Supplementing the subject-related qualification objectives, students of both Bachelor's programmes should have adequate competences in oral and written communication skills, be capable of working autonomously as well as in a team-oriented manner, and be able to conduct research activities. Furthermore, they should have trained their analytical and logical abilities, are able to apply information and communication technology in the field of education, and show a social and academic attitude. Finally, students should acquire communicative and language skills and should develop a strategy for life-long learning.	To support oral and written communication skills, being able to work independently or in a team orientation, and being able to carry out research activities, at BME there are several courses that support these competencies, for example to support oral communication skills competencies, for example in Learning and Teaching courses, Learning strategies, Micro teaching, Calculus, students are trained to be able to communicate the assignments given to their classmates. To train writing and research skills, there are several supporting courses, for example, research methodology, qualitative research, classroom action research, mathematics education seminars. For more details on these groupings, see the attachment.	Appendix BME: Group of courses that support speaking and writing skills Appendix BBE: Group Of Courses That Support Comunication

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			Based on the curriculum owned by BBE, there are several courses that support students to have adequate competence in oral and written communication skills, as well as being able to work independently or in a team, and being able to carry out research activities. Furthermore, students are also trained to have analytical and logical skills, and be able to apply information and communication technology in the field of education, as well as demonstrate social and academic attitudes. BBE students also gain communicative and language skills and are able to develop strategies for lifelong learning.	
		How FKIP leaders prepare their graduates to be able to become researchers and entrepreneurs	Faculty leaders implement the University leadership policy, Chancellor's Regulation Number 1 of 2021 concerning the Independent Campus Learning (MBKM) policy within the UHO area, article 7 paragraph 1 concerning the mechanism for peak learning facilities outside the study program for UHO students within the UHO environment. Where each study program can take courses in other study programs that can support competencies as a researcher and entrepreneur profile.	Appendix; Student entrepreneurship development activities

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			The activity stages are as follows: first, the Head of the Study Program prepares a List of Courses which can be programmed by other students outside the study program via the academic information system (http://siakdbeta.uho.ac.id). Second, the Study Program carries out outreach to students about this policy. Third. During the course offering period, students are given the opportunity to program courses in other study programs through the academic information system Siakdabeta.uho.ac.id. with the approval of the academic advisor. To train students in entrepreneurship, the university through the career centre holds several activities such as: (1) Job Preparation Test Guidance; (2) Job Fair; (3) Soft Skill Development Training; (4) National career Centre seminar; (5) Socialization of the Entrepreneurial Student Development Program; (6) Entrepreneurship Training; (7) Get involved in the Career Acceleration Program (8) UHO Entrepreneurship Festival	

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		Experts suggest reviewing the profile of "researcher" graduates	The profile of graduates as researchers at BBE will be reviewed through the tracer study program and at the same time expand the research subjects in tracer study which will enable all graduates to be involved. Next, a curriculum revision will be carried out The profile of graduates at BBE is as researchers and entrepreneurs. Based on the results of the tracer study in 2022, there were several BBE graduates who became researchers and entrepreneurs, although at the time of the ASIIN visitation, graduates who worked as researchers were not present. Even in small quantities. However, the BBE is currently carrying out a curriculum review and will consider whether the profile needs to be maintained or reviewed.	**Appendix** Attachment of BBE Tracer Study Results
		How FKIP leaders should actively support young researchers in the didactics of mathematics and biology and carry out research in this field. To achieve this, a	FKIP leaders continue to actively support young researchers in the didactic fields of mathematics and biology and carry out research in this field by preparing research funds and as a mandatory requirement involving students in research activities.	**Appendix:** Research Assignment Letter

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		respective PhD position at FKIP is required		
1.2	Name of the degree programmes	-	-	-
1.3	Curriculum	Experts also point out that few interdisciplinary courses on science teaching are offered at UHO, even though this is supported by the Indonesian government and integrated science teaching is increasingly common in senior secondary schools in Indonesia	In BME, interdisciplinary courses or those related to science teaching are Calculus, Differential Equations, Initial Value Problems and Boundary Conditions, Ethnomathematics, Economic Mathematics, and Mathematical Modeling, Discrete Mathematics, Mathematics and Natural Science Studies and Insights, Linear Programming, Numerical Methods, in addition there are courses others use interdisciplinary contextual problems. In the lecture process, students are assigned to solve contextual problems, problems related to science. For example, in the Differential Equations Course, students apply the concept of 2nd order Differential Equations to solve problems with electrical circuits, spring forces, etc., which are proven in the form of projects. Student projects in solving contextual problems can be seen in the attachment.	Appendix BME: Student Projects in Integral Calculus, Differential Equations, Linear Programming, Economic Mathematics, Numerical Methods Interdispliner Courses Appendix BBE: Interdisipliner Courses

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			BME also adds interdisciplinary courses as elective courses, namely Coastal Ethnomathematics, Realistic Mathematics Education, Audio Visual Design, Digital Media Development for Mathematics Learning, and Instrument Development. The course handbook module document can be seen in the attachment.	Student Projects
		Additionally, it is highly recommended to introduce all students to digital teaching and learning methods; this includes teaching them about the proper use of AI.	In BBE, to support mastery of digital teaching and learning methods in preparing graduates who are competent and adaptive to technological developments. So there are steps we will take: 1. Integration of Digital Technology in the Curriculum: We will incorporate material on digital teaching and learning into the curriculum, especially in relevant courses. This includes the use of e-learning platforms, digital tools for visualization of biological data, and computer simulations and models. 2. Training on the Use of AI: We will provide specific training for students on the use of AI in the context of biology education. This will include the introduction of AI tools that can help in biological research, data analysis	Appendix BBE: Poadcast E-Practicum BME: Student projects related to artificial intelligence Thesis related to artificial intelligence

