ASIIN Seal

Accreditation Report

Bachelor's Degree Programme
Biology

Provided by
Universitas Lampung, Indonesia

Version: 24 March 2023

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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 Biologi	Undergraduate programme in Biology	ASIIN	BAN-PT[3]: A 2021 - 2026	10
Date of the contract: 16.11.2021 **Submission of the final version of the self-assessment report:** 07.09.2022 **Date of the audit (online):** 14.12. – 15.12.2022				
Peer panel: Prof. Dr. Tilman Achstetter, University of Applied Sciences Bremen, retired Dr. Walter Pfefferle, Evonik Industries Prof. Dr. Ralph Schill, University of Stuttgart Muhammad Ibrahim, Universitas Sebelas Maret, student				
Representative of the ASIIN headquarter: Rainer Arnold				
Responsible decision-making committee: ASIIN Accreditation Commission				
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria as of 28.03.2014 Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of 28.06.2019				

[1] ASIIN Seal for degree programmes;
[2] TC: Technical Committee for the following subject areas: TC 10 – Life Sciences
[3] National Accreditation Board of Higher Education / Badan Akreditasi Nasional Perguruan Tinggi (BAN-PT)

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	Sarjana Sains / Bachelor of Science in Biology	-	6	Full time	no	8 Semester	144 SCU / 207 ECTS	1989, Once a year (August)

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

For the Bachelor's degree programme Biology, Universitas Lampung (UNILA) has presented the following profile in its Self-Assessment Report:

Vision	Mission	Objectives
Biology aspires to become a study program that is recognized by the international community in terms of research, teaching, and public services in the fields of biology, living natural resources, and the environment.	• carry out education in the field of biology; • develop research in the field of biology that is in line with natural resource conservation issues; • carry out community service in the field of applied biology to improve the quality of life; • establishment partnerships with other institutions	To produce graduates that are: (1) mastering the principles of biological sciences; (2) skilled in applying biological sciences in various fields related to animal, plant, and microorganism resources; (3) able to lead or carry out basic research and development of biology; (4) able to continue their education to a higher level, namely the Master (S2) and or Doctoral (S3) programs

C Peer Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Self-Assessment Report
- Study plan
- Module descriptions
- Homepage Ba Biology: https://biologi.fmipa.unila.ac.id/en/undergraduate-program-in-biology/
- Homepage UNILA: https://www.unila.ac.id/en/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The auditors base their assessment of the learning outcomes on the information provided on the website and in the Self-Assessment Report of the Bachelor's degree programme Biology.

UNILA has defined and published Programme Learning Outcomes (PLO), which cover a number of specific competences students should acquire in the course of their studies. The PLO comprise four areas of competence namely attitudes, general skills, special skills, and knowledge.

The auditors 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, as defined by UNILA, correspond with the competences as outlined by the SSC. They come to the following conclusions:

Graduates of the Bachelor's degree programme Biology should understand the basic biological processes and should be capable of applying the scientific and technological methods of the biological sciences. In addition, graduates should acquire relevant scientific

knowledge in the different biological areas such as botany, zoology, biochemistry, biodiversity, molecular biology, cell biology, microbiology, ecology, plant & animal physiology, and related natural sciences (chemistry, physics). They should learn to work in a team and to carry out practical work in a laboratory and in the field. In addition, graduates should be able to work scientifically and be familiar with technological innovations and the use and preservation of biological resources.

The programme is designed as a general biology programme with some specialization options by selecting elective modules and particularly in the course of the final research project. The programme educational objectives and learning outcomes are expected to equip the graduates with life skills required to develop and adapt to the wide spectrum of possible occupations. Biology graduates have a broad occupational area. Their occupational profile includes researcher, teacher/lecturer, entrepreneur, and they could work in industry, academia, or public institutions. As junior research assistants, graduates should be able to examine issues in biology by implementing scientific methods and be able to design and carry out research projects in the area of biology. As entrepreneurs, graduates should be qualified to manage a business unit and to develop local biological-based business ideas through innovation and creativity. In Indonesia, only graduates of educational programmes are allowed to become school teachers. However, it is possible for graduates of regular scientific programmes to join a professional teacher education programme, called PPG (Professional Teacher Education). After finishing this one year long programme, the graduates can become school teachers.

Supplementing the subject-related qualification objectives, Biology students 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, be able to apply information and communication technology, and show a social and academic attitude. Finally, students should acquire communicative and language skills and should develop a strategy for life-long learning.

In summary, the peers are convinced that the intended qualification profiles of the Biology undergraduate programme allow graduates to take up an occupation, which corresponds to their qualification. The degree programme is designed in such a way that it meets the goals set for it. The objectives and intended learning outcomes are reasonable and well founded.

The peers conclude that the objectives and intended learning outcomes of the Bachelor's degree programme Biology 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. This is also reflected in the provided matrix, which compares the PLO with the SSC of TC 10.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report

Preliminary assessment and analysis of the peers:
UNILA awards a Bachelor of Science (B.Sc.) or Sarjana Sains (S.Si.) degree to the graduates of the Bachelor's degree programme Biology.

The peers confirm that the English translation and the original Indonesian name of the Biology programme correspond with the intended aims and learning outcomes as well as the main course language (Bahasa Indonesia).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plan
- Module descriptions
- Curriculum Handbook
- Homepage Ba Biology: https://biologi.fmipa.unila.ac.id/en/undergraduate-program-in-biology/
- Homepage UNILA: https://www.unila.ac.id/en/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The Bachelor's programme Biology is offered by the Faculty of Mathematics and Natural Sciences (FMIPA), which is one of the eight faculties at the University of Lampung.

In order to graduate from the Biology programme, students have to pass a minimum of 144 credits (Satuan Kredit Semester, SCU) within a period of eight semesters (four years). This is equivalent to 207 ECTS points). The maximum length of studies for undergraduate programmes at UNILA is 14 semesters (seven 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 lasts from February to July.

The curriculum consists of university requirements and compulsory and elective courses determined by UNILA and the respective departments. University requirements are courses that need to be attended by all undergraduate students at UNILA. There are five university requirements: Bahasa Indonesia, Religion, Pancasila, Ethics, and Civic Education. These courses are almost all offered in the first two semesters of studies, in addition to courses conveying basic knowledge of natural sciences and mathematics.

The course distribution is depicted in the following table:

Requirement level	Course Credit (SCU)			ECTS	%
	Compulsory	Elective	Sum		
University	12	0	12	17	8
Faculty	4	0	4	6	3
Degree program	93	35	128	184	89
Total	**109**	**35**	**144**	**207**	**100**

Table 1: Course distribution, Source: UNILA Self-Assessment Report

Courses on the different subject-specific sciences are offered from the third to the 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. During the eight semesters, students must also complete the undergraduate thesis seminar (1 SCU) and the undergraduate thesis (4 SCU) and the community service (3 SCU).

Usually during the last year of studies, students must complete the community service (Kuliah Kerja Nyata, KKN). The peers 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 peers understand that students should work for the benefit of the community and the Indonesian society during the community service and support this concept.

Students, who have strong reasons such as illness or pregnancy, are entitled to take academic leave for a maximum of two semesters without paying tuition and still counting as the study period. Academic leave is proposed by students to the Dean, who then submits a proposal for academic leave to be determined administratively by the Rector's Office.

The careers of the graduates of the Bachelor's degree programme Biology are very diverse and include:

1) Researchers at governmental institution or private research institutions/NGOs;

2) Educators/teachers at secondary schools and universities;

3) Analysts in various laboratories and centers of animal and plant conservation;

4) Managers in industrial companies and banking institutions;

5) Members of the state police of special divisions such as forensics, water and air;

6) Entrepreneurs engaged in various business sectors, ranging from agriculture, fisheries, animal husbandry, plantations, culinary, tourism, and waste management;

7) Technicians or curators at laboratories and natural resource conservation centers such as museums and zoos.

