ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes
Biology
Chemistry

Provided by
Universitas Diponegoro, Indonesia

Version: 08 December 2023

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Program Sarjana Biologi	Bachelor programme in Biology	ASIIN	BAN-PT, 2024 „A“	10
Program Sarjana Kimia	Bachelor programme in Chemistry	ASIIN®	BAN-PT, 2024 „A“	09
Date of the contract: 05.07.2021 **Submission of the final version of the self-assessment report:** 16.10.2021 **Date of the audit (online):** 22.02. – 24.02.2022				
Peer panel: Prof. Dr. Kerstin Hoffmann-Jacobsen, University of Applied Sciences Niederrhein Prof. Dr. Werner Manz, University of Koblenz-Landau Prof. Dr. Ralph Schill, University of Stuttgart Dr. Fabian Simon, Robert Bosch GmbH, Tübingen Ray Steven, Institut Teknologi Bandung, student				
Representative of the ASIIN headquarter: Rainer Arnold				
Responsible decision-making committee: Accreditation Commission				
Criteria used: European Standards and Guidelines as of 15.05.2015				

[1] ASIIN Seal for degree programmes;
[2] TC: Technical Committee for the following subject areas: TC 09 – Chemistry; TC 10 – Life Sciences

ASIIN General Criteria as of 28.03.2014 Subject-Specific Criteria of Technical Committee 09 – Chemistry as of 29.03.2019 Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of 28.06.2019	

B Characteristics of the Degree Programmes

a) Name	Final degree (original)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor in Biology	Sarjana Sains (S.Si.) Biologi / Bachelor of Science in Biology	-	6	Full time	no	8 Semester	144 SKS / 230 ECTS	1987, Once a year (August)
Bachelor in Chemistry	Sarjana Sains (S.Si.) Kimia / Bachelor of Science in Chemistry		6	Full time	no	8 Semester	144 SKS / 230 ECTS	1987, Once a year (August)

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

For the Bachelor's degree programme Biology, Universitas Diponegoro (UNDIP) has presented the following profile on its homepage:

"Vision:

Become a research-based education center that excels at the utilization and development of sustainable natural resources.

Mission:

To provide high education in the field of excellence in biology, morality, ethics, competence, character, and knowledge.

To implement and improve the quality of creative and innovative research of the utilization and sustainable development of natural resources.

To implement and improve the quality and quantity of devotion to the community through public education on the utilization and development of sustainable natural resources.

Objectives:

The ability to work as biological analysts, entrepreneurs, practitioners, researchers, and supporting staff, competently, innovatively and independently, to implement developments in the fields of biology.

The ability to produce high quality publications and technological innovations on the use and development of biological resources in the industrial/food/health/bioenergy/environmental sectors.

The ability to carry out community service programs that educate local communities on the utilization and development of sustainable biological resources."

For the Bachelor's degree programme Chemistry, Universitas Diponegoro (UNDIP) has presented the following profile on its homepage:

"Vision

To become a chemistry education institution which is based on research that leads to technology independence and entrepreneurship skills in 2025

Mission

1. To produce graduates who master the knowledge of chemistry and have the ability to apply it, and have entrepreneurship skills (Communicator, Professional, Leader, Educator, Thinker and Entrepreneur).

2. To make research for the improvement of chemistry and its application based on its field of interest: (i) Natural Resources and Biomolecules, (ii) Materials and Process, and (iii) Energy.
3. To apply the results of education and research for fulfilling people's needs.

Objectives

The objective of the Chemistry Undergraduate Program is to produce graduates who have mastered the chemical sciences and their application and have the entrepreneurial skills needed to compete internationally. These competencies can be described as follows:

1. To be competent, qualified, competitive and possess entrepreneurial spirit as a result of student-centred learning methods (SCL) and long-life learning principles based on morals. These characteristics are needed to overcome community problems, to become involved in the development of science and technology, and to be able to adapt to industrial development.
2. To be capable of conducting chemical research, proactively, creatively, innovatively and intensively, in the local, national and international scope for the benefit of others.
3. To be able to contribute to the local community and the nation through the ability to identify and analyse community problems and then apply appropriate chemical science and technology to solve these problems, either partially or completely. These contributions are important for improving the quality of people's lives.
4. To be able to take on leadership roles and have a sense of professional ethics with high personal integrity.
5. To be able to work both independently and collaboratively in teams that consist of various disciplines."

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 plans of the degree programmes
- Module descriptions
- Webpage Ba Biology: https://bio.fsm.undip.ac.id/v1/en/home/
- Webpage Ba Chemistry: http://kimia.fsm.undip.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The peers base their assessment of the learning outcomes as provided on the websites and in the Self-Assessment Reports of both Bachelor's degree programmes under review.

The peers 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 programmes Biology as defined by UNDIP correspond to 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, biostatistics, molecular biology, cell biology, ecology, plant & animal physiology, and related natural sciences (chemistry, physics). They 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 in the course of the student's 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.

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

The goal of the chemistry programme is to impart essential competencies in mathematics, the natural sciences and the core subjects of chemical sciences (biochemistry, organic, inorganic, physical, and analytical chemistry). In addition, the graduates should learn about the different substance classes, their properties, reaction possibilities and uses, and be able to independently plan and carry out practical work. They also should be familiar with modern experimental methods of chemistry, the safe handling of chemicals, have a sound knowledge of safety and environmental issues and the underlying legal framework, and be able to interpret, critically assess, present and communicate relevant information and new research results, and to discuss them with specialist colleagues. Moreover, the graduates should be capable of using the acquired knowledge and skills to find solutions to practical chemical problems and for conducting scientific work. Finally, they should be familiar with chemical hazards and problems that are relevant for the community and be able to apply appropriate means to solve these problems, in order to improve the quality of people's lives. The chemistry programme focuses on (i) Natural Materials and Biomolecules, (ii) Materials and Processes, and (iii) Energy Systems and Environment.

Graduates of the chemistry programme have several job opportunities; they can work in the chemical or petrochemical industry, as teachers, at universities as well as in research institutes or in the public administration. The majority of chemistry graduates work in sectors such as chemical and pharmaceutical industry, oil and gas companies, mining and polymer industries, environmental research and monitoring institutions, public agencies, and educational institutions by becoming teachers or lecturers.

Finally, graduates of both undergraduate programmes should have adequate competencies in oral and written communication skills, be adaptive to the development of sciences, and have adequate English proficiency as well as a social and academic attitude.

In addition to the subject-related qualification objectives, students of both Bachelor's programmes should be capable of working autonomously as well as in a team-oriented manner, and be able to conduct research activities. Furthermore, they are able to solve subject-relevant problems, can present their results, have trained their analytical and logical abilities, and have an awareness of possible social and ethical effects of their actions. During the course of their studies, the students have acquired communicative and language skills, and have developed a strategy for life-long learning.

In summary, the peers are convinced that the intended qualification profiles of both undergraduate programmes under review allow graduates to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that they meet the goals set for them. The objectives and intended learning outcomes of both degree programmes under review are reasonable and well founded.