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			especially on personalization of learning, and the development of interactive learning materials. 3. Collaboration with Technology Experts: We will collaborate with technology experts and teachers who are experienced in the field of AI to hold workshops and seminars. This will provide students with practical insight into the applications of AI in biology education and research. In BME to support mastery of digital technology in mathematics education. There are several activities, namely: 1. Technology Based Learning: 2. Education about AI: 3. Digital Competency Development: BME uses AI in learning. For example, in solving contextual problems in Differential Calculus, Integral Calculus, Linear Programming courses. For example, using CAS (Geogebra), MatLAB, Tora. Evidence of the use of AI in	

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			learning can be seen in Student Projects. BME also provides students with the opportunity to complete a Final Assignment (Thesis) related to AI. Student products related to AI are the development of Augmented Reality (AR) media in mathematics learning at school. Student work related to AR can be seen in the attachment. The use of digital media in mathematics learning at BME provides students with the opportunity to explore and experiment freely, so that they can experience mistakes and repeat experiments if necessary. This can be seen from student products in completing projects assisted by learning software.	
		Experts believe that biology education students should be given more opportunities to explore and experiment freely, so that they can experience mistakes and repeat experiments if necessary.	BBE is developing practice guides based on critical thinking and problem-solving skills through a creative-problem solving (CPS) approach and supported by digital-based practicums	Appendix BBE: Project-Based Practicum Guide Field Practicum Video

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		Experts observe that PLP practical activities only last for four weeks at partner schools and are usually carried out in the sixth or seventh semester. The duration of current school practical training is relatively short compared to other teacher education programs and occurs very late in the study period. To achieve this goal, experts strongly recommend considering extending this period. In this context, a division into several subperiods can be carried out, of which the first subperiod can be established as early as possible in the study program (perhaps already in the 2nd year of study).	The study program will restructure the curriculum regarding PLP by bringing it forward to semester 4, in its implementation there will be monef in the middle of the semester. The PLP will refer to Ministerial Regulation Number 56 of 2022. Details of the implementation of the PLP are in accordance with the guidelines.	Appendix BBE: Curriculum Revision Document PLP Modul Handbook BME Curriculum Structure revision document Modul Handbook of PLP PLP Guided

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
	Student Mobility	According to the opinion of the expert group, the academic mobility of the students should be further promoted.	Efforts that have been made by Faculty Leaders, BME and BBE to increase student mobility are as follows: 1. The study program emphasizes the use of English or bilingualism in conducting lectures, using text books, and using PPT media in English. To train students' skills in mastering English, lectures use a cooperative model and present the results of discussions in English. The exam questions are presented in English. Before taking the thesis exam, students must take the Toefl Program and Toefl Results worth a minimum of 400. PLP activities at international standard schools, Ummushabri Kendari 2. To promote FKIP on an international scale, the Biology Education study program offers summer schools in the Manggrove course and Mathematics Education offers Ethnomathematics lectures based on local wisdom. 3. FKIP has held guest lectures with universities from MARA University of Technology, internationally renowned universities as guest lecturers (documentation attached)	Appendix BBE: Teaching Material in BBE MoU UHO with University Teknologi Mara Malaysia LoA SEAMEO_Sea Teacher Program Appendix BME: Teaching Material in BME MoU with UT MARA MoU Sea-Teacher Sea-teacher 2024

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			4. FKIP conducts collaborative research with universities in Malaysia (MoU) 5. Encourage FKIP students to participate in the Indonesian International Student Mobility Awards (IISMA), DAAD Program 6. Encourage FKIP students to always be involved in the Se-Teacher program (MoU)	
	1.4. Admision	The experts discuss with the programme coordinators why the number of applications has declined in both programmes in the last few years. They learn that there are similar study programmes in Southeast Sulawesi since some years, so there is more competition among the universities. In addition, tuition fees at UHO are higher than at other smaller universities in the area.	To maintain the number of student inputs in the BBE and BME study programs, the study program will do several things, for example 1. Improving the quality of academic and non-academic services in study programs and faculties 2. The tuition fees set are proportional to the standard of infrastructure available, for example, each lecture room is equipped with a smartphone, full AC, internet connection, comfortable seminar room, laboratory facilities. 3. FKIP UHO has built collaboration with the relevant government to provide scholarships. For example, providing scholarships from the provincial government (Sultra Smart); Regency Government (MoU), Konasara	Appendix: Modern Lecture Rooms Standarisasi Laboratorium Komputer Modern Biology Practicum Equipment Modern lecturer in BBM List of Regional Scholarship

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			and central government, for example the Smart Indonesia Card (KIP)	
	1.5 Work load and credits	The experts point out that there can be no fixed conversion rate between SKS and ECTS points. Therefore, the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course. Especially the courses with the high share of self-studies (KKN, PLP, and Bachelor's thesis) show, that the students spend much more time on their final projects than is currently reflected in the awarded ECTS points. UHO should follow the ECTS Users' Guide to de-termine the students' total workload. As described in the ECTS Users' Guide, the estima-tion of	BBE and BME programs after recalculating the conversion of credits to ECTS based on the workload of each course for courses with Theory and Practice construction, then 1 credit is equivalent to 45,333:27 = 1.7 ECTS. Then for courses with full practical construction, 1 credit is equivalent to 45.33:30= 1.5 ECTS (UHO Chancellor's Regulatory Document regarding Fixed Conversion of SKS Points with ECTS); Curriculum Structure; Handbook Module); (Microteaching, Seminar; Thesis, KKN, PLP)	Appendix: Struktur Kurikulum BME BBE Curriculum Structure Rector's Decree on the Establishment of ECTS Workload Student Instrument