The Biology programme includes an internship, which lasts a minimum of four weeks. However, the actual length may vary, depending upon the agreement between the undergraduate programme and the host institution. The internship can be conducted in research institutions or companies. Students can get information about available places from the programme coordinators, the UNILA Career Center, or the internship supervisor and need to submit an internship proposal.

Since UNILA has the goal to become internationally more visible and wants to further internationalise its degree programmes, the peers discuss with the programme coordinators and students if any classes in the Biology programme are taught in English. The programme coordinators explain that usually all courses are delivered in Bahasa Indonesia (Indonesian language) but most of the teaching materials (teaching slides) are provided in English and some presentations by students are also done in English. Furthermore, students should be encouraged and supported to attend summer courses that are held in English with international students and guest lecturers. The peers acknowledge that there is a Biology English Club (BEC) in the Department of Biology, which is a forum for biology students, who have an interest in developing their English language skills with respect to conversation, writing, and reading.

The peers gain the impression that the graduates of the Bachelor's degree programme Biology are well prepared for entering the labour market and can find adequate jobs in Indonesia. Most of the Bachelor's graduates enter the job market directly, only few (approximately 11 %) continue with a Master's degree either at UNILA or at other universities. Several graduates decide to become teachers, which is possible after attending an additional one year long pedagogic course. They chose the "regular" biology programme in the beginning and not the biology education programme, because they were unsure about their job perspectives and wanted to be open for all opportunities. Only during their studies, they realised that they want to become teachers. According to the latest tracer study, 78 % of the employed graduates work in private companies and the rest in government agencies or state-owned enterprises. There is a high demand from the industry for Bachelor's graduates in biology. Consequently, the job perspectives are very good and manifold.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Study plan
- Curriculum Handbook
- Homepage Ba Biology: https://biologi.fmipa.unila.ac.id/en/undergraduate-program-in-biology/
- Homepage UNILA: https://www.unila.ac.id/en/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Reports, admission procedures and policies for new students follow the national regulations in Indonesia. The requirements, schedule, registration venue, and selection test are announced on UNILA'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 UNILA:

1. National Entrance Selection of State Universities (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during the high school.

2. 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, Bahasa Indonesia, English, Physics, Chemistry, Biology, Economics, History, Sociology, and Geography).

3. Independent Selection (Mandiri) students are selected based on a test specifically held by UNILA for prospective students that haven not been accepted through SNMPTN or SBMPTN.

The Higher Education Entrance Test Institute (Lembaga Tes Masuk Perguruan Tinggi, LTMPT) carries out the process of student data collection, registration, and implementation of university entrance selection in Indonesia on the national level. At UNILA, the New Student Admissions Management Agency (Badan Pengelola Penerimaan Mahasiswa Baru, BP PMB) is in charge of carrying out the admission procedure. All information about the requirements, how to register, the stages of the registration process, exam schedules, and announcement of selection results are managed by this agency. All information that is under the responsibility of UNILA can be accessed by the public via the internet.

Within the last five years, around 33 % of the new biology students were admitted via SNMPTN, around 52 % via SBMPTN, and approximately 15 % through the independent selection. Since 2017, the number of registered students has continually increased. For example, in 2017 96 new students were admitted and in 2022 224 new students. The number of applications exceeds the number of available study places. The average acceptance quota has also increased from 8.3 % in 2017 to 31.8 % in 2022.

The maximum number of students who can be accepted in each study programme is determined by the ratio of lecturers to students. The intended ratio of lecturers to students is 1: 20. Currently, the number of lecturers in the Biology programme is 31, therefore, the maximum number of students allowed in this study programme is 20 x 31 = 600 students. At the end of the even semester of 2021/22, the number of Biology students was 382. Consequently, the Biology programme accepted more than 200 new students in the 2022.

The details are depicted in the following table:

Year	SNMPTN				SBMPTN				MANDIRI			
	Number of applicants	Selection Pass	Registered	Percentage from all admitted	Number of applicants	Selection Pass	Registered	Percentage from all admitted	Number of applicants	Selection Pass	Registered	Percentage from all admitted
2022	321	81	79	35.30	338	132	130	58.03	45	17	15	6.69
2021	266	45	41	31.53	214	85	71	54.61	29	21	18	13.84
2020	196	30	28	28.28	240	61	52	52.52	36	22	19	19.19
2019	211	30	27	31.14	330	50	40	47.61	23	17	17	20.23
2018	445	42	33	34.37	658	70	49	51.04	36	20	14	14.58
2017	427	42	33	34.37	690	65	51	53.12	35	17	12	12.50
Average				**32.50**				**52.82**				**14.51**

Table 2: New Students' Admission, Source: UNILA Self-Assessment Report

Undergraduate students at UNILA have to pay tuition fees (UKT). The fees for each study programme vary according to the operational costs of learning. In addition, UKT for each student is different according to the financial ability of their parents. Students with a very poor economic background do not have to pay any tuition fees (class I) and the highest tuition fee (class 8) is IDR 7,950,000 (EUR 506) per year. The details are shown in the following table.

Entry Path	The amount of tuition per semester according to the UKT class in IDR (Indonesian Rupiah)							
	Class I	Class II	Class III	Class IV	Class V	Class VI	Class VII	Class VIII
SNMPTN & SBMPTN	0	1,000,000	2,400,000	3,500,000	4,600,000	5,700,000	6,800,000	7,950,000
MANDIRI*)	Not available	Not available	Not available	Not available	4,600,000	5,700,000	6,800,000	7,950,000

*): For PS S1 Biology students who are accepted through the MANDIRI Entry Path, they are required to pay an institutional fund contribution (SPI) of at least IDR 10,000,000.

Table 3: Tuition Fees, Source: UNILA Self-Assessment Report

Several grants for students with financial difficulties are available, such as from the government, industries, and foundations.

From their discussion with the students, the peers gain the impression that the admission system is very effective and only very motivated and high-performing candidates are admitted. The peers consider the highly selected and motivated students to be one of the strong points of the Biology undergraduate programme.

In summary, the auditors 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.

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

UNILA does not comment on this criterion in its statement.

The peers consider criterion 1 to be fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-Assessment Report
- Study plans of the degree programme
- Module descriptions
- Homepage Ba Biology: https://biologi.fmipa.unila.ac.id/en/undergraduate-program-in-biology/
- Homepage UNILA: https://www.unila.ac.id/en/
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The Bachelor's degree programme Biology requires students to complete 144 SCU (207 ECTS), which includes compulsory courses (109 SCU) and a minimum of 35 SCU of elective courses. The curriculum is designed for eight semesters. Nevertheless, it is also possible for excellent students to complete the degree in only seven semesters. Students cannot cover more than 24 SCU per semester. All students have to complete the undergraduate programme within seven years. The students' individual study plans are different from each other, but have to be approved by their academic advisors.

Courses in the first two semesters convey basic knowledge of natural sciences, mathematics, and languages (Indonesian and English). In addition, students need to attend obligatory courses, such as Religion, Pancasila, Ethics and Local Wisdom, Language, and Civic Education, which are university requirements and need to be attended by all students at UNILA. These courses are aimed at developing social skills, and character building. Moreover, introductory biology courses in Biostatistics, Biochemistry, Cell Biology, Botany, and Zoology are part of the curriculum in the first two semesters.

From the third semester on, more subject-specific classes, with a focus on biology, such as Microbiology, Genetics, Ecology, Physiology, Evolution, Molecular Biology, Entomology, Embryology, Biodiversity, Herpetology, and Immunology are offered. Elective subjects are offered form the fifth semester and are designed not only to give additional knowledge complementing the compulsory course, but also to help students deciding on a final project and personal scientific interest. During the seventh and eighth semester, students must complete the Community Service and the Bachelor's thesis (mini thesis).