However, in general, the peers point out that UNDIP should regularly adapt the intended learning outcomes and the curriculum to technological advancements and current developments in chemistry and biology, in order to prepare graduates even better for the requirements of the job market. In addition, the intended learning outcomes should include that students should acquire soft skills such as presentation and communication skills as well as be familiarised with project-oriented work and good scientific practice.

The peers conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification and correspond sufficiently with the respective ASIIN Subject-Specific-Criteria (SSC) of the Technical Committee 10 – Life Sciences and the SSC of the Technical Committee 09 – Chemistry, Pharmacy.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report

Preliminary assessment and analysis of the peers:
The peers confirm that the English translation and the original Indonesian names of both degree programmes under review correspond with the intended aims and learning outcomes as well as the main course language (Indonesian).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Webpage Ba Biology: https://bio.fsm.undip.ac.id/v1/en/home/
- Webpage Ba Chemistry: http://kimia.fsm.undip.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The biology and the chemistry undergraduate programmes are offered by the Faculty of Science and Mathematics (FSM) of UNDIP.

Both Bachelor's degree programmes under review are designed for four years and at least 144 credit semester units (SKS) need to be achieved by the students in the Biology and Chemistry programmes (this is equivalent to approximately 230 ECTS points).

All undergraduate programmes at UNDIP are designed to be completed in eight semesters or four academic years with a maximum of 14 semesters or seven academic years. Each semester is equivalent to 16 weeks of learning activities including one week for midterm exams and one week for final exams. The odd semester starts in August and ends 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 UNDIP and the respective departments. University requirements are courses that need to be attended by all undergraduate students at UNDIP. There are seven university requirements: English, Bahasa Indonesia, Religion, Sports, Internet of Things, Pancasila and Civic Education, and Community Service. 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.

Courses on the different subject-specific sciences are offered from the third to the eighth semester. Elective courses can be taken from the second (chemistry) or third year (biology) 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 under-graduate thesis (6 SKS) and the community service (3 SKS).

Usually during the last year of studies, students must complete the community service. 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 take 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.

Both degree programmes include an internship. In the chemistry programme, the internship lasts a minimum of four weeks and in the biology programme a minimum of two 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 UNDIP Career Center, or the internship supervisor and need to submit an internship proposal.

The regular classes of the biology and chemistry programmes is conducted in Bahasa Indonesia, in addition an English class (IUP) is offered in both programmes. The courses for this class are conducted in English, and are offered to foreign students or Indonesian students who wish to attend the courses in English. Currently, there are 30 students in the biology international class and 20 students in the chemistry international class, which is around 5 % of the total number of students. IUP have only been established in 2018 and so the offer is quite new and the admission criteria (academic merits and English proficiency) are rather strict. In addition, the tuition fees are higher than for the regular classes. UNDIP is spreading the information in high schools but the response is not as high as it could be and UNDIP is trying to attract more students for the international classes.

Since UNDIP 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 courses in the regular classes are taught in English. The programme coordinators explain that usually all courses in the regular classes are delivered in Bahasa Indonesia (Indonesian language) but most of the teaching materials (teaching slides) are provided in English. The students confirm that some presentations are done in English, and English textbooks are used. However, students should be encouraged to actively speaking English. This could be achieved e.g. by discussing international papers or giving oral presentations in English. Moreover, the peers suggest opening some of the lectures offered in IUP

also for students of the regular classes so that they may further improve their English proficiency.

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 with a time schedule for the project, which is discussed with the academic advisor. If they agree, the students apply formally for being allowed to work on the suggested topic.

The peers learn during the audit that students can acquire soft skills by joining one of the many student organisations. They offer workshops for students to develop and improve their soft skills (e.g. communication and presentation skills). In addition, students participate in international competitions and Model United Nations, where students simulate the work of the United Nations.

The peers gain the impression that the graduates of both degree programmes under review 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 7 %) continue with a Master's degree either at UNDIP or at other universities. In general, all graduates have good and manyfold job perspectives.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Decree of Minister of Research, Technology and Higher Education No. 2, 2015
- Homepage UNDIP:https://www.undip.ac.id/
- Homepage Faculty of Science and Mathematics: https://fsm.undip.ac.id/v3/en/home/
- 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 Regulation No.2, 2015. The requirements, schedule, registration venue, and selection test are announced on UNDIP'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 UNDIP:

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 (20 % of the students at UNDIP are admitted through this selection system).

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 written test (subjects: mathematics, Bahasa Indonesia, English, physics, chemistry, biology, economics, history, sociology, and geography). It accounts for 30 % of the admitted students at UNDIP.

3. Independent Selection (Seleksi Mandiri) students are selected based on a written test (similar to SBMPTN) specifically held by UNDIP for prospective students that haven not been accepted through SNMPTN or SBMPTN (50 % of the students at UNDIP are admitted through this test).

In addition, there is a special selection procedure for the international classes, which is based on academic merits and English proficiency.

The average capacity is 170 new students per year in both programmes and depends on the number of teachers in the different departments and the available facilities (laboratory working places).

The number of applicants exceeds by far the number of available places. From 2018 to 2021, there were between 1324 (in 2020) and 2758 (in 2018) persons applying for admission to the Biology programme per year and only between 150 and 235 new students were accepted. This is equivalent to an average admission rate of 8 %. The numbers in the Chemistry programme are similar. From 2018 to 2021, there were between 1134 (in 2020) and 2484 (in 2018) persons applying for admission per year and around 165 new students were accepted. This is equivalent to an average admission rate of 10 %.

There are eight different levels of tuition fees for undergraduate students at UNDIP. They range from IDR 500,000 (€ 30) to IDR 8,500,000 (€ 518) per semester. Which level of tuition fees the students have to pay, depends on the economic background of their parents. As UNDIP explains, students in the international classes have to pay higher tuition fees.

Several undergraduate students at UNDIP are fully funded by the government including their daily expenditures. A tuition waiver scheme is available upon request and the amount depends on the parents' economic status. The amount of waiver ranges from 20 to 100 % of the total fee. Approximately 10 % of the international students receive scholarships, which are either funded by UNDIP or other public or private institutions. Several students confirm during the discussion with the peers that they receive a scholarship either from the

government and other public institutions or from private companies. Usually, student have to achieve and keep a certain GPA (e.g. above 3.0 or 3.5) to receive financial support, otherwise there are no strings attached to the scholarships.

The peers inquire of the programme coordinators why there are so many students applying for studying at UNDIP. They learn that biology and chemistry are popular subjects because the job perspectives are very good. In addition, there are many high school graduates in Indonesia and UNDIP is one of the most prestigious universities in Indonesia. Consequently, UNDIP only accepts the very best candidates. 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 both undergraduate programmes under review.