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		students' workload should include all learning activities.		
	Exams: System, concept and organisation	With respect to the exams in BBE, the experts are convinced that it would be useful to put more emphasis on questions related to transfer skills and critical thinking. The mid-term and final exams should not only verify that the students have learned the content by heart but that they understand the context and the reasoning behind it and are able to apply the acquired knowledge to new areas. In general, the examinations focus on learn-ing by heart and too little on the ability to solve problems by self-determined application of what has been learnt.	At BBE, reconstruct exam questions from ganada options (short entries) to essay questions in the form of written or oral tests based on skills and critical thinking. These questions (attach exam questions)	Appendix BBE: Exam Revision
	3. Resources			

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
	Criterion 3.1 Staff and Development	The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualifica-tion programme at UHO, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars. With re-spect to English proficiency, the experts emphasise that delivering part of the lectures in English is highly encouraged. Teachers should be supported to be fluent in communication in the English language.	To support lecturers' mastery of communication skills in English, there are several things that are done: 1. In learning activities, lecturers provide lecture materials in English. 2. Then in lectures the lecturer uses bilingual Indonesian and English	Appendix BME: Teaching Material in english Appendix BBE: Teaching Material in English
	Criterion 3.2 Funds and equipment	The experts notice that only one micro teaching laboratory exists at UHO and FKIP alone has 21 departments. The experts suggest establishing another micro	1. FKIP has 21 study programs. There are 15 study programs that use microteaching laboratory facilities, while 6 study programs do not use microteaching la-	Appendix Microteaching Laboratory Usage Schedule

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		teaching la-boratory so that students can have more hands-on experience with micro teaching. They notice that there are no severe bottlenecks due to missing equipment and confirm that the laboratories are equipped with the necessary basic equipment. However, the instruments and devices are outdated and do not meet modern standards. There is a need to enhance this situation. Introducing modern technical equipment would be necessary to fulfill UHO's vision of "developing education through global collaborative research". This would be essential to facilitate a better learning environment for students.	boratory facilities, namely the Psychology Study Program, Guidance Counseling Study Program, Sports Science Study Program, Mathematics Education Master's Study Program, Language Teacher Master's Study Program, and Education Study Program Teaching Profession. The arrangements for using the Microteaching Laboratory are divided into two parts, namely 8 study programs in odd semesters and 7 study programs in even semesters. With this division, the laboratory space can facilitate all study programs at FKIP. Details of the use of the Microteaching Lab can be seen in the lecture schedule (attached) 2. The Mathematics Laboratory has various licensed mathematics learning software obtained through an LPTK grant from the Ministry of Education and Culture, Research and Technology in 2023. A list of mathematics learning software is attached. And the computer laboratory already has a smart board that can be connected to each student's PC and mobile device via an internet network connection (Photo of Smart board and PC) 3. Halu Oleo University has the latest e-books which have been officially purchased from the ProQuest institution as a supporter in implementing the tridharma of higher education. Which is accessed on	List of Software in mathematical instructional Smart Board in Computer Laboratory List of e-book in library UHO : https://ebookcentral.proquest.com/lib/unhalu-ebooks Report on training activities for the Revitalization of Educational Personnel Educational Institutions Modern Biology Practicum Equipment

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
			the page https://ebookcentral.proquest.com/lib/un-halu-ebooks . 4. The faculty has facilitated the use of AR, AI and VR-based learning media 5. The BME laboratory has a computer that is equipped with the Matlab application and analysis software 6. The mathematics learning media laboratory room is only intended for the mathematics learning media practicum room, therefore, the faculty leadership will provide a special door to enter the media laboratory room. 7. The laboratories at Halu Oleo University are integrated, meaning that students can access the use of laboratories in all Faculties and Departments, including BBE students. One of the laboratories that supports student research experience in the molecular field is that students can use the Molecular Biology laboratory at the Faculty of Mathematics and Natural Sciences UHO which is equipped with adequate equipment and materials.	List of New Reference Colections
	Criteria. 4. Transparency and documentation	-	-	-

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
	4.1 Module Descripsion	The experts need to point out that some module descriptions are missing. For example, the module descriptions for the community service (BME + BBE), for the teaching intern-ship PLP (BME), and thesis (BBE) are not included in the module handbook. Additionally, the module handbook of BME should have a list of all modules at the beginning. For this reason, the experts expect UHO to submit a complete module handbook for both pro-grammes. Moreover, several literature references are quite old and should be updated	1. BME and BBE will complete the missing description module. BME will be equipped with a handbook module for the Introduction to the School Environment (PLP) course, while BBE will be equipped with a handbook module for the Thesis course 2. At BME, make a list of contents of all handbook modules in all semesters, namely semester 1 to semester 8 3. BME and BBE will update the references in the handbook module	Appendix: Module Handbook PLP in BME Thesis Module Handbook BBE Daftar Module Handbook BME References Updates Modul Handbook
	4.3 Relevant Rules	• the experts emphasise that the relevant information about the degree programmes (e.g., module handbook, study plan, intended learning outcomes) need to be available to all stakeholders. To this end, it would be	1. BME dan BBE akan mempublikasikan module handbook, study plan, intended learning outcomes pada website BME dan BBE sehingga dapat diakses oleh stakeholder 2. BME dan BBE akan menambah jumlah mata kuliah pilihan yang disajikan pada semester tertentu. Pada BME matakuliah pilihan disajikan mulai semester 3.	Appendix Alamat website BME: https://matematika.fkip.uho.ac.id/