The main areas of study are:

(1) Cell and Molecular Biology that studies the organisation of cell and sub-cellular living things,

(2) Physiology studies the processes that occur in living systems,

(3) Genetics that studies gene substance and its inheritance processes to ensure the continuity of living systems,

(4) Structure and Development that studies individual-level organization and ontogeny changes of such organisations,

(5) Biosystems and Evolution that study the diversity of living things and their phylogeny history, and

(6) Ecology, which studies the organisation of individual interactions from the level of populations, communities, ecosystems to the biosphere.

In total, there are 104 modules in the bachelor's programme Biology programme, including 57 compulsory courses (109 SCU) and 47 electives. The compulsory courses include fieldwork practise 2 SCU (6.Semester), Community Service 3 SCU (7. Semester), lectures 82 SCU, practical laboratory work 20 SCU, seminar 2 SCU (6. + 8. Semester), and Mini-Thesis 4 SCU (8. Semester). In addition, students have to take a minimum of 35 SCU in electives.

The internship course is designed to strengthen the students' social and practical competences and to increase their chances in the job market. The Students Internship Course (SIC, in Bahasa: Kuliah Magang Mahasiswa (KMM)) or Fieldwork Practices (FP, in Bahasa Indonesia: Praktek Kerja Lapangan (PKL)) is a practice-based and non-theoretical course. It is designed to implement the theories learned during the course of studies into field practices or within partners' institutions. The programme provides an Internship Guidebook for informing students about the goals and content of the internship course. UNILA awards two SCU for the internship, which is carried out for two months at an external institution. Students are required to submit a written work report, which is evaluated by the supervisor from the external institution and by one teacher from UNILA.

The peers see that the Biology programme is designed as a general programme with some specialization during the student's final project. Nevertheless, students are expected to graduate as general biologists, distinguished from graduates of other programmes by his/her strong background understanding in traditional biology subjects such as botany, zoology, microbiology, and ecology. Biology graduates have diverse job opportunities, which include researcher, teacher/lecturer, entrepreneur, consultant/analyst, and manager.

One critical aspect of the Biology programme is the relative small scope of practical laboratory work. The peers see that only 20 SCU are dedicated to practical laboratory work,

which is equivalent to a share of 14 %, not including the final project. This is rather low in comparison to international standards. Since it is very important for Biology students to gain sufficient practical experience in laboratory work, the peers recommend increasing the scope of practical laboratory work, especially in modern areas of Biology such as Molecular Biology, Immunology, and Molecular Genetics. In addition, the students point out that in some courses such as herpetology, there is no associated practical work in the laboratory.

The peers also learn that usually students conduct the experiments together in groups of three to five (depending on the course); however, there should be enough instruments and laboratory space so that the experiments can be conducted by groups of not more than two to three students. Otherwise, students may not acquire the necessary hands-on experience in conducting experiments and in responsible and safe use of materials (see Criterion 4.3).

The members of the teaching staff explain on demand of the peers that they offer possible topics for the final projects according to their own research projects. All members of the teaching staff supervise theses. Students have to design a research proposal (this proposal is developed in the "proposal seminar", which usually takes place in the sixth semester) 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. Students can also develop their own concepts for their Bachelor's thesis (mini thesis) and it is possible to conduct the Bachelor's thesis outside UNILA.

The peers point out that it is crucial to keep track of the new developments in the area of biology. New techniques and technologies are introduced permanently and the content of the degree programme needs to be adjusted accordingly to accommodate these developments and innovations. This is especially relevant for modern areas of Biology such as Bioinformatics, Molecular Biology, Immunology, and Molecular Genetics. The programme's focus is clearly on traditional areas of biology. The technical equipment to conduct experiments in modern areas of biology (e.g. for DNA sequencing) is available in the integrated laboratory, but the aforementioned fields of modern biology are not reflected in the curriculum and the courses. For this reason, the peers recommend putting a stronger focus on these areas.

After analysing the module descriptions and the study plans, the peers confirm that the Bachelor's programme Biology is 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 UNILA guarantees for their respective quality in terms of relevance, content, and structure.

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

International Mobility

UNILA provides some opportunities for students to conduct internships and exchange programmes abroad. 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 UNILA, although this transfer of credits is only possible if an agreement exists between UNILA 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..

Students' international academic mobility is supported by UNILA. For example, through International Students Mobility Awards (IISMA), a scholarship programme from the Ministry of Education and Culture starting from 2021. Four students form UNILA have been awarded an IISMA scholarship in 2022, but none were biology students. In addition, lecturers are encouraged to carry out joint research activities with international partners and to involve students in their projects. The Biology programme collaborates in research with some international institutions such as the Research Institute in Humanity and Nature, Japan and the Malaya University, Malaysia.

To promote academic mobility, UNILA has an International Office, where students can get information about academic mobility. It also offers a website, which provides information such as the requirements that students need to know before applying for one of the exchange programmes. In addition, one of UNILA's strategies to promote international student mobility is to provide scholarships for international students. However, there are only very few non-Indonesian students at UNILA. According to the information provided with the Self-Assessment Report, there were only 38 international students studying at UNILA during the last six years. Only one of them was enrolled at the Faculty of Mathematics and Natural Sciences, not in Biology but Computer Sciences.

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 UNILA (Minister of Education and Culture Regulation Number 3, Year 2020).

The MBKM programme allows students to gain up to 40 SCU (equivalent to 2 semesters) outside the university and up to 20 SCU (equivalent to 1 semester) outside the area of Biology. The MBKM programme offers the students the following possibilities:

1. Internship in industry,
2. Research,
3. Independent project,
4. Student exchange,
5. Teaching assistance in education units,
6. Entrepreneurship,
7. Building a village,
8. Humanitarian project.

MBKM is not mandatory like PKL and KKN. Students must consult with their academic supervisor in determining the MBKM programme and fill out a Learning Agreement.

Credit points that can be gained by students by participating in one of the eight activities in the MBKM program for one semester depend on the workload of the student. Full time means that students leave campus for one semester without attending regular lectures. Part-time means students only use their spare time between academic activities on campus.

The students confirm during the discussion with the peers that some opportunities for international academic mobility exist, mostly with universities in South East Asia. However, they also point out that they wish for more places, more exchange programmes, and more scholarships. So far, the main obstacles, which are limiting students' academic mobility, are the language barrier and financial restrictions (high living costs). Currently, most stays abroad are short term stays, either for attending workshops or for taking part at seminars for a couple of weeks. Longer stays in the course of exchange programmes (one semester or longer) are very rare. 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. In addition, students would like to improve their English proficiency in order to increase their international job perspectives and their chances for receiving a scholarship for continuing their academic education at an international university.

The peers support these suggestions and recommend increasing the efforts to further internationalising UNILA by establishing more international cooperations and exchange programmes, and offering more scholarships. Furthermore, UNILA should invite more visiting

lecturers, initiate more international exchange programmes, and provide more scholarships for students. The peers 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 broaden their scientific background, and to enhance their job opportunities.

A good starting point for initiating more international cooperations 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 ERASMUS or the German Academic Exchange Council (DAAD) for receiving funds for stays abroad.

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

Criterion 2.2 Work load and credits

Evidence:

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

Preliminary assessment and analysis of the peers:
Based on the National Standards for Higher Education of Indonesia (SNPT), the Bachelor's degree programme Biology uses a credit point system called SCU.

For regular classes, 1 SCU 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 class room 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 SCU 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.

Students with high academic achievement can take more courses (up to 24 SCU) to speed up their studies; the academic advisor must approve this.

The peers point out that there can be no fixed conversion rate between SCU and ECTS points, but the ECTS points need to be calculated separately for each course. This can be easily done by dividing the students' total workload, which is described in detail in the respective module description, by the number of hours that is required for one ECTS.