In summary, the peers 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:

The peers understand that the curricula and the learning outcomes are regularly updated every 5 years and that different stakeholders (industry partners, alumni, students and lecturers) are involved in the process. However, they point out that new developments occur every year and that there should be a continuous process for adapting the curricula and the learning outcomes to the latest technological developments.

The peers thank UNDIP for explaining that the Community Service is usually carried out during the semester break between the sixth and seventh semester when classes and exams have been completed.

The peers appreciate that UNDIP tries to attract international students by providing scholarships through the Diponegoro Exchange Experience Program (DEEP). In addition, the international class (IUP) is promoted by to spreading information to schools and via social media.

The peers consider criterion 1 to be mostly fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Academic Regulations
- Webpage Ba Biology: https://bio.fsm.undip.ac.id/v1/en/home/
- Webpage Ba Chemistry: http://kimia.fsm.undip.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The curriculum of both Bachelor's degree programmes under review are designed for eight semesters. Nevertheless, it also possible for excellent students to complete the degree in only seven semesters. Students cannot cover more than 24 SKS per semester. The students' individual study plans might differ from each other but have to be approved by their academic advisors and the Vice Dean of Academic and Student Affairs. The curricula include theoretical and practical courses, thesis proposal and thesis, community service, and electives.

Elective courses can be chosen by the students in accordance with their areas of interest and after consultation with their academic advisor. The courses in the first two semesters of the Bachelor's programmes convey basic knowledge of natural sciences, mathematics and languages (Indonesian and English). Courses on the different sciences are offered from the third to the sixth semester. During the seventh and eighth semester, students must complete the Community Service and the undergraduate thesis.

Students may take elective courses in their second year for the chemistry programme (the 3rd semester) and in their third year for the biology programme (the 5th semester).

Regular students take 18 credits in every semester, while outstanding students may take up to 24 credits. Therefore, outstanding students are enabled to complete the Bachelor's degree in less than 4 years. However, this case is rare since the workload of the undergraduate programmes is rather high anyway and designed for a four-year study programme.

The curriculum of the biology programme encompasses 144 credits and is divided into 5 areas:

1. 16 SKS of University Compulsory Courses
2. 60 SKS of Biological Science Courses
3. 20 SKS of Compulsory Courses for Megabiodiversity
4. 30 SKS of Compulsory Courses for Biology Undergraduate Program (including Practical Work and Final Project)
5. 18 SKS of Elective Courses

The term “Megabiodiversity” refers to areas that harbour the majority of Earth's species and plants. Indonesia as a tropical country, with many islands has a unique diversity of habitats and is the home to several endemic species of plants and animals. The following courses belong to this focus area: Introduction of Biodiversity, Introduction of Bio conservation, Animal Biodiversity, Plant Biodiversity, Taxonomy, Protist Biology, Marine Biology, and Mycology. In addition, students learn about international regulations such as Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity.

The peers see that the focus of biology programmes seems to be on “environmental impact assessment” and “biodiversity” rather than on general biology. In general, the peers think that this focus is suitable for a biology programme in Indonesia, but UNDIP should also introduce students to modern biology subjects such as genomics, proteomics, or metagenomics to work on the previous mentioned focus areas with state-of-the-art methods. These subjects are essential for characterising and analysing biological molecules and for understanding the structure, function, and dynamics of organisms and populations.

The chemistry programme has a curriculum with 144 SKS consisting of 122 SKS of compulsory subjects and 22 SKS of electives. There are 56 compulsory courses and 11 elective courses.

With respect to practical laboratory work, the peers learn during the audit that students of both degree programmes under review usually do the experiments together in groups of four to six students (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.

In general, the peers point out that UNDIP should regularly adapt the intended learning outcomes and the curriculum to technological advancements and current developments in

chemistry and biology, in order to prepare graduates even better for the requirements of the job market.

During the discussion with the peers, the employers and UNDIP's partner from the industry and from governmental institutions suggest to invite more experts from the industry to give classes and provide insights on current developments in the respective scientific area. Moreover, they stress that it would be useful to prolong the duration of the internship (work practise). An internship of four weeks is considered too short; employers would like students to spend more time in the companies. Finally, they suggest offering more project-oriented teaching in the courses. Otherwise, UNDIP's partners are very satisfied with the qualification profile of the graduates of all three programmes under review.

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 respective degree programme can be achieved.

International Mobility

UNDIP provides opportunities for students to conduct internships and exchange programmes abroad. The International Office of UNDIP (DIO) was established in 2009 and is responsible for establishing international collaborations, assisting international students, and supporting UNDIP's internationalisation. 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 UNDIP, although this transfer of credits is only possible if an agreement exists between UNDIP 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.

UNDIP wants to further promote the internationalisation and the current strategic plan of UNDIP aims at strengthening the international and employer reputation by increasing the number of international students and offering more summer schools especially for attracting international students and guest lecturers.

UNDIP has established international cooperations with several different universities and institutes. However, the students' academic mobility in the biology and chemistry programmes is still low. As described in the Self-Assessment Report, in 2018, one student and in 2020 two students participated in a research collaboration with Universiti Teknologi Malaysia. In addition, there are only a few international students. In 2018, 4 students from Universiti Sabah Malaysia studied for one semester in the Chemistry Department, while in 2019, there was one student from Myanmar.

The numbers are a little higher in the biology programme. In 2018, four undergraduate biology students participated in research collaboration with the National Center for Genetic Engineering and Biotechnology (BIOTEC) in Thailand. In 2019, one student studied at Universiti Teknologi Malaysia and three students did some research activities at BIOTEC and in 2021, three students took part in a student exchange programme with the University of Padua, Italy and Daugavpils University, Latvia.

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 take outside their Bachelor's programme for up to three semesters (Minister of Education and Culture Regulation Number 3 Year 2020). UNDIP recognizes the courses taken by the students outside university based on the comparability of the intended learning outcomes. The peers consider this regulation sufficient. However, according to the opinion of the peer group, the academic mobility of the students should be further promoted. The number of Bachelor's students who participate in international exchange programmes is still low despite students' high interest. National scholarships are available, but it is highly competitive so only a few students receive them.

The students confirm during the discussion with the peers that some opportunities for international academic mobility exist. However, they also point out that they wish for more places and better endowed scholarships for long and short-term stays abroad. The number of available places in the exchange programmes is still limited and there are restrictions due to a lack of sufficient financial support. UNDIP can provide only limited travel grants, while the demand from students is rising. The lack of financial support hinders students from joining the outgoing programmes.

The peers understand these problems; however, they recommend increasing the effort to further internationalising UNDIP by establishing more international co-operations and exchange programmes and by offering more and better-endowed scholarships. In addition, the peers see that most of the faculty members have international contacts, which can be used for establishing more international co-operations. 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 both Faculties and the respective Departments to further pursuing this path.

Criterion 2.2 Work load and credits

Evidence:

- Self-Assessment Reports
- Study plans of the degree programmes
- Module descriptions
- Academic Handbooks
- Discussions during the audit

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

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

- 50 minutes of scheduled contact with the teaching staff in learning activities,
- 60 minutes of structured activities related to lectures, such as doing the assignments, writing papers, or literature study,
- 60 minutes of independent activities outside the classroom to obtain a better understanding of the subject matters and to prepare academic assignments such as reading references.