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		very useful to publish them on the English homepages of the programmes • Additionally, the experts point out that the study plans of both programmes should be updated in order to make transparent what are electives and a list of possible electives needs to be added.	Sedangkan Pada BBE mata kuliah pilihan disajikan pada mulai semester 5. 3. BME melakukan penambahan matakuliah pilihan yang mendukung profil lulusan dan sesuai dengan visi universitas. Matakuliah pilihan yang dimaksud adalah sebagai berikut: (1) Etnomatematika Pesisir; (2) Pendidikan Matematika Realistik; (3) Desain Audio Visual; (4) Pengembangan Media Digital Pembelajaran Matematika; (5) Pengembangan Instrumen; BBEmenambah matakuliah pilihan yang berbasis Kemaritiman, advance Biology dan interdisipliner yaitu (1) Molecular Biology; (2) Bioinformatics; (3) Coastal and Marine Ecosystem Management; (4) Ecotoursm; (5) Morfometrics; (6) Field Trip Learning; (7) Biology Practicum in Schools; (8) Environmental Sociology; (9) Rural Ecology; (10) Tropical Coast and Beach Ecology	Alamat website BBE: https://biologi.fkip.uho.ac.id/ Additional List of BME Elective Courses Additional List of BBE Elective Courses
	5. Quality management: quality assessment and development	The experts notice that the students are not well in-formed about the availability of the reports. To this end, the students should get notified when and where the results are published. Additionally, UHO	1. Reports on the results of filling out questionnaires regarding the quality of administrative services, learning process services, student services, and workload can be accessed on mathe-	Appendix: https://matematika.fkip.uho.ac.id/?page_id=486

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		should make sure and make transparent, that suitable measures are implemented to solve the issues mentioned in the quality assurance reports. During the audit, the experts learn that students are not represented in the university's boards. Thus, students are not directly involved in the decision-making processes. The experts are convinced that it would be very useful to have student members in the different boards. For this reason, they recommend that student representatives should be members of the boards at UHO and be actively involved in the decision-making processes for further developing the degree programmes. For example, it would be useful to make student representatives members of the Quality Assurance Working Group on programme level.	matics educational website and the UHO Education Quality Assurance and Management Institute (LPPMP) website. 2. Students institutionally at the University Level (Student Executive Body and Student Consultative Council) are not formally involved in decision making because it relates to the regulations of the Ministry of Education and Culture of the Republic of Indonesia, however informally students are involved in hearings regarding UKT increases, Work Meeting forums University Annual 3. BME and BBE involve students in decision-making activities to improve the quality of academic services at the study program level through the K2JM team 4. Functionally, the role of the Academic Advisory Board (DPA) suggested by the Assessors has been carried out well in the form of partnership cooperation involving Faculty Leaders, users (Principals), training centers (BPMP), professional groups (Teachers), Government Institutions (Diknas Province). The forms of activity are (1) periodic curriculum review workshops; (2) student internship activities; (3) student re-	https://lppmp.uho.ac.id/monev-pembelajaran-uho-2023/ Documentation of Activity Photos and Attendance List of Working Meeting Activities Letter of Assignment from the Head of Department about the K2JM TEAM for students of the Department of Mathematics Education and Biology Education Photos of curriculum revision activities Photos of Student PLP activities

NO	Criteria/Sub Criteria	Panel's Findings	Responses of Cluster B	Evidences
		The experts appreciate that UHO stays in contact with its alumni and the employers. However, no academic advisory board exists. As the experts consider the input of the employers to be very important for the further development of the degree programmes, they recommend establishing an academic advisory board at FKIP in order to discuss regularly with about the needs of the job market and new developments in the area of science education.	search activities; (4) Collaborative Service. However, the formation of the Academic Advisory Board is institutionally hampered due to the regulations that apply internally at UHO. 5. Then informally users (Principals), training centers (BPMP), professional groups (Teachers), Government Institutions (Provincial Education and Culture) were involved in curriculum revision.	Student research certificate (taken from thesis) Thematic KKN service report Curriculum Revision Activity Document Invitation To Student Affairs Coordination Meeting

F Summary: Expert recommendations (30.08.2024)

Taking into account the additional information and the comments given by UHO, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology Education	With requirements for one year	-	30.09.2030
Ba Mathematics Education	With requirements for one year	-	30.09.2030

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload are required for one ECTS point.

A 2. (ASIIN 3.2) Submit a concept and a timetable on how to update the instruments and the technical equipment and how to provide more working places in the laboratories within the accreditation period.

A 3. (ASIIN 3.2) All laboratories need to follow international standards with respect to safety measures.

A 4. (ASIIN 4.1) The module handbook needs to include descriptions of all modules.

A 5. (ASIIN 4.3) The English homepages need to include the essential information about the degree programme.

For Bachelor Biology Education

A 6. (ASIIN 2) The discrepancy between the intended learning outcomes in the module descriptions and the actual examination methods need to be solved. The exams need to be competency oriented and should put a stronger focus on transfer skills and critical thinking.

A 7. (ASIIN 4.3) Make transparent in the study plans what are electives and add a list of possible electives.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to further promote the students' academic mobility and to establish international cooperations especially in the area of teacher education.

E 2. (ASIIN 1.3) It is recommended to better support teachers with establishing international contacts and cooperations and to establishing an international coordinator or team at FKIP to initiate international cooperations specifically in the area of teacher education.

E 3. (ASIIN 1.3) It is recommended to offer more electives to better support students who want to become entrepreneurs.

E 4. (ASIIN 1.3) It is recommended to better prepare students for teaching integrated sciences at schools.

E 5. (ASIIN 1.3) It is recommend to prolong the teaching internship in schools and to expose students earlier than the seventh semester to real life in schools.

E 6. (ASIIN 1.3) It is recommended to introduce all students to digital teaching and learning methods as well as the correct use of AI.

E 7. (ASIIN 3.1) It is recommended to invite more international guest lecturers.