Since the workload of the students was only estimated by the programme coordinators, the peers expect UNILA to re-evaluate the calculation of ECTS points and asking the students about their actual workload, especially the time they need for self-studies, for each course. For example, this could be done by including a respective question in the course questionnaires. By correctly displaying students' workload in ECTS credits, UNILA would facilitate academic mobility and better support their graduates if they apply for international programmes.

In any case, UNILA needs to verify the students' total workload and make sure that the actual workload and the awarded ECTS points correspond with each other. This information should be made transparent in the module descriptions and the study plans.

The students' workload is high, especially in the first two semesters, because students have to adjust to learning at university and the transition from high school to university is difficult for many students. However, students confirm in the discussion with the peers that their total workload is manageable.

Most of the students can finish the Biology programme in time. As described in the Self-Assessment Report, the average study period for the Biology programme has slightly increased with in the last years, from 3.89 years in 2019 to 4.23 years in 2021. This increase is mostly due to the restrictions and problems related with the COVID pandemic.

The dropout rate in the Bachelor's degree programme Biology is very low. The average percentage of dropouts for the last five years is only around 2 %. The main reasons why students withdraw is that they transfer to a different academic programme, either at UNILA or at another university. The average GPA of the graduates has increased during the last three years and was 3.56 (out of a maximum of 4) in 2021.

In summary, the peers confirm that the Bachelor's programme Biology has a high but manageable workload. Students can give their feedback on the courses and comment if they think that the workload is too high. However, there should be a regular and institutionalised survey on students' workload in every course. For example, this could be done by including a respective question in the course questionnaires that students have to fill out at the end of each semester.

Criterion 2.3 Teaching methodology

Evidence:

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

Preliminary assessment and analysis of the peers:

The learning method applied in the Biology programme is a combination of teacher-centred learning (TCL) such as classroom teaching/tutorials, demonstrations, and laboratory sessions, and student-centred learning (SCL) such as seminars, Community Service, field studies, laboratory work, and Mini-Thesis. Each course can use one or a combination of several teaching and learning methods.

The most common methods of learning are lectures, with several courses having integrated laboratory work. Lecturers generally prepare presentations to support the teaching process. 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.

Learning activities are usually carried out face-to-face, online learning was applied intensively during the COVID pandemic. Online learning also uses various media such as WhatsApp, Google Classroom, or Zoom. Restrictions on practical activities during the pandemic have constrained the laboratory work. In response to this situation, simulations were performed in the laboratory and the video demonstration was then discussed online with the students. In addition to demonstrations, several experimental learning videos from various websites were presented.

The Biology programme does not offer an international class; the main teaching language is Bahasa Indonesia. However, English is used in lecture materials (Presentations, PowerPoint slides) and references in many courses. In addition, there is the Biology English club and in general, the teachers and students' English proficiency is high.

In summary, the peer group considers 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 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).

Criterion 2.4 Support and assistance

Evidence:

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

Preliminary assessment and analysis of the peers:
UNILA 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 approximately 20 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 peers 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.

The fourth-year students who prepare their final project (mini-thesis) usually have two supervisors, who are selected based on the topic of the final project. One supervisor could be an external supervisor, if the student performs the final project outside UNILA. The thesis supervisor is responsible for providing advice and guidance to students in determining research topics, writing proposals, supervising the implementation of research, writing reports, and assisting students in presenting their research results.

All students at UNILA have access to the digital academic information system (Sistem Informasi Akademik, SIAKADU). The students' profiles (student history, study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via SIAKADU. In addition, course materials and supporting documents compiled by the lecturers are provided via SIAKADU.

To help students finding suitable jobs after graduation, UNILA has established the Center for Career and Entrepreneurship Development (CCED), which announces job vacancies and opportunities to students, offers career guide and coaching, provides psychological support, and conducts alumni surveys.

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

The peers 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.

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

The peers appreciate that UNILA will revise the curriculum and raise the share of practical laboratory work to about 34.72%. In addition, courses on bioinformatics, molecular genetics, introduction to omics and nanotechnology will be added to the curriculum.

The peers support UNILA in further increasing students' and teachers' academic mobility by inviting more visiting lecturers, establishing more international cooperations, and improving the students' active English speaking skills.

The peers consider criterion 2 to be mostly fulfilled.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- Self-Assessment Report
- Module descriptions
- UNILA Academic Guidelines

Preliminary assessment and analysis of the peers:

According to the Self-Assessment Reports, the students' academic performance is evaluated based on written exams (e.g., multiple choice, essays, quizzes, and calculations), oral exams, presentations, practical work, papers, and reports.

The teaching team can perform assessment techniques in the form of observation, participation, performance, written tests, and oral tests. The result of the assessment is obtained from the integration of the various assessment techniques and instruments used.

Assessment of learning processes and outcomes can be done in the form of quizzes, structured assignments, practicum exams, mid-semester exams, end-of-semester exams, and classroom observations. In the practical work, students are required to make a report on the observations that are evaluated by a laboratory assistant. Students are required to attend at least 80 % of the lectures and have to participate in all practical activities.

The form of each exam is mentioned in the module descriptions that are available to the students via UNILA's homepage and the digital platform SIAKADA. Usually, there are two written exams in each course (besides the assignments, homework, and presentations); the mid-term exam is conducted in 8th week of the semester and the final exam in 16th week.

Supplementary examinations or substitutes are permitted for students who have valid reasons (such as illness as evidenced by a doctor's letter or for students with disabilities or other limitations with compensation agreed upon individually) after obtaining approval from the respective teacher.

All stages of the learning assessment results are announced to students to be checked for correctness. If there is an error by the lecturer in giving grades, students can apply for correction of grades to the teacher by bringing evidence in the form of exam files and structured assignments. Students can access their grades at any time through SIAKADU.

Students in the final year are required to complete a final project (mini-thesis) by conducting research according to their field of interest. Each student will be guided by two supervisors who are determined by the Head of the Study Programme according to their expertise. The purpose of this final project is to synthesize knowledge, apply scientific methods in problem-solving, obtain research objectives and deepen understanding in the research area of interest. The thesis includes writing a proposal in the seminar, preparing the written thesis, and presenting the results in the thesis seminar. Project proposal and thesis seminars are assessed based on three aspects of skills, namely quality of written material, presentation performance (language and style), and mastery of concepts.

If a student fails a course in a certain semester, the student can re-take the course at the next opportunity. Students are given twice the opportunity to re-take failed courses. If students still fail, they will be facilitated with a remedial course called Studi Terbimbing. Which means that students attend an additional coaching course in order to prepare them for passing the final exam.

Finally, the peers point out that the term “Mini-Thesis” is not appropriate, because it diminished the students’ work. UNILA should instead use the term “Bachelor’s Thesis” in all documents.

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

UNILA does not comment on this criterion in its statement.

The peers consider criterion 3 to be fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

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

Preliminary assessment and analysis of the peers:
At UNILA, 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 Biology programme consists of 53 full-time teachers (2 full professors, 26 associate professors, 18 assistant professors, and 9 lecturers). More than half of the teachers (29) hold a PhD, the rest (22) hold a Master's degree. Four teachers are currently pursuing a PhD degree. The teacher to student ratio is 1:14. The details are shown in the following table:

Academic degree	Number of persons
Doctoral	29
Master	22
Ongoing Doctoral Programme	4
Academic rank	**Number of persons**
Professor	2
Associate Professor	26
Assistant Professor	18
Lecturer	9

Table 4: Academic Staff Members, Source: UNILA Self-Assessment Report

Details of the academic qualifications of the teachers are described in the staff handbook, which is accessible via the programme'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.