For lab work, final project, fieldwork, and other similar activities, one SKS is equivalent to 3 to 5 hours a week of student's activities.

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

The peers point out that there can be no fixed conversion rate between SKS 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. In addition, UNDIP needs to define, how many hours of students' total workload are needed for awarding one ECTS point. In the Self-Assessment Report, UNDIP calculates with 25 hours per ECTS point, but this regulation needs to be made transparent, so that external stakeholders are informed about the actual workload of the single courses and the whole degree programmes.

Since the workload of the students was only estimated by the programme coordinators, the peers expect UNDIP to re-evaluate the calculation of ECTS points and to ask the students about their actual workload, especially the time they need for self-studies, for each

course. This could e.g. be done by including a respective question in the course questionnaires. By correctly displaying students' workload in ECTS points, UNDIP would facilitate academic mobility and better support their graduates if they apply for international programmes.

In any case, UNDIP needs to verify the students' total workload and make sure that the actual workload and the awarded ECTS credits correspond with each other. This information should be made transparent in the module descriptions and the study plans. The students' total workload (including the time needed for self-studies) needs to be determined and verified for each course separately. UNDIP should follow the procedure as described in the ECTS Users' Guide.

During the audit, the students confirm that their workload is adequate and that it is possible to finish the degree programme within the expected four years.

Criterion 2.3 Teaching methodology

Evidence:

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

Preliminary assessment and analysis of the peers:

Various teaching and learning methods (including lectures, computer training, classroom and lab exercises, field trips, individual and group assignments, seminars and projects, etc.) have been implemented. Structured activities include tutorials, homework, assignments (reading or problem exercises) and practical activities. Group project assignments are given in some courses to develop students' skills in teamwork, communication, and leadership. The assignments and exercises should help students to develop their abilities with respect to critical thinking, written/oral communication, data acquisition, problem solving, and presentations.

UNDIP has the goal to support the transition from a teacher-centred to a student-oriented and outcome-based education (OBE) in order to involve all students in the learning process and to develop their thinking and analytical skills. The peers learn during the audit, that there is room for improvement in this area. For this reason, they recommend involving

students more in the lectures and introducing more student-centred teaching, e.g. by offering more project-based or team-oriented forms of teaching and learning. In addition, it would be possible to involve UNDIP's partners from the industry in designing the projects.

The most common method of learning is class session, with several courses having integrated laboratory practices. Lecturers generally prepare presentations to aid 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 become acquainted with academic research methods.

To help students achieving the intended learning outcomes and to facilitate adequate learning and teaching methods, UNDIP offers a digital platform and an academic information system (SIAP).

In addition, distance learning is applied via virtual meetings (MS Teams, Zoom, etc.) and through a MOODLE based Learning Management System (KULON UNDIP), which is designed to manage learning content (lesson plans, teaching materials, learning videos, etc.) and learning activities other than virtual meetings (exams, quizzes, assignments, discussion forums, grading, etc.).

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 of both undergraduate programmes comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format.

Criterion 2.4 Support and assistance

Evidence:

- Self-Assessment Reports
- Academic Regulations
- Discussions during the audit

Preliminary assessment and analysis of the peers:
UNDIP 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 his classes. He/she is a 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. The students confirm during the discussion with the peers that they all have an academic advisor.

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 have one or more supervisors, who are selected based on the topic of the final project. One supervisor could be an external supervisor, if the student performs the research outside UNDIP. The role of the final project supervisor is to guide students in accomplishing their final project, e.g. to finish their research and complete the final project report.

Finally, there are several student organizations at UNDIP; 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. The comprehensive tutorial and support system at UNDIP is one of the strengths of the degree programmes.

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

The peers appreciate that UNDIP is planning to reduce the group size in the laboratory sessions by providing more instruments and dividing the classes. Verification of this plan should be provided in the further course of the procedure.

The peers thank UNDIP for explaining that biology students can prolong the internship to a maximum of 6 months for which 20 SKS are awarded. The peers suggest promoting this opportunity more actively.

The peers note that students' academic mobility was handicapped by the Covid pandemic and it is pleasing that there was already an increase in mobility in 2021/2022 and even more students are expected to spend some time abroad in the next year.

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
- Academic Regulations

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, the students' academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, presentations, mid-term exam, and the final exam at the end of each semester. The form and length of each exam is mentioned in the module descriptions that are available to the students via UNDIP's homepage and the digital platform SIAD.

The most common type of evaluation used are written examinations; however, quizzes, laboratory work, assignments (small projects, reports, etc.), presentations, seminars, and discussions may contribute to the final grade. Written examinations, either closed-book or open-book, typically include short answers, essays, problem-solving or case-based questions, and calculation problems. Some lecturers also give multiple choice or true-false questions in examinations or quizzes. The grade from laboratory work usually consists of laboratory skills, discussions, reports, and oral exams. Students are informed about mid-term and final exams via UNDIP's homepage. The final grade is the result of the different activities in the course (e.g. laboratory work, mid-term exam, the final exam, quizzes or other given assignments).

Students can repeat a failed exam once, if they fail again, they have to retake the class in the next semester. In addition, lecturers need to arrange examinations for students who have not taken the examinations due to valid reasons. Some courses allow students, whose

grades are still below the passing level, to improve their grades by repeating an exam (remedial). The students are satisfied with this policy, but the peers point out that this process should be made transparent in the academic regulations.

After the exam, teachers upload the students' grades to the academic information system (SIAP) of Diponegoro University. If students are not satisfied, they can ask for a clarification from the teacher and can appeal their grades. The details of the procedure are described in the academic regulations.

The peers discuss with the students about their exam load and the exam organisation. They learn that for each course there is one mid-term exam and one final exam in every semester. Usually, there are additional practical assignments or quizzes. The final grade is the sum of the sub-exams. The students confirm that they are well informed about the examination schedule, the examination form, and the rules for grading and that the exam load is appropriate.

Every student in both undergraduate programmes under review is required to do a final project (Bachelor's thesis). This project is conducted independently under the guidance of one or more supervisors and usually consists of literature study, practical research, and data analysis. Both the student and his/her supervisors might decide the topic and content of the project. The teachers 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 with a time schedule for the project, which is discussed with the academic advisor. If they agree, the students apply formally for being allowed to work on the suggested topic. Moreover, students can develop their own ideas for their final project and design the proposal accordingly.

In the chemistry programme, the final project is divided into two parts, namely Research Project 1 (seventh semester) and Research Project 2 (eighth semester). The Research Project 1 consists of literature studies about the possible research project and the preparation of a research plan to be carried out in the Research Project 2. The report about the final project is then presented in front of a group of examiners in a seminar format. The examiners consist of the respective supervisors and at least two other lecturers from the faculty (or assigned institutions). It is also possible to conduct an external final project e.g. in cooperation with a company. In this case, one co-supervisor comes from the respective host institution. In the biology programme, the final project is conducted only in the eighth semester and it is not divided into two parts. The students need to publish the results of their Bachelor's thesis in a recognised in local or national scientific journal.