E 8. (ASIIN 3.1) It is recommended to improve the teachers' English proficiency.

E 9. (ASIIN 3.2) It is recommended to establish another micro teaching laboratory so that students can have more hands-on experience with mock teaching.

E 10. (ASIIN 5) It is recommended to establish an advisory board at the Faculty of Teacher Training and Education with external stakeholders, especially from high schools and other employers.

E 11. (ASIIN 5) It is recommended to make student representatives members of the Quality Assurance Group on programme level in order to directly involve them in the decision making processes for further developing the degree programme.

E 12. (ASIIN 5) It is recommended to better inform students about the results of the course questionnaires and to follow-up on the results in order to make sure that improvements are implemented.

For Bachelor Biology Education

E 13. (ASIIN 3.2) It is recommended to teach students about modern biology subjects such as molecular biology and bioinformatics.

G Comment of the Technical Committees (11.09.2024)

Technical Committee 10 – Life Sciences (11.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure, in particular recommendation E13. Here, the TC is of the opinion that it is also important for teacher training students to acquire theoretical knowledge in the fields of molecular biology and bioinformatics and that these topics must be included in the curriculum. It is therefore in favour of upgrading recommendation E13 to a requirement. Furthermore, the TC points out that the experts' criticism of the library's inadequate book collection is not reflected in a recommendation. It therefore votes in favour of making a further recommendation on this point. Otherwise, the TC agrees with the proposed requirements and recommendations.

The Technical Committee 10 – Life Sciences recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology Education	With requirements for one year	-	30.09.2030

Requirements

For Bachelor Biology Education

A 6. (ASIIN 3.2) Ensure that all students acquire theoretical knowledge in the fields of molecular biology and bioinformatics and that these topics are included in the curriculum.

Recommendations

For all degree programmes

E 13. (ASIIN 3.2) It is recommended to expand and update the book collection of the central library.

Technical Committee 12 – Mathematics (xx.xx.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure, in particular requirement A3. Here, the TC is of the opinion that this requirement only concerns the Bachelor of Biology Education and proposes a corresponding allocation. In addition, the TC notes that the English homepage of the programmes is not accessible and that requirement A5 should make it clear that there must be an English homepage with all the necessary information. With regard to recommendation E9, it suggests replacing the term 'hands-on' with 'practical'. Otherwise, the Technical Committee agrees with the proposed requirements and recommendations.

The Technical Committee 12 – Mathematics recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Mathematics Education	With requirements for one year	-	30.09.2030

Requirements

For all degree programmes

A 5. (ASIIN 4.3) The homepages need to include the essential information about the degree programme in English.

Recommendations

For all degree programmes

E 9. (ASIIN 3.2) It is recommended to establish another micro teaching laboratory so that students can have more-practical experience with mock teaching.

H Decision of the Accreditation Commission (24.09.2024)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the procedure and accepts the changes as proposed by the Technical Committees. Otherwise, the AC agrees with the suggested recommendations and requirements.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology Education	With requirements for one year	-	30.09.2030
Ba Mathematics Education	With requirements for one year	-	30.09.2030

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload are required for one ECTS point.

A 2. (ASIIN 3.2) Submit a concept and a timetable on how to update the instruments and the technical equipment and how to provide more working places in the laboratories within the accreditation period.

A 3. (ASIIN 4.1) The module handbook needs to include descriptions of all modules.

A 4. (ASIIN 4.3) The homepages need to include the essential information about the degree programme in English.

For Bachelor Biology Education

A 5. (ASIIN 3.2) Ensure that all students acquire theoretical knowledge in the fields of molecular biology and bioinformatics and that these topics are included in the curriculum.

A 6. (ASIIN 2) The discrepancy between the intended learning outcomes in the module descriptions and the actual examination methods need to be solved. The exams need

to be competency oriented and should put a stronger focus on transfer skills and critical thinking.

A 7. (ASIIN 3.2) All laboratories need to follow international standards with respect to safety measures.

A 8. (ASIIN 4.3) Make transparent in the study plans what are electives and add a list of possible electives.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to further promote the students' academic mobility and to establish international cooperations especially in the area of teacher education.

E 2. (ASIIN 1.3) It is recommended to better support teachers with establishing international contacts and cooperations and to establishing an international coordinator or team at FKIP to initiate international cooperations specifically in the area of teacher education.

E 3. (ASIIN 1.3) It is recommended to offer more electives to better support students who want to become entrepreneurs.

E 4. (ASIIN 1.3) It is recommended to better prepare students for teaching integrated sciences at schools.

E 5. (ASIIN 1.3) It is recommend to prolong the teaching internship in schools and to expose students earlier than the seventh semester to real life in schools.

E 6. (ASIIN 1.3) It is recommended to introduce all students to digital teaching and learning methods as well as the correct use of AI.

E 7. (ASIIN 3.1) It is recommended to invite more international guest lecturers.

E 8. (ASIIN 3.1) It is recommended to improve the teachers' English proficiency.

E 9. (ASIIN 3.2) It is recommended to establish another micro teaching laboratory so that students can have more practical experience with mock teaching.

E 10. (ASIIN 5) It is recommended to establish an advisory board at the Faculty of Teacher Training and Education with external stakeholders, especially from high schools and other employers.

E 11. (ASIIN 5) It is recommended to make student representatives members of the Quality Assurance Group on programme level in order to directly involve them in the decision making processes for further developing the degree programme.

E 12. (ASIIN 5) It is recommended to better inform students about the results of the course questionnaires and to follow-up on the results in order to make sure that improvements are implemented.

E 13. (ASIIN 3.2) It is recommended to expand and update the book collection of the central library.

Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Biology Education:

Programme Educational Objectives (PEO):

PEO-1 Produce independent biology education graduates and pursue further studies to improve their academics and professionalism

PEO-2 Improve the quality and quantity of research and community service in the field of Biology and Biology learning oriented to national publications and/or reputable international journals and the acquisition of Intellectual Property Rights (HaKI).

PEO-3 Working collaboratively in the multi-discipline and multicultural team, and possessing an enterpreneurship mindset

Intended Learning outcomes (ILO):

CODE	Description of ILO
	Specialist Competence (Knowledge, Special Skills)
ILO 1	They are able to **demonstrate** their fundamental knowledge in science and **relates** to problems in biology.
ILO 2	They are able to **apply** the basic and advance knowledge in biology to solve the problem in biology.
ILO 3	They are able to **analyse**, **evaluate**, **design**, and **implement** the lesson plan, and counselling program based on pedagogical knowledge.
ILO 4	They are able to **demonstrate** the research methodology in biology, its teaching and learning, and **publish** the results of the research.
ILO 5	They are able to **select** and **analyse** the proper technology and information or data in accomplishing tasks.
ILO 6	They are able to **demonstrate** laboratory works, design and implement the experiment based on laboratory knowledge, skills, safety, environmental issue, and social ethics problem.
	Social Competentence (General Skills, Attitudes)
ILO 7	They are able to **solve problem** and **present** the idea argumentatively.
ILO 8	They are able to **communicate** verbal and nonverbal effectively using the proper media.
ILO 9	They are able to **apply** the managerial and leadership principles, and work in a multi-discipline and multi cultural team
ILO 10	They are able to **demonstrate** creativity, accuracy, discipline, responsibility, adaptability, have an independent initiative, autonomous learning, and do lifelong learning

The following **curriculum** is presented:

No	Course Codes	Courses	Credits	ECTS	Activities	
					T	P
		SEMESTER I				
1	AJA61001	Introduction to Education	2	3.4	2	
2	AJA61002	General Biology	3	5.1	2	1
3	AJA61003	Chemistry Basics	3	5.1	2	1
4	AJA61004	Physics Basics	3	5.1	2	1
5	AJA61005	Educational Profession	2	3.4	2	
6	AJA61006	Basic Statistics	2	3.4	2	
7	AJA61007	Laboratory Engineering and Management	2	3.4	2	
8	AJA61008	Environmental Knowledge	3	5.1	3	
		Total Credits	**20**	**34.00**		
		SEMESTER II				
1	AJA62009	Religion	3	5.1	3	
2	AJA62010	Pancasila	2	3.4	2	
3	AJA62011	Indonesian Language	2	3.4	2	
4	AJA62012	Lower Plant Botany	3	5.1	2	1
5	AJA62013	Learner Development	2	3.4	2	
6	AJA62014	Teaching and Learning	2	3.4	2	
7	AJA62015	Plant Morphology	3	5.1	2	1
8	AJA62016	Invertebrate Zoology	3	5.1	2	1
		Total Credits	**20**	**34.00**		
		SEMESTER III				
1	AJA63017	Biology Learning Strategy	3	5.1	3	
2	AJA63018	Animal Structure	3	5.1	2	1
3	AJA63019	Plant Anatomy	3	5.1	2	1
4	AJA63020	Higher Plant Botany	3	5.1	2	1
5	AJA63021	Biochemistry	2	3.4	2	
6	AJA63022	Biology Curriculum Study and Development	2	3.4	2	
7	AJA63024	School Administration and Management	2	3.4	2	
		Total Credits	**18**	**30.6**		
		SEMESTER IV				
1	AJA64025	Biology Lesson Planning	2	3.4	2	
2	AJA64026	Microbiology	3	5.1	2	1
3	AJA64027	Civics	2	3.4	2	
4	AJA64028	Maritime Insight	3	5.1	3	
5	AJA64029	Animal Development	3	5.1	2	1
6	AJA64030	Assesment of Biology Learning	3	5.1	3	
7	AJA64031	English	2	3.4	2	
9	AJA64032	Information Technology	2	3.4	2	
		Total Credits	**20**	**34**		

		SEMESTER V				
1	AJA65023	Inclusive Education	2	3.4	2	
2	AJA65033	Animal physiology	3	5.1	2	1
3	AJA65034	Plant Physiology	3	5.1	2	1
4	AJA65035	Genetics	3	5.1	2	1
5	AJA65036	Research Methods	3	5.1	3	
6	AJA65037	Microteaching	2	3.4		2
7	AJA65038	Biology Learning Media Development	2	3.4	2	
		Total Credits	**18**	**30.6**		
		SEMESTER VI				
1	AJA66039	Vertebrate Zoology	3	5.1	2	1
2	AJA66040	Biotechnology	2	3.4	2	
3	AJA66041	Animal Ecology	3	5.1	2	1
4	AJA66042	Human Physiology and Anatomy	3	5.1	2	1
5	AJA66043	Biology Seminar	2	3.4		2
6	AJA66044	Plant Ecology	3	5.1	2	1
7	AJA66045	Field School Introduction (PLP)	4	6.8		4
8	AJA68059	Ecophysiology*	2	3.4*	2	
9	AJA68060	Development of Teaching Materials*	2	3.4*	2	
10	AJA68061	Toxicology*	2	3.4*	2	
11	AJA68062	Phytogeography*	2	3.4*	2	
12	AJA68063	Environmental Microbiology*	3	5.1*	2	1
13	AJA68064	Food Microbiology*	3	5.1*	2	1
14	AJA68065	Reproductive Biology*	2	3.4*	2	
15	AJA68067	21st Century Biology Learning*	2	3.4*	2	
16	AJA68068	Test Theory*	2	3.4*	2	
		Total Credits	**20**	**34**		
		SEMESTER VII				
1	AJA67046	Evolution	2	3.4	2	
2	AJA67047	Bioconservation	2	3.4	2	
3	AJA67048	Cell Biology	2	3.4	2	
4	AJA67052	Hydrobiology	3	5.1	2	1
5	AJA67050	Cultivation*	2	3.4	2	
6	AJA67054	Ethnobotany*	2	3.4	2	
7	AJA67055	Secondary Metabolites*	2	3.4	2	
8	AJA67056	Family Life Education*	2	3.4	2	
9	AJA67057	Instrument Development*	3	5.1	2	1
10	AJA67058	Fundamentals of Qualitative Research*	3	5.1	3	
11	AJA67051	Student Community Service (KKN)	4	6.8		4
		Total Credits	**18**	**30.6**		
		SEMESTER VIII				
1	AJA67051	Student Community Service (KKN)	4	6.8		4
2	AJA67053	Thesis	6	10.2		6
		Jumlah Kredit	**10**	**17**		
		Jumlah Total Kredit	**144**	**244,8**	**104**	**40**