During the audit, the peers discuss with the representatives of the Rector's Office, why there are only two full professors in the Department of Biology. They learn that there are 35 full professors at FMIPA and, obviously, the share in the Biology Department is lower, but two more teachers from the Biology Department have recently been promoted to full professors. The peers see that the university is supporting its teachers to become full professors and support UNILA and especially the Department of Biology in further pursuing this path.

The peers discuss with UNILA's management how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UNILA's management, which subsequently announces the vacancies on UNILA's webpage. One way to recruit new teachers is to send promising Master's students from UNILA abroad to complete their PhD and then to hire them as teachers once they are finished.

During the audit, the peers 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 FMIPA have a 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 peers confirm that the composition, scientific orientation and qualification of the teaching staff – beside the already mentioned points – are suitable for successfully implementing and sustaining the degree programme.

Criterion 4.2 Staff development

Evidence:

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

Preliminary assessment and analysis of the peers:

UNILA 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, 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 UNILA 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 programme organise trainings to upgrade lecturers' pedagogical content knowledge on a regular basis.

Young staff members with a Master's degree are encouraged to pursue doctoral studies (usually abroad). To support this policy, UNILA provides foreign language training and organises seminars presenting scholarships from various sources.

Teachers' performance at FMIPA is evaluated through BKD (Lecturer Workload), SKP (Employee Performance Goals), and MySAPk (Personnel Service Application System). The performance of lecturers and staff is also evaluated based on the results of students' questionnaires.

During the audit, the peers inquire if the teaching staff has the opportunity to spend time abroad and to participate in international projects. They learn that UNILA and FMIPA provide 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 travelling. The teachers are satisfied with the existing opportunities and the available financial support.

The peers 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 UNILA, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars; even a sabbatical leave is possible.

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

Criterion 4.3 Funds and equipment

Evidence:

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

Preliminary assessment and analysis of the peers:
Basic funding of the undergraduate programme and the facilities is provided by UNILA and FMIPA. The financial sources are government funding, tuition fees from students, community and industry funding. Additional funds for research activities can be provided by UNILA or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them.

The provided budget allows the departments to conduct the study programme as well as some specific activities, including student exchange programmes, student financial assistance for research, and participation in international conferences. The academic staff members emphasise that from their point of view, the Biology programme receives sufficient funding for teaching and learning activities.

The implementation of the Biology programme is supported by facilities, which include offices, lecture rooms, and laboratories. Other public facilities such as health services, sports, and conference halls are available and managed by the university. There are six laboratory buildings at FMIPA, namely Basic Physics, Basic Chemistry, Computers, Biology, Biochemistry, and Instrumentation. The Biology programme has nine laboratories (Molecular Biology Laboratory, Botanical Laboratory, Zoology Laboratory, Ecology Laboratory, Microbiology Laboratory, Plant Tissue Culture Sub Laboratory, Animal Tissue Culture Sub Laboratory, Plant Taxonomy Sub Laboratory, and Plant Physiology Sub Laboratory. Besides these, there is an Experimental Animal House, a Green House, an Experimental Garden, and the UNLIA Educational Forest.

The Biology programme also collaborates with public institutions such as Liwa Botanical Gardens, Lampung Veterinary Center, Lampung Marine Cultivation Center, Natural Resource Conservation Center Bengkulu, Bukit Barisan Selatan National Park), and Way Kambas National Park.

In advance of the audit, the peer group received videos showing some of the laboratories at the Faculty of Mathematics and Natural Sciences and the Department of Biology. They notice that there are no bottlenecks due to missing equipment or a lacking infrastructure. The technical equipment for teaching the students on a Bachelor's level is available. Moreover, the peers learn during the audit that students can use and operate the instruments in the laboratories by themselves after being trained and instructed by either senior students or lab technicians. At the beginning of each practicum, students are introduced to safety regulations and waste treatment. Each laboratory has a lab supervisor; in addition, there are several senior students that work as lab assistants. However, the peers notice while watching the videos, that the students do not wear any goggles or gloves in the laboratories and that the door to microbiology seems to be open to the outside. The peers emphasise that safety measure in the laboratories are very important and need to be followed strictly.

The peer group sees that modern research equipment for advanced laboratory work is available in the Integrated Laboratory UPT, which is used by staff members from all faculties. In the Integrated Laboratory, some advanced instruments are available and it is possible for teachers and senior students to use the technical equipment upon appointment. UPT is also used by companies from the area and UNILA cooperates with them in conducting applied research projects. In addition, FMIPA cooperates with companies and research institutions, where students can conduct the internship and the final project. Due to these collaborations, students can use the technical equipment in these institutions, which is sometimes more sophisticated than at UNILA.

During the audit, the peers learn that experiments in the Bachelor's programme Biology are usually done by a group of three to five students; the exact group size depends on the specific class. The peers point out that all students need to have the opportunity to get hands-on experience with carrying out laboratory experiments. For this reason, the number of students conducting one experiment should be limited to a maximum of two to three students. While watching the videos, the peers also notice that some of the laboratories were quite crowded and that many students were conducting the experiments at the same time. To this respect, it would be useful to increase the laboratory space. In addition, it would be very useful increasing the share of practical laboratory work (see Criterion 2.1). For this reason, the peers expect UNILA to submit a schedule and financing plan on how to update and increase the basic instruments and the technical equipment in the teaching laboratories within the next five years so that experiments can be done by groups of not more than two to three students. The first steps towards concrete implementation should be taken as soon as possible.

The students also express their satisfaction with the library and the available literature there. Remote access via VPN is possible (there is Digital Library UNILA for this purpose) and UNILA offers access to several scientific digital databases such as ScienceDirect and Scopus, so that teachers and students have sufficient access to current scientific papers, e-books, and papers.

In summary, the peer group judges the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms etc.) to comply – besides the mentioned restrictions – with the requirements for adequately sustaining the degree programme.

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

As UNILA points out in its statement, the university will not only provide additional laboratory instruments but also laboratory space, where students can conduct the experiments. A "Master Plan" for improving the facilities and the technical equipment in the Biology programme has been drafted and the respective budget has been submitted to the Faculty of Mathematics and Natural Sciences.

The peers acknowledge these plans and expect UNILA to submit verification of their implementation in the further course of the procedure.

The peers consider criterion 4 to be mostly fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Self-Assessment Report
- Module descriptions
- Homepage Ba Biology: https://biologi.fmipa.unila.ac.id/en/undergraduate-program-in-biology/
- Homepage UNILA: https://www.unila.ac.id/en/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The students, as all other stakeholders, have access to the module descriptions via UNILA's homepage.

After studying the module descriptions of the Biology programme, the peers point out that they do not include all necessary information. Especially information about the students' total work load, the awarded credit points (SCU and ECTS), and the contribution of the different exams to the final grade is either missing or is incomplete. In addition, several literature references are outdated.

For this reason, the peers expects UNILA to update of the module descriptions and to include all required information.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Sample Diploma
- Sample Diploma Supplement

Preliminary assessment and analysis of the peers:
The peers confirm that the biology students are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The peers point out that the Diploma Supplement should be aligned with the European template. Using a standardised form facilitates academic and professional recognition, thus increasing the transparency of qualifications. In addition, the Diploma

Supplement should include information on the relative grade (e.g., A, B, C, D) or statistical information about the distribution of the final grade in order to assess the individual performance in comparison to other graduates.

The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA. However, the peers point out that the Transcript of Records should also mention the awarded ECTS point points for each course.

Criterion 5.3 Relevant rules

Evidence:

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

Preliminary assessment and analysis of the peers:
The auditors confirm that the rights and duties of both UNILA 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.

In addition, all relevant information about the degree programme (e.g., module handbook, study plan, profile) is available on the English homepage of the programme.

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

The peers expect UNILA to provide the updated module descriptions in the further course of the procedure.