The grading for the final project (Bachelor's thesis) is done differently in both programmes. In the biology programme, the proposal seminar and the project result seminar each contribute 20% to the final grade, while the final report has a weight of 60%. In the chemistry programme, the oral defence contributes 70 % and the final report 30% to the grade (Research Project 2). The peers point out that this information needs to be made transparent in the respective module description.

The peers also inspect a sample of examination papers and Bachelor's theses and are overall satisfied with the general quality of the samples.

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

The peers confirm that UNDIP has updated the module descriptions for the final project. They now make transparent how the proposal seminar, the oral defense, and the written report contribute to the final grade.

The peers consider criterion 3 to be fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

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

Preliminary assessment and analysis of the peers:

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

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.

According to the Self-Assessment Report, the teaching staff at the Biology Department consists of 46 fulltime teachers (4 professors, 16 associate professors, 19 senior lecturers, and 7 lecturers). Most of the teachers hold a PhD degree. 13 non-academic staff members (laboratory technicians, administrative staff, finance, and librarians) support the teachers.

At the Chemistry Department, there are 34 fulltime teachers (3 professors, 14 associate professors, 16 assistant professors, and 1 lecturer. Most of the teachers hold a PhD degree, 5 academic staff members currently pursue a doctoral degree. The teachers are supported by 14 non-academic staff members (laboratory technicians, administrative staff, finance, and librarians).

In the Bachelor's degree programme Chemistry, there are currently (2021) 35 teachers and 765 active students. Therefore, the teacher-to-student ratio is 1:22.5. In the Bachelor's degree programme Biology, there are currently (2021) 45 teachers and 765 active students. This results in a teacher-to-student ratio of 1: 19.

The peers positively notice that in both degree programmes several guest lecturers from renowned international universities are invited to give classes and act as keynote speakers in seminars. The purpose of inviting domestic and foreign guest lecturers is to provide students with a different learning experience, and to improve standards of lectures at UNDIP.

The peers discuss with UNDIP's management how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UNDIP's management, which subsequently announces the vacancies on the university's webpage. One way to recruit new teachers is to send promising Master's students from UNDIP abroad to complete their PhD and then to hire them as teachers when they are finished. Besides this general recruitment, there is a "special recruitment" at UNDIP for teachers with expertise in a specialised area that is needed at UNDIP.

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

The peers are impressed by the excellent and open-minded atmosphere among the students and the staff members. This atmosphere of understanding and support is one of the strong points of the degree programmes.

Criterion 4.2 Staff development

Evidence:

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

Preliminary assessment and analysis of the peers:

UNDIP encourages training of its academic and technical staff for improving the didactic abilities and teaching methods. As described in the Self-Assessment Reports, faculty members and non-academic staff regularly participate in training or workshops.

To this end, UNDIP has established several programmes to support staff development. New staff members are required to undertake an intensive basic training programme called Pre-Service or Pra-Jabatan. Following Pra-Jabatan, lecturers are required to undertake Training for the Development of Basic Skills in Instructional Techniques (PEKERTI) and Applied Approach (AA) to develop teaching and management skills. In addition, lecturers are required to take a lecturer certification and obtain an educator certificate (SERDOS) that shows their recognition as a professional staff. In addition, lecturers are mentored by their seniors to develop their expertise and to advance their career.

Faculty members can also further develop their competencies through several activities such as post-doctoral programmes, training, workshops, joint research, etc. Moreover, they are encouraged to present their research papers in national and international conferences, and to collaborate with colleagues from international universities.

Teacher development programmes, especially in the field of learning and teaching methods, are coordinated by the UNDIP Education Quality Assurance and Development Institute. The institute is responsible for developing the teachers' didactical skills and for providing trainings in the form of mentoring lecturers, courses on e-learning, information technology, distance learning, and on preparing teaching materials.

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 UNDIP, 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, which is funded by UNDIP or the government.

In summary, the peers confirm that UNDIP 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 Reports
- Video of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Basic funding of the undergraduate programmes and the facilities is provided by UNDIP and the Faculty of Science and Mathematics. Additional funds for research activities can be provided by UNDIP or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them. In addition, there are several co-operations with industrial partners.

The financial means for both programmes can be divided into a state revenue budget (APBN) and non-state revenue budget (non-APBN). APBN funds are provided by the Indonesian Ministry of Education and Research, they constitute between 30 and 35 % of the total budget and cover the employee salaries. Non-APBN funds come from UNDIP, the largest share derives from tuition fees and additional funds are generated from co-operations with companies and business activities. These funds are used for covering the operational costs of the degree programmes and for non-permanent employees. The provided budget allows the departments to conduct the study programmes as well as some specific activities, including student exchange programmes, student financial assistance for research, and participation in international conferences.

The programme coordinators emphasise that from their point of view, both undergraduate programmes receive sufficient funding for teaching and learning activities. Hence, the Departments do not face any financial shortages. Of course, there is limited funding to modernize or add laboratory equipment, but there are sufficient resources for adequately teaching the classes.

From the provided documents and videos of the laboratories, the peers deduct that there seem to be no severe bottlenecks due to missing equipment or a lacking infrastructure. The basic technical equipment for teaching the students is available, although it is not state of the art, especially in the teaching laboratories. On the other hand, the research labs are well equipped with modern instruments. The students confirm during the discussion with the peers that, in general, they are satisfied with the available equipment, but several instruments are outdated. 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. Each laboratory has a lab supervisor; in addition, there are several senior students, who work as lab assistants.

Nevertheless, it is difficult for the peers to assess the extent of the safety measures based on the videos and the discussions alone. Only some laboratories are shown in the videos and especially the scope and design of the safety standards remain unclear (material and surface quality of the working benches, safety goggles, gloves, eye showers, fire extinguishers, emergency exits, chemical-proof cabinets, first-aid kits, fume hoods, waste management, and ventilation system). For this reason, the peers point out that it is necessary to verify that the safety measures are strictly followed in the labs by all persons and to explain in detail, what safety measures are in place. The peers understand that students receive safety instructions at the beginning of every laboratory class, but it is also necessary that all persons follow these instructions.

Moreover, the peers emphasise that all students need to have the opportunity to get hands on experience with chemicals and carrying out laboratory experiments. For this reason, the number of students conducting one experiment should be reduced. In order to gain sufficient practical experience in the laboratories, groups conducting one experiment should be limited to 2 to 3 students. In the basic teaching labs, the number of fume hoods should be sufficient for these small groups so that all students can get hands-on experience with conducting a synthesis with hazardous chemicals.