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Mathematics:

Programme Educational Objectives (PEO):

PEO-1 Creating superior, processional and competitive mathematics education scholars in the development of science and technology in the field of mathematics education globally

PEO-2 The realization of improving the quality of community service research that has competitiveness both at the national and international levels in accordance with regional characteristics

PEO-3 The realization of sustainable cooperation with various parties while maintaining professional and scientific ethics

Intended Learning Outcomes (ILO):

CODE	Description ILO
Special Competences	
	Attitude
ILO1	Demonstrate religious, honest, fair, and responsible attitudes as a result of internalizing values, norms, academic ethics, professional ethics, leadership, and managerial ethics in real life
ILO2	Demonstrate social sensitivity and cooperation to contribute to improving the quality of life of the nation based on Pancasila
	Skill
ILO3	Applying logical, critical, systematic thinking, independent, quality, measurable and innovative performance in the context of developing science and technology in their field of expertise
ILO4	Compile a description of the results of studies that are accepted academically
ILO5	Publish scientific products based on scientific principles in journals
	Competencies
ILO6	Apply mathematical concepts (statistics, algebra, geometry, calculus, and analysis) with High Order Thinking Skill (HOTS) and 4-C (critical, creative, collaborative, communicative) in problem-solving
ILO7	Applying the results of the development of the relevant information technology-based mathematics learning system
	Knowledge
ILO8	Apply a concept or formal procedure of basic and advanced mathematics to support professional and pedagogic competence
ILO9	Designing innovative mathematics learning both with manipulative and information technology-based learning media

The following **curriculum** is presented:

SMT	Course Code	Course	Aktivitas			
			Credit	ECTS	Teori	Praktek
	Semester I					
I	UHO61001	Religion	3	4,5	2	1
	UHO61002	Pancasila	2	3,0	2	0
	UHO61004	Indonesian Language	2	3,0	2	0
	UHO61005	English and Other Foreign Language	2	3,0	1	1
	AIA61005	Information Teknology	2	3,0	0	2
	AIA61006	Introduction to Educational	2	3,0	2	0
	AIA61007	Differential Calculus	3	4.5	2	1
	MIP61019	Insight and Studies of Mathematics and Natural Science	2	3,0	1	1
	AIA61009	Logic and Sets	3	4,5	3	0
	AIA61010	Basic Statistic	3	4,5	2	1
Jumlah			**24**	**34,3**	**17**	7
II	**Semester 2**					
	UHO62003	Civic Education	2	3,4	2	0
	UHO62007	Insight of Maritime	3	5,1	3	0
	AIA62013	Cognitive Development of Student	2	3,4	2	0
	AIA62014	Learning and Instruction	2	3,4	2	0
	AIA62015	Integral Calculus	3	5,1	2	1
	AIA62016	Geometry	3	5,1	3	0
	AIA62017	Trigonometry	2	3,4	2	0
	AIA62018	Introduction of Probability Theory	2	3,4	2	0
	AIA62019	Computer Programming	3	5,1	0	3
Jumlah			**20**	**34**	**16**	**4**
III	Semester 3					
	AIA63020	Inclusive Education	2	3,0	2	0
	AIA63021	Educational Profession	2	3,0	2	0
	AIA63022	Instructional Design	2	3,0	1	1
	AIA63023	Mathematics Instructional Strategy	2	3,0	1	1
	AIA63024	Number Theory	3	4,5	3	0
	AIA63025	Linear Algebra	3	4,5	2	1
	AIA63026	Linear Programming	2	3,0	1	1
	AIA63027	Multiple Variable Calculus	3	4,5	2	1
	AIA63028	Capita Selecta of Mathematics in Elementary Schools	3	4,5	3	0
Jumlah			**22**	**33**	**17**	**5**