Together with its statement, UNILA provides a sample Diploma Supplement, which is aligned with the European template and which includes all necessary information. In addition, the Transcript of Records now also includes the number of awarded ECTS points for each course.

The peers consider criterion 5 to be mostly fulfilled.

6. Quality management: quality assessment and development

Evidence:

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

Preliminary assessment and analysis of the peers:
The peers discuss the quality management system at UNILA with the programme coordinators. The peers learn that there is an institutional system of quality management aiming at continuously improving the degree programme.

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 UNILA. 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). The Bachelor's degree programme Biology has received the highest accreditation status (A) from BAN-PT.

At university level, the implementation of internal quality assurance is coordinated by the Institute for Learning Development and Quality Assurance (LP3M), which has several centers related to internal quality assurance, namely:

1) Center for Quality Assurance (Pusat Penjaminan Mutu) related to the implementation of internal quality audits,

2) Center for Curriculum Development and Management of Independent Learning Independent Campus (MBKM), related to curriculum monitoring and evaluation activities, including internships, and student exchanges,

3) Center for Development of Instructional Activities and Learning Innovations (Pusat Pengembangan Aktivitas Instruksional dan Inovasi Pembelajaran), related to monitoring and evaluating the use of learning strategies, and

4) Center for Development of Online Learning and Distance Education (Pusat Pengembangan Pembelajaran Daring dan Pendidikan Jarak Jauh), related to monitoring and evaluating the use of e-learning and online learning media in improving student learning outcomes.

On the faculty level, the implementation of internal quality assurance is coordinated by the Faculty Quality Assurance Team (TPMF), while at programme level it is carried out by the Study Program Quality Assurance Team (TPMP).

Internal assessment of the quality of the degree programme is mainly provided through student, alumni, and employer surveys. The students give their feedback on the courses by filling out the questionnaire online at the end of 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. In addition, there is a suggestion box in the Department of Biology, where students can leave their comments if some issue comes up or if something needs to be improved.

Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on the digital platform SIAKADU. The peers point out that there should be a regular and institutionalised survey on students' workload in every course. For example, this could be done by including a respective question in the course questionnaires that students have to fill out at the end of each semester (see Criterion 2.2).

The peers notice during the discussion with the students and the teachers that the results of the course questionnaires are not discussed with the students. For this reason, there should be an institutionalised procedure that ensures that all teachers are obliged to discuss the results of the questionnaires and possible improvements directly with the students. The feedback cycles need to be closed.

In addition, UNILA regularly conducts alumni tracer studies. By taking part at this survey, alumni can comment on their educational experiences at UNILA, the waiting period for employment after graduation, their professional career and can give suggestions how to improve the programme. Furthermore, there is the Career Development Centre at UNILA, which offers help to find suitable internships, announces job vacancies, and offers courses to develop soft skills. FMIPA organises a job fair every year, in addition, the contacts students make during the internship and the final project, which can be conducted outside UNILA, sometimes lead to job offers.

The peers discuss during the audit 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 programme. They learn that some employers and alumni are invited to give their feedback on the content of the degree programme and participate in the tracer studies. The peers appreciate that UNILA stays in contact with its alumni and has a close relation with its partners. However, an advisory board with external stakeholders only exists on university level, with members from the local government, the Indonesian Ministries, companies, and professional societies. The board meets every three

months. As the peers consider the input of the employers to be very important for the further improvement of the degree programme, they appreciate the existing culture of quality assurance with the involvement of employer in the quality assurance process. Nevertheless, they recommend establishing an academic advisory board at the Faculty of Mathematics and Natural Sciences or even at the Department of Biology. The advisory board should consist of a group of professionals, employers, and experts of the relevant biology fields from outside the university.

During the audit, the peers learn that students are not official members of the boards, but they can make suggestions to the Dean or the Head of Study Programme. Thus, students are not directly involved in the decision-making processes. The peers are convinced that it would be very useful to have student members in the different boards. For this reason, they recommend that students' representatives should be members of the boards at UNILA at least on faculty or department level and be actively involved in the decision-making processes for further developing the degree programme.

In summary, the peer group confirms that the quality management system is suitable to identify weaknesses and to improve the degree programme. All stakeholders are involved in the process.

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

The peers appreciate that UNILA has revised the questionnaires, which now include a question with respect to the students' actual workload. The peers expect UNILA to present the results in the further course of the procedure and to include this information in all module descriptions. UNILA should also provide verification, that the results of the course questionnaires are discussed with the students.

Together with its statement, UNILA submits a document verifying the establishment of an advisory board at the Faculty of Mathematics and Natural Sciences. The members include external stakeholders (alumni, high school representative, industry, NGO, public institutions) as well as the Heads of Department and representatives from the Faculty of Mathematics and Natural Sciences.

The peers consider criterion 6 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:

- none

E Comment of the Higher Education Institution (03.02.2023)

UNILA provides the following statement:

“In regard of the credit semester given for laboratory work, the PS S1 Biologi has revised its curriculum in order to accommodate the number of practical laboratory work which is about 34.72%. This percentage of practical work closes to the SCU stipulated by the Higher Education Directorate of Ministry Education and Culture of Indonesia (information is provided in PS S1 Biologi- Universitas Lampung website).

While the curriculum was revised, the area of modern biology was also added to the curriculum, such as bioinformatics, molecular genetics, introduction to omics and nanotechnology (while immunology is already in the curricula of PS S1 Biologi – Unila). In addition to it, specific courses will also integrate modern biology in their course materials, for instance in courses of ecophysiology (plant & animal), food/industrial microbiology, immunobiology/immunology.

Related to student mobility, the study program is going to encourage its students to involve actively in many different program of IISMA and to provide incentives for it (this incentive has already set in annual budget plan of Math & Natural Sciences Faculty). Yet in the last 4 years 2 students (on behalf of Lili Utami year 2018 and Diky Dwi Alfandi year 2019) had involved in IISMA with the CARGILL program and 1 student (Mutiara Dinda Lestari year 2019) jointed training program/exchange program in UPM (Universiti Putra Malaysia).

The study program supported by Faculty (FMIPA) & University (UNILA) is going to encourage its staff to apply for staff mobility either in national or international and invite more visiting lecturers. The program of staff mobility and visiting lecturers had also set in annual budget plan of Math & Natural Sciences Faculty. Meanwhile, to improve and to make better adjustment in speaking English the dean also had made some regulation in one day speaking English on every Friday for every civitas academica of Math and Natural Sciences Faculty (the regulation is also provided in website).

In order to achieve more international cooperations, the Study Program with Faculty is going to elaborate more with Unila Center of Foreign Cooperation, the resource person for ERASMUS & DAAD will be invited regularly (twice a year) to deliver their program in front of civitas academica (students & staffs).

The study program had already converted of its SCU to ECTS which is given in every modules/courses and will be shared in website.

Related to the student actual workload, questionnaire actual workload had been revised and put in every module of each course (it is also provided in website). The students' workload in ECTS credits had also been revised and provided in the module/study plans (RPS) for every course. The revised questionnaires on survey students' workload in every course also will be added in the academic information system of Unila (SIAKADU). Implementation of this revised questionnaire will be given to end of this coming semester. In addition to it, Course questionnaires for every course will be scheduled to be discussed at the beginning semester in the class while the course contract between the lecture and the students is also discussed and will be signed for both parties with agreement.

Laboratory facilities. As those already stated in criterion 2.1, the HEI commitment is going to provide not only laboratory instruments but also spaces which are able to accommodate the need of students to conduct experiment. Master plan of improving space and equipment of laboratory of PS S1 Biologi had been made and its budget plant had already accommodated in the annual budget plan of Math & Natural Sciences Faculty in viscal year 2023.

The information about the students' total work load, with the awarded credit points (SCU and ECTS) had been added to the Modules and the modules were also revised for literature references and all of this information was put in the website.