In addition, teachers and students can use the facilities of UNDIP's central laboratory. Here, more sophisticated instruments (e.g. Atomic Force Microscope, X-Ray Diffraction, Gas Chromatographer, Mass Spectrometer, and Laser Particle Size Analyser) are available and lab technicians are present to operate them. Teachers have to apply for using the facilities and are charged for the provided services. If some sophisticated instruments are not available at UNDIP for example in the area of molecular biology or genetics, the teachers use their international and national contacts and collaborations to receive support, e.g. by analysing samples for them.

The students also express their satisfaction with the library and the available literature there. They confirm having access to international literature and publications as well as to scientific databases such as ScienceDirect.

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 programmes.

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

The peers appreciate that UNDIP provides both degree programmes with a budget for purchasing new instruments and for updating the technical equipment in the laboratories. They support the plan to replace all outdated instruments within the next 5 years.

The peers thank UNDIP for explaining that standard laboratory safety rules are applied in all laboratories. For the biology laboratories, this includes safety goggles, gloves, eye showers, fire extinguishers, and hygiene and safety information to avoid accidents. Signs for hazardous materials and equipment and emergency exit route are also available. The laboratories are equipped with smoke detectors, evacuation routes, and emergency stairs. However, for the chemistry laboratories, it is not clear if e.g. proper eye showers, evacuation routes, and emergency stairs exist.

In addition, the peers strongly emphasise that UNDIP needs to make sure that the safety measures in the laboratories are followed strictly and that all laboratories are equipped with the necessary safety equipment, which allows students to work with hazardous substances.

The peers consider criterion 4 to be mostly fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Self-Assessment Reports
- Module descriptions
- Webpage Ba Biology: https://bio.fsm.undip.ac.id/v1/en/home/
- Webpage Ba Chemistry: http://kimia.fsm.undip.ac.id/

Preliminary assessment and analysis of the peers:

The students, as all other stakeholders, have access to the module descriptions via UNDIP's homepage.

After studying the module descriptions, the peers see that the module descriptions do not always make transparent, how each exam contributes to the final grade and what kind of exam is required (e.g. for the final project). The module description of the final project

must include the information about the composition of the final grade and how the different exams (report, presentation, and discussion) contribute to it. In addition, the calculation of the students' total workload and the conversion into ECTS points is not transparent and consistent. For example the course "Basic Biology I" has 125 hours of students' workload and 4.8 ECTS points are awarded. This should be 5 ECTS points. In the course "Biochemistry", the students' workload is 165 hours and 6.4 ECTS points are awarded. This should be 6.6 ECTS points, if 25 hours per ECTS point are calculated. Moreover, UNDIP needs to define in an official regulation how many hours of students' total workload are required for one ECTS point and make that information transparent. This issue is also discussed under criterion 2.2.

Finally, the peers point out that all module descriptions should include current literature references.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Reports
- Sample Diploma for each degree programme
- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the peers:

The peers confirm that the students of all degree programmes are awarded a Transcript of Records, a Diploma and a Diploma Supplement after graduation. The Diploma Supplement and the Transcript of Records contain almost all necessary information about the respective degree programme. However, some information should be added. The Transcript of Records should also list the acquired ECTS points of each course and how many ECTS points are awarded for whole degree programme. The Diploma Supplement should also include statistical data about the distribution of final grade according to the ECTS Users' Guide. This allows the reader to categorise the individual result.

Criterion 5.3 Relevant rules

Evidence:

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

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

The peers discuss with UNDIP about the admission of students with disabilities, particularly colour-blindness and deafness, as this is a known issue in Indonesia. The university stresses that it follows a general non-discrimination policy and that students with disabilities are eligible for admission into the programmes. The peers understand that applicants with colour-blindness and deaf are not admitted to the chemistry or biology programmes. They are aware that this is common practice at Indonesian universities, but are convinced that it is unnecessary. The peers emphasise that with modern tools and technology, colour-vision and deafness are no longer important abilities even in laboratories. Regarding the study programmes at hand, it is even less of an issue as the experiments are conducted in groups and the colour-blindness or deafness of one student can be easily compensated by the other group members. Hence, they consider such an admission criterion too restrictive and expect UNDIP to change it.

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

The peers confirm that UNDIP has updated the literature references in the module descriptions. With respect to the students' workload, the peers point out that the module descriptions should include the students' workload in hours per semester and not in minutes per week.

The peers see that UNDIP has updated the Transcript of Records, which now lists the acquired ECTS points of each course and how many ECTS points are awarded for whole degree programme. In addition, the Diploma Supplement now includes statistical data about the distribution of final grade.

The peers are glad that UNDIP will change the admission regulation for colour-blind and deaf persons so that they are no longer excluded from enrolling in the Biology and Chemistry programmes. The peers expect to submit the new regulation in the further course of the accreditation procedure.

The peers consider criterion 5 to be mostly fulfilled.

6. Quality management: quality assessment and development

Evidence:

- Self-Assessment Reports
- Academic Handbooks
- Discussions during the audit

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

This system relies on internal (SPMI) as well as external (SPME) quality assurance. SPMI encompasses all activities focused on implementing measures for improving the teaching and learning quality at UNDIP. SPME focuses on both national and international accreditations. National accreditation is conducted by the National Accreditation Board for Higher Education (BAN-PT), under the Ministry of Education and Culture, Republic of Indonesia. National accreditation of the programme within the university is a legal obligation for every study programme. Both programmes under review have received the highest accreditation status (A) from BAN-PT.

Internal evaluation of the quality of the degree programmes is mainly provided through student surveys. The students give their feedback on the courses by filling out the questionnaire online. Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on UNDIP's digital platform. The questionnaires are used to monitor and evaluate the learning processes and are distributed every semester to the lecturers before the final exam is done. A summary of the students' feedback is sent to the respective lecturers. Based on the results, the programme coordinator and the teachers reassess every course and possibly some changes are made. If there are negative results, the Department Head invites the concerned teacher to discuss about his or her teaching methods and thus, they are expected to enhance their performance in the future.

In addition, UNDIP has established the "Academic Dialogue", which is held once a year on department level. Students, Dean, Vice-Dean, Head of Department, programme coordinators, and teachers are all taking part in this forum. The goal of the forum is to discuss with all people involved in running the degree programme about weaknesses and possible measures for improvement. The peers appreciate this format and consider it to be very useful for getting direct feedback from students.

The peers gain the impression that the Departments take the students' feedback seriously and changes are made if necessary. Nevertheless, the peers see that the results of the course questionnaires are not discussed directly with the students. Consequently, the peers expect UNDIP to inform students about the results of the questionnaires and the teachers should discuss with them about possible improvements in the respective course. The feedback loops need to be closed.

Moreover, students confirm during the audit that they are not represented in the university's boards – with the exception of the Board of Trustees on university level - and, thus, 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 student representatives should be members of boards at UNDIP (at least on programme and faculty level) and be actively involved in the decision-making processes for further developing the degree programmes.