IV	Semester 4					
	AIA64030	Evaluation in Mathematics Education	2	3,4	1	1
	AIA64036	Plane Analytical Geometry	3	5,1	3	1
	AIA64031	Mathematical Statistics	3	5,1	3	1
	AIA64032	Differential Equation	3	5,1	2	1
	AIA64033	Nonparametric Statistics	2	3,4	1	1
	AIA64034	Discrete Mathematics	3	5,1	2	1
	AIA64035	Media Development of Instructional Mathematics	2	3,4	1	1
	AIA64029	History of Mathematics	2	3,4	2	0
Jumlah			**18**	**30,6**	**14**	**4**
V	**Semester 5**					
	AIA65037	Administration and School Management	2	3,4	2	0
	AIA65038	Research Methodology in Mathematics Education	3	5,1	3	0
	AIA65039	Structure of Algebra	3	5,1	3	0
	AIA65040	Initial Value and Boundary Condition Problems	3	5,1	3	0
	AIA65041	Solid Analytical Geometry	3	5,1	3	0
	AIA65042	Capita Selecta of Mathematics in high Schools	3	5,1	3	0
	AIA65043	International Journal Analysis	3	5,1	3	0
	AIA65044	Qualitative Research	2	3,4	2	0
Jumlah			**20**	**34**	**20**	**0**
VI	Semester 6					
	AIA66045	Classroom action Research	2	3,4	1	1
	AIA66046	Micro Teaching	2	3,4	0	2
	AIA66047	Real Analysis	3	5,1	3	0
	AIA66048	Transformation Geometry	3	5,1	3	0
	AIA66049	Numerical Method	3	5,1	2	1
	AIA66050	Philosophy of Mathematics Education	2	3,4	2	0
	AIA66051	Applied Mathematics in Economic	2	3,4	2	0
	AIA66052	Applied Regression Analysis	2	3,4	1	1
	AIA66053	Introduction to The School Environmen	4	6,8	0	4
Jumlah			**23**	**39,1**	**14**	**9**

	Semester 7					
	AIA67054	Complex Analysis	3	5,1	3	0
VII	AIA67055	Seminar of Mathematic Education	2	3,4	1	1
	AIA67056	Mathematical Modeling	2	3,4	1	1
	AIA67057	Vector Algebra	2	3,4	2	0
	AIA67058	International Study of Mathematics Education	2	3,4	2	0
	UHO68008	Community Service Program	4	6,8	0	4
Jumlah			**15**	**25,5**	**9**	**6**
Semeseter 8						
VIII	PMT68059	Thesis	6	10,2	0	6
Jumlah			6	10,2	0	6
TOTAL SKS I – VIII					**111**	**42**

SEM										
VIII	Thesis (6 SKS/10,8ECTS)									
VII	Complex Analysis (3 SKS/5,4 ECTS)	Community Service Program (4 SKS/7,2 ECTS)	International Study of Mathematics Education (2 SKS/3,6 ECTS)	Seminar of Mathematic Education (2 SKS/3,6 ECTS)	Mathematical Modeling (2 SKS/3,6 ECTS)	Vector Algebra (2 SKS/3,6 ECTS)				
VI	Classroom action Research (2 Sks/3,6)	Micro Teaching (2 SKS/3,6 ECTS)	Real Analysis (3 Sks/5,4 ECTS)	Transformation Geometry (3 SKS/5,4 ECTS)	Numeric Method (3 SKS/5,4 ECTS)	Philosophy of Mathematics Education (2 SKS,3,6 ECTS)	Applied Mathematics in Economic (2 SKS/3,6 ECTS)	Applied Regression Analysis (2 SKS/3,6 ECTS)	Introduction to The School Environmen (4 SKS/7,4 ECTS)	
V	Administration and School Management (2 SKS/3,6 ECTS)	Research Methodology in Mathematics (3 SKS/5,4)	Structure of Algebra (3 Sks/5,4 ECTS)	The Problem of Initial Values and Boundary Condition (3 SKS/5,4 ECTS)	Solid Analytical Geometry (3 SKS/5,4 ECTS)	Capita Selecta of Mathematics in high Schools (3 SKS/5,4 ECTS)	International Journal Analysis (3 SKS/3,6 ECTS)	Qualitative Research (2 SKS/3,6 ECTS		
IV	Evaluation in Mathematics Education (3 SKS/5,4 ECTS)	Plane Analytical Geometry (3 SKS/5,4 ECTS)	Mathematical Statistics (3 SKS/5,4 ECTS)	Differential Equation (3 SKS/5,4 ECTS)	Nonparametric Statistics (2 SKS/3,6	Discrete Mathematics (3 SKS/5,4 ECTS)	Media Development of Instructional Mathematics (2 SKS/3,6 ECTS	History of Mathematics (2 SKS/3,6 ECTS)		
III	Inclusive Education (2 SKS/3,6)	Profesi Kependidikan (2 SKS/3,6 ECTS)	Instructional Design (2 SKS/3,6 ECTS)	Mathematics Instructional Strategy (3 SKS/5,4 ECTS)	Number Theory (3 SKS/5,4 ECTS)	Linear Algebra (3 SKS/5,4 ECTS)	Linear Programming (3 SKS/5,4 ECTS)	Multiple Variable Calculus (3 SKS/5,4 ECTS)	Capita Selecta of Mathematics in Elementary Schools (3 SKS/5,4 ECTS)	
II	Civic Education (2 SKS/3,6 ECTS)	Insight of Maritime /3 SKS/5,4 ECTS)	Cognitive Development of Student (2 SKS/3,6 ECTS)	Learning and Instruction (2 SKS/3,6 ECTS)	Integral Calculus (3 SKS/5,4 ECTS)	Geometry (3 SKS/5,4 ECTS)	Trigonometry (2 SKS/3,6 ECTS)	Introduction of Probability Theory (2 SKS/3,6 ECTS)	Computer Programming (3 SKS/5,3 ECTS)	
I	Religion (3 SKS/5,4 ECTS)	Pancasila (2 sks/3,6)	Indonesian Language (2 SKS/3,6 ECTS)	English and Other Foreign Language (2 sks/3,6 ECTS)	Information Technology (2 SKS/3,6 ECTS)	Introduction to Education (2 SKS/3,6 ECTS)	Differential Calculus (3 SKS/5,4 ECTS)	Insight and Studies of Mathematics and Natural Science (3 SKS/5,4 ECTS)	Logic and Sets (3 SKS/5,4 SKS)	Basic Statistic (3 SKS/5,4 ECTS)