Related to the Diploma supplement, we had already issued it with European style to the University level under vice rector of student affairs and provided for every graduated student. The form of diploma supplement could be seen in website. While the student Transcript of Records also had been provided with the awarded ECTS points for each course and the example of it could be seen in website.

Regarding the results of the student questionnaires related to courses content and staff/lecturer will be scheduled to be discussed at the beginning semester in the class while the course contract between the lecture and the students is also discussed and signed for both parties with agreement. This action is needed in order to get possible improvements directly with the students as it had been suggested by the peer.

In regard of academic advisory board at the Faculty of Mathematics and Natural Sciences and at the Department of Biology had been formed from which the academic advisory board had been pointed and regulated with the Decree of The Dean of Math and Natural Sciences Faculty. They are consisted of: Alumni, Higher School Representative, Industry, NGO, Government, Head of Departments in Math and Natural Sciences Faculty, Professor

Representatives for every department in Math and Natural Sciences Faculty (the last two are excluded for the academic advisory board in the Department of Biology – Unila).

F Summary: Peer recommendations (21.02.2023)

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

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology	With requirements for one year	-	30.09.2028

Requirements

A 1. (ASIIN 2.2) Make sure that the awarded ECTS points comply with the students' total workload.

A 2. (ASIIN 4.3) Provide a concept how to increase the scope of practical laboratory work and how to provide enough and up-to-date technical equipment so that experiments can be done by groups of not more than two to three students.

A 3. (ASIIN 5.1) The module descriptions need to include information about the students' total workload, the awarded ECTS points, and the composition of the final grade.

A 4. (ASIIN 6) Close the feedback cycles and make sure that all teachers discuss with their students about the results of the questionnaires and what improvements might be possible.

Recommendations

E 1. (ASIIN 2.1) It is recommended to further promote the academic mobility of the students and to cooperate with more renowned international universities.

E 2. (ASIIN 2.1) It is recommended to put a stronger focus on teaching modern subjects in Biology, such as Bioinformatics, Molecular Biology, Immunology, and Molecular Genetics.

E 3. (ASIIN 4.3) It is recommended to follow the safety regulations in the laboratories more strictly.

E 4. (ASIIN 5.1) It is recommended to update the literature references in the module descriptions.

E 5. (ASIIN 6) It is recommended to make students' representatives members of the boards at UNILA and to directly involve them in the decision making processes for further developing the degree programme.

G Comment of the Technical Committee 10 – Life Sciences (13.03.2023)

Assessment and analysis for the award of the ASIIN seal:

The procedure was conducted online in December. Overall, the expert group was positively surprised by the quality of the study programme and the university.

The Technical Committee discusses the procedure and the requirements and recommendations proposed by the experts. The four requirements concerning the technical laboratory equipment, the ECTS points awarded, the module descriptions and the teaching evaluations are supported. These are typical problems at Indonesian universities. The five recommendations are also considered reasonable.

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	With requirements for one year	-	30.09.2028

H Decision of the Accreditation Commission (24.03.2023)

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

The Accreditation Commission discusses the procedure and decides that recommendation E3 should be upgraded to a requirement, because it is important that all safety regulations in the laboratories are strictly followed. Otherwise, the AC agrees with the proposed requirements and recommendations.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology	With requirements for one year	-	30.09.2028

Requirements

A 1. (ASIIN 2.2) Make sure that the awarded ECTS points comply with the students' total workload.

A 2. (ASIIN 4.3) Provide a concept how to increase the scope of practical laboratory work and how to provide enough and up-to-date technical equipment so that experiments can be done by groups of not more than two to three students.

A 3. (ASIIN 4.3) Ensure that the safety regulations in the laboratories are strictly followed.

A 4. (ASIIN 5.1) The module descriptions need to include information about the students' total workload, the awarded ECTS points, and the composition of the final grade.

A 5. (ASIIN 6) Close the feedback cycles and make sure that all teachers discuss with their students about the results of the questionnaires and what improvements might be possible.

Recommendations

E 1. (ASIIN 2.1) It is recommended to further promote the academic mobility of the students and to cooperate with more renowned international universities.

E 2. (ASIIN 2.1) It is recommended to put a stronger focus on teaching modern subjects in Biology, such as Bioinformatics, Molecular Biology, Immunology, and Molecular Genetics.

E 3. (ASIIN 5.1) It is recommended to update the literature references in the module descriptions.

E 4. (ASIIN 6) It is recommended to make students' representatives members of the boards at UNILA and to directly involve them in the decision making processes for further developing the degree programme.

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:

Attitudes (AT)	General skills (GS)	Specific skills (SS)	Knowledge (KN)
1. Piety to God Almighty and able to demonstrate an attitude of religious 2. Uphold the human values in the line of duty based on religion, morals, and ethics. 3. Contribute to improving the quality of life of society, nation, state, and civilization based on Pancasila. 4. Being a good citizen, proud of nationality, patriotic, and accountable to the state and nation; 5. Appreciate the diversity of cultural, views, religions, and beliefs, as well as the opinion or original findings of others; 6. Working together and have social sensitivity and concern for people and the environment 7. Obeying the law and discipline in the life of society and state 8. Integrating values, norms, and academic ethics 9. Show a responsible attitude on the job in his field of expertise independently 10. Internalize the spirit of independence, effort and entrepreneurship	1. Apply logical thinking, critical, systematic, and innovative in the context of the development or implementation of science and / or technology relevant to their expertise; 2. Able to perform a task independently, qualified, and structured. 3. Assessing the implications of the development or implementation of science and technology in accordance with his expertise based on rules, procedures and scientific ethics to produce solutions, ideas, design or art criticism, and to develop a scientific description of the study results in the form of a thesis or final project report 4. Able to develop scientific description of the results of the study in the form of a thesis or final project report, and uploading them in the institutional website. 5. Taking the right decisions in the context of problem-solving in the field of biology, based on the analysis of information and data 6. Develop and maintain a network with mentors, colleagues, peers, both inside and outside the institution. 7. Able to be responsible for the achievement of group work and supervision and evaluation of the completion of the work assigned to workers who are under their responsibility 8. Able to perform self-evaluation process of the working groups under its responsibility, and are able to manage self-directed learning 9. Capable of documenting, storing, securing, and searching back the data to ensure the validity and prevent plagiarism	1. Able to search, evaluate and synthesize information in the field of biology with the correct terminology from various scientific literatures. 2. Able to choose the right instruments and materials to test and/or answer research questions in the field of biology, both on a laboratory and field scale. 3. Able to compile, organize, process, and analyze research data using information technology applications and present it orally or in writing in front of an audience of various backgrounds. 4. Able to apply the principles of work safety in biological research both in the laboratory and in the field. 5. Able to practice biological knowledge and skills in employment/institutions related to the assessment and management of living natural resources and the environment 6. Able to identify, analyze, and develop procedural community problem solving plans through a biological approach from the molecular level to the macroscopic level.	1. Mastering knowledge of facts, concepts, principles, laws and basic theories in the core fields of biology: animal, plant, microorganism, and environmental biology. 2. Able to apply knowledge and technology related to biodiversity and its response to the environment. 3. Mastering the principles of scientific methods to gain knowledge of phenomena that exist in living systems. 4. Mastering the physic-chemical concepts that control the processes that take place in living systems. 5. Mastering important biological concepts and principles that have been, are being, and may be applied in everyday life. 6. Mastering the principles of ethics and safety in the use of biological research results. 7. Mastering the basic principles of software applications, basic instruments, standard method for analysis, synthesis, and presentation of data/information in general and specific biology.