UNDIP regularly conducts an alumni tracer study. By taking part at this survey, alumni can comment on their educational experiences at UNDIP, the waiting period for employment after graduation, their professional career, and they can give suggestions how to improve the programme. Moreover, the employers are asked to give feedback to UNDIP on employability and acquired competencies of UNDIP's graduates. During the audit, the employers express their general satisfaction with the qualification profile. They just recommend inviting more guest lecturers from the industry to give lectures on current developments in the respective area, introducing more project-oriented teaching, and prolonging the internship (work practise). This is also discussed under criteria 2.1.

The peers discuss with the representatives of UNDIP's partners from schools, public institutions, and private companies if there are regular meetings with the partners on faculty or department level, where they discuss the needs and requirements of the employers and possible changes to the degree programmes. They learn that some employers and alumni are invited to give their feedback on the content of the degree programmes in the course of the tracer studies. The peers appreciate that UNDIP stays in contact with its alumni and has a close relation with its partners from the industry, schools, and public institutions. However, no academic advisory board exists. As the peers consider the input of the employers to be very important for the further improvement of the degree programmes, 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 each department. The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university (e.g. companies and governmental institutions). Including students, professionals, and employers in the different boards will help further developing the degree programmes.

In summary, the peer group confirms that the quality management system at UNDIP is, besides the mentioned deficits, suitable to identify weaknesses and to improve the degree programmes.

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

The peers understand that the summary of students' feedback is discussed by the Quality Assurance Team (GPM), which then reports to the Head of the Study Programme. The results of the internal discussions are presented to the students through an academic dialogue forum, where students can express their opinions for the improving the programmes in the future. However, the peers emphasise that it is necessary to directly informing students about the results of the questionnaires and the teachers should discuss with them about possible improvements in the respective course.

The peers thank UNDIP for explaining that at the faculty level, there are the Student Executive Board (BEM) and the student SENAT. They are directly involved in official agendas, such as dean selection, tuition fee policy, evaluation of teaching and learning process and facilities and infrastructure. However, it would be useful to make student representatives members of the boards at UNDIP at programme or department level and to directly involve them in the decision-making processes for further developing the degree programmes.

The peers consider criterion 6 to be mostly fulfilled.

D Additional Documents

Before preparing their final assessment, the panel ask 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 (26.04.2022)

UNDIP provides the following statement:

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
Criteria 1			
General feedback Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC) appreciates and is grateful for the reviews from peers as a whole regarding Criteria 1. In general, we fully agree with comments from peers. We are pleased that the peers are convinced that the intended qualification profiles allow graduates to take up an occupation, which corresponds to their qualification and meet the goals set for them. We are also glad that the peers founded that the objectives and intended learning outcomes are considered reasonable and well founded, so that it is concluded that the objectives and intended learning outcomes of the degree programs adequately reflect the intended level of academic qualification and correspond sufficiently with the respective ASIIN Subject-Specific-Criteria (SSC) of the Technical Committee 10 – Life Sciences and the SSC of the Technical Committee 09 – Chemistry, Pharmacy. However, BoB and BoC also highlighted several points that have been conveyed by peers who need clarification or further explanation. The peers expect the BoB and BoC to take action to regularly improve LO and curriculum to prepare graduates to suit market needs. LO is expected to contain soft skills including presentation and communication skills and be familiar with project-oriented based work and apply scientific work patterns. As some comments need to be addressed, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
	Criterion 1.1		
1	*Page 10 line 13* However, in general, the peers point out that UNDIP should regularly *adapt the intended learning outcomes and the curriculum to technological advancements and current developments in chemistry and*	**BoB.** BoB has carried out curriculum improvements regularly as recommended by peers. Internal Discussion of academic Lecture and staff has been carried out on this issue based on peers' advice. Improvement of Curriculum and Learning Outcome (LO) is regularly conducted every	● BoB's graduates are also expected to have soft skills such as in presentation and communication (Part B, generic skill number 2), project orientation and scientific practices (part C, Specific skill number 6), and have been im-

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	biology, in order to prepare graduates even better for the requirements of the job market. In addition, the intended learning outcomes should include that student should acquire soft skills such as presentation and communication skills as well as be familiarized with *project-oriented work and good scientific practice*.	5 years. The last version was done in 2020. It involves users, industry partners, alumni, students and lecturers. Curriculum improvement and LO always refers to the latest technological development. As part of this commitment, new courses that are relevant to current technological advances are raised, including: "Internet of thing," "Bioinformatics", "Bioprospect in Biodiversity", "Bio-preneurship". It is expected that graduates are able to meet market needs or be able to create their own jobs. The LO will be revised again before 2025.	plemented in the teaching and learning process, as shown in the Lesson plan / RPS). (Part D, Knowledge number 3). Link: (https://bio.fsm.undip.ac.id/v1/en/vision-and-mission-of-biology-program/learning-outcomes/) ● Physical evidence: LO links (https://bio.fsm.undip.ac.id/v1/en/vision-and-mission-of-biology-program/learning-outcomes/) , examples of project-oriented work, examples of student scientific publications). Student publications demonstrate project-oriented skills and a scientific mindset. Presentation skills are proven by routine assignments per course. Communication skills are demonstrated by the existence of a "scientific communication" course and also the results of scientific publications in journals. (https://bio.fsm.undip.ac.id/v1/en/vision-and-mission-of-biology-program/learning-outcomes/) Other evidence as student publications

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
			in English: (https://doi.org/10.15294/biosaintifika.v14i1.29828)
		Project oriented work has been carried out in several courses by giving assignments to write a project simulation. Project oriented assignments can be given through lectures or practicum assignments.	Evidence of Project oriented work : (*https://drive.google.com/drive/folders/1pCSAW6kCY-OVfJAE9CiS-cbhcbtiw6G5E4?usp=sharing*) Other physical evidence: final report of student PKM-P : (https://drive.google.com/drive/folders/16_cA8TGdgQ4iFnb3qvOJkCxcgXX_w9gj?usp=sharing)
		As stated in Semester Course Plan (RPS), good scientific practice has also been implemented in compiling final project reports, scientific publications, problem base learning (in RPS) and Program of Students Creativity for research (PKMP) competitions.	Physical evidence : - TA reports : (https://drive.google.com/drive/folders/1hi-iEMcVx_-9FTeYFleS2nZOfiBON-CUl?usp=sharing) - Scientific publications : (https://doi.org/10.15294/biosaintifika.v14i1.29828) - winners of national and international competitions. (https://bio.fsm.undip.ac.id/v1/en/student-achievement/)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		BoC. Every five years, we review the Bachelor of Chemistry curriculum. We have and will implement peer feedback to adapt the curriculum to the latest developments in chemical science and technology. What can be done immediately is to update the learning content by providing the frontiers of the development of chemical science and technology. Bachelor of Chemistry (BoC) will involve more experts from industries and research institutions to get the insights and to adapt the intended learning outcomes and the curriculum to technological advancements and current development in chemistry. An example was the feedback from Mr. Maruap Siahaan (CEO of PT. St. Morita Industries) who proposed an extension of the fieldwork time which we responded to by changing the workload of the fieldwork course from 1 credit to 2 credits. Presentation, communication skills as well as project-oriented work have been implemented in the assignment, task, and presentation session on	We have discussed with the Faculty and the Faculty has provided a decree regarding the advisory board to adapt the curriculum to technological advancements and current developments. (http://tiny.cc/Dean_Decree_Partner_Forum) Some of soft skills such as presentation and communication skills from learning outcomes are proven by the achievements of chemistry students in international competitions (https://kimia.fsm.undip.ac.id/2021/05/achievements-of-chemistry-students-fsm-undip/) We are also trying to make a student's research project become a publication to improve research and writing skills, one of the examples of student research project published on sciencedirect https://www.sciencedirect.com/science/article/pii/S1386142518302415

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		several courses and practicums	
	Criterion 1.3		
2	*Page 12 line 6* Since the community service usually takes place in remote areas, the students cannot attend any classes during this time	**BoC.** Based on the guidelines of the Community Service (CS) issued by the University, the CS should not be taken in the semester which students still taking any classroom-based module. CS is usually carried out during the semester break where class learning, and exams have been completed. This Community Service (CS) course is placed in the 6th semester with a workload of 3 credits. In its implementation, it is carried out in semester breaks between semesters 6 and 7.	The link of Semester Learning Plan of CS: https://kimia.fsm.undip.ac.id/real-work-lecture-kkn/
	Criterion 1.3		
3	*Page 12 line 24* IUP have only been established in 2018 and so the offer is quite new and the admission criteria (academic merits and English proficiency) are rather strict. In addition, the tuition fees are higher than for the regular classes. UNDIP is spreading the information in high schools but the response is not as high as it could be and UNDIP is trying to attract	**BoC.** In an effort to attract students to the International Undergraduate Program (IUP), the Bachelor of Chemistry does several things, one of which is providing subsidies for international exposure activities. We will continue to strive to increase IUP program registrants by providing interesting information and showing the advantages of IUP to schools, and social media.	To attract international students, UNDIP provides scholarships. UNDIP provides the Diponegoro Exchange Experience Program (DEEP). The official information about DEEP can be accessed on: https://io.undip.ac.id/deep-2/

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	more students for the international classes.		
	Criterion 1.3		
4	*Page 12 line 34* The students confirm that some presentations are done in English, and English textbooks are used. However, students should be encouraged to actively speaking English. This could be achieved e.g. by discussing international papers or giving oral presentations in English. Moreover, the peers suggest opening some of the lectures offered in IUP also for students of the regular classes so that they may further improve their English proficiency.	**BoC.** Thank you for the feedback provided. What is currently being implemented is the Test of English as a Foreign Language (TOEFL) training for students. We apply a minimum standard for TOEFL scores as a graduation requirement. We try to encourage students to conduct seminar presentations in English. We will encourage lecturers to present lectures in English in regular classes. In addition, we encourage assignments and presentations to be presented in English in regular classes.	Undip also facilitates and provides English language training and TOEFL tests to improve the English language skills of students: https://seu.apps.undip.ac.id/about
Criteria 2			
General feedback Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC) appreciates and is grateful for the reviews from peers regarding Criteria 2. In general, we fully agree with comments from peers. In the degree program section, we are pleased that the peers have impressed the choice of modules and the structure of the curriculum to ensure the achievement of the intended learning outcomes of the respective degree program. On the international mobility program, peers appreciate the effort to foster international mobility and support both Faculties and the respective Departments to further pursue this path. On the student workload and credits, peers noticed during the audit that the students confirm that their workload is adequate and that it is possible to finish the degree program within the expected four years. Furthermore, on the teaching method, peers have considered the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes.			

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
Finally, peers also highlighted during interviews with representative students, the good and trustful relationship between the students and the teaching staff and there are enough resources available to provide individual assistance, advice, and support for all students. However, BoB and BoC also highlighted several points that have been conveyed by peers who need clarification or further explanation. As some comments need to be addressed, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
	Criterion 2.1		
5	*Page 17 line 19* With respect to practical laboratory work, the peers learn during the audit that students of both degree programs under review usually do the experiments together in groups of four to six students (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.	**BoB.** Regarding the practicum model which is divided into several groups, BoB has considerations based on the availability of tools and also the number of practitioners so that currently what can be done is to divide the groups of practitioners consisting of 4-6 people per group. In line with the several new equipment provided this year, (including binocular and stereo microscopes, water and sediment samplers, spectrophotometer, Shaking Incubator, laminar air flow, Automatic fraction collector, Ultrasonic Homogenizer Sonicator Cell Disruptor Mixer), a reduction of the number of students in the group at the time of practicum to be 2-3 students is very possible to be implemented. It also has been done in several classes this year. **BOC.** Thank you for the feedback from peers. Peers' suggestions are cor-	● Along with efforts to increase the availability of tools/laboratory equipment, in the near future the practicum groups will be reduced to 2 - 3 people per group according to peers' advice. In practice, each student in each group worked on all stages of the experiment. Student mastery of practicum material is proven through personal evaluation and guided by a practicum assistant. ● Photos of the implementation of the practicum with the number of students in groups of 2 to 3 persons.

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		rect, and we are committed to improving the quality of the practicum so that the student learning experience increases. We are committed to increasing the number of basic equipment and consumables so that students can work in smaller groups of 2-3 people per group. In this semester, we have started to divide the practicum class into 25 people with 8 practicum subjects, which means that on average one group has 3 people	
6	*Page 17 line 29* During the discussion with the peers, the employers and UNDIP's partner from the industry and from governmental institutions suggest to invite more experts from the industry to give classes and provide insights on current developments in the respective scientific area.	**BOC.** The response to this inquiry is the same as No. 1	
7	*Page 17 line 29* During the discussion with the peers, the employers and UNDIP's partner from the industry and from governmental institutions suggest to invite more experts from the industry to give classes and provide	**BOB.** BoB will increase academic activities that involve industry to become part of the learning process which will be carried out on a regular basis. Invitation of experts from users and industry partners has already been scheduled. As the evidence of this activity can be	BoB activity leaflets/brochures presenting experts Online Studium Generale "Information Technology Based Innovations in Biological Science" (https://bio.fsm.undip.ac.id/v1/2021/03/03/online-studium-generale/) 1. Diskusi Ilmiah Online (Seri 1) "Strategi Riset

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	insights on current developments in the respective scientific area.	shown in the following leaflet / fliers.	Berbasis Data Sekunder Di Masa Pandemi Covid -19" https://drive.google.com/file/d/1yD4458ALqsBH7f3U3LjLQ87BB7Lwa4z_/view?usp=sharing 2. Diskusi Ilmiah Online Seri 2 "Bioprospeksi dan Bioekonomi Keanekaragaman Hayati Indonesia" : (https://drive.google.com/file/d/1rHqZYJBiT6BMYeoiORjZ-GaefNyHDn-BAn/view?usp=