The following **curriculum** is presented:

Semester 1

No.	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	UNI620105	Religion Education	√		2	0	1	3
2	UNI620108	Pancasila Education	√		2	0	0	2
3	UNI620109	Ethics and Local Wisdom Education	√		2	0	0	2
4	MIP620101	Basic Sciences	√		2	0	0	2
5	BIO620101	General Biology	√		3	0	0	3
6	BIO620102	Biostatistics	√		2	0	0	2
7	BIO620103	English	√		2	0	0	2
8	BIO620104	Laboratory Basic Skill Practice	√		0	2	0	2
9	KIM620121	Organic Chemistry	√		2	0	0	2
10	KIM620122	Organic Chemistry Practice	√		0	1	0	1
The Number of Credits in Semester 1			10	0	17	3	1	21

Semester 2

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	UNI620106	Indonesian Language	√		2	0	0	2
2	UNI620107	Civic Education	√		2	0	0	2
3	BIO620105	Biochemistry	√		2	0	0	2
4	BIO620106	Biochemistry Practice	√		0	1	0	1
5	BIO620107	Cell Biology	√		2	0	0	2
6	BIO620108	Cell Biology Practice	√		0	1	0	1
7	BIO620109	Lower Botany Plant	√		3	0	0	3
8	BIO620110	Lower Plant Botany Practice	√		0	1	0	1
9	BIO620111	Invertebrate Zoology	√		3	0	0	3
10	BIO620112	Invertebrate Zoology Practice	√		0	1	0	1
11	BIO620113	Professional English	√		2	0	0	2
12	BIO620114	Entrepreneurship	√		2	0	0	2
The Number of Credits in Semester 2			12	0	18	4	0	22

Semester 3

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	BIOI620201	Microbiology	√		3	0	0	3
2	BIOI620202	Microbiology Practice	√		0	1	0	1
3	BIOI620203	Vascular Plant Botany	√		3	0	0	3
4	BIOI620204	Vascular Plant Botany Practice	√		0	1	0	1
5	BIOI620205	Vertebrate Zoology	√		3	0	0	3
6	BIOI620206	Vertebrate Zoology Practice	√		0	1	0	1
7	BIOI620207	Genetics	√		3	0	0	3
8	BIOI620208	Genetics Practice	√		0	1	0	1
9	BIOI620209	Ecology	√		3	0	0	3
10	BIOI620210	Ecology Practice	√		0	1	0	1
11	BIOI620211	Biological Microtechnique	√		2	0	0	2
12	BIOI620212	Biological Microtechnique Practice	√		0	1	0	1
The Number of Credits in Semester 3			12	0	17	6	0	23

Semester 4

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	BIOI620213	Plant Physiology	√		3	0	0	3
2	BIOI620214	Plant Physiology Practice	√		0	1	0	1
3	BIOI620215	Animal Physiology	√		3	0	0	3
4	BIOI620216	Animal Physiology Practice	√		0	1	0	1
5	BIOI620217	Microbial Physiology	√		3	0	0	3
6	BIOI620218	Microbial Physiology Practice	√		0	1	0	1
7	BIOI620219	Environmental Impact Analysis	√		3	0	0	3
8	BIOI620220	Environmental Impact Analysis Practice	√		0	1	0	1
9	BIOI620221	Research Methodology	√		3	0	0	3
10	BIOI620222	Scientific Writing Practice	√		0	1	0	1
11	BIOI620223	Nanobiology Introduction	√		2	0	0	2
12	BIOI620224	Evolution	√		2	0	0	2
The Number of Credits in Semester 4			12	0	18	5	0	23

Semester 5

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	BIO620301	Molecular Biology	√		2	0	0	2
2	BIO620302	Molecular Biology Practice	√		0	1	0	1
3	BIO620303	Animal Development Biology	√		2	0	0	2
4	BIO620304	Animal Development Biology Practice		√	2	0	0	2
5	BIO620305	Entomology		√	2	0	0	2
6	BIO620306	Plant Embryology		√	2	0	0	2
7	BIO620307	Wild Life Ecology		√	2	0	0	2
8	BIO620308	Phytohormones		√	2	0	0	2
9	BIO620309	Animal Behavior		√	2	0	0	2
10	BIO620310	Animal Behavior Practice		√	0	1	0	1
11	BIO620311	Underground Biodiversity		√	2	0	0	2
12	BIO620312	Underground Biodiversity Practice		√	0	1	0	1
13	BIO620313	Economic Botany and Ethnology		√	2	0	0	2
14	BIO620314	Economic Botany and Ethnology Practice		√	0	1	0	1
15	BIO620315	Weed Biology		√	2	0	0	2
16	BIO620316	Food and Industrial Microbiology		√	2	0	0	2
17	BIO620317	Food and Industrial Microbiology Practice		√	2	1	0	1
18	BIO620318	Freshwater Biology		√	2	0	0	2
19	BIO620319	Herpetology		√	2	0	0	2
20	BIO620320	Animal Ecophysiology		√	2	0	0	2
The Number of Credits in Semester 5			3	17	29	5	0	34

Semester 6

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	BIO620321	Plant Tissue Culture	√		2	0	0	2
2	BIO620322	Plant Tissue Culture Practice	√		0	1	0	1
3	BIO620323	Field Work Practice	√		0	0	2	2
4	BIO620324	Immunology		√	2	0	0	2
5	BIO620325	Biological Control		√	2	0	0	2
6	BIO620326	Endocrinology		√	2	0	0	2
7	BIO620327	Plant Ecophysiology		√	2	0	0	2
8	BIO620328	Palynology		√	2	0	0	2
9	BIO620329	Pteridology		√	2	0	0	2
10	BIO620330	Mammalogy		√	2	0	0	2
11	BIO620331	Bryology		√	2	0	0	2
12	BIO620332	Secondary Metabolite		√	2	0	0	2
13	BIO620333	Virology Introduction		√	2	0	0	2
14	BIO620334	Algology		√	2	0	0	2
15	BIO620335	Environmental Microbiology		√	2	0	0	2
16	BIO620336	Terrestrial Ecology		√	2	0	0	2
17	BIO620337	Terrestrial Ecology Practice		√	0	1	0	1
18	BIO620338	Animal Ecophysiology		√	2	0	0	2
19	BIO620339	Aquatic Ecology		√	2	0	0	1
20	BIO620340	Aquatic Ecology Practice		√	0	1	0	2
The Number of Credits in Semester 6			3	17	29	3	2	37

Semester 7

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	UNI620407	Community Service Program	√		0	0	3	3
2	BIO620402	Proposal Seminar	√		0	1	1	1
3	BIO620403	Biogeography		√	2	0	2	2
4	BIO620404	Mycology		√	2	0	0	2
5	BIO620405	Population Genetics		√	2	0	0	2
6	BIO620406	Marine Biology		√	2	0	0	2
7	BIO620407	Planktology		√	2	0	0	2
8	BIO620408	Soil Microbiology		√	2	0	0	2
9	BIO620409	Bacterial Taxonomy and Identification Practice		√	0	1	0	1
10	BIO620410	Animal Parasitology		√	2	0	0	2
11	BIO620411	Animal Parasitology Practice		√	0	1	0	1
12	BIO620412	Orchidology		√	2	0	0	2
13	BIO620413	Animal Tissue Culture		√	2	0	0	2
14	BIO620414	Ichthyology		√	2	0	0	2
15	BIO620415	Conservation Biology		√	2	0	0	2
16	BIO620416	Ornithology		√	2	0	0	2
The Number of Credits in Semester 7			2	14	24	2	4	30

Semester 8

No	Course Codes	Course Names	Status		Credit (s)			
			Compulsory	Optional	Theory	Practicum	Practice	Total
1	BIO620416	Undergraduate Thesis Seminar	√		0	0	1	1
2	BIO620417	Undergraduate Thesis	√		0	0	4	4
The Number of Credits in Semester 8			2	0	0	0	5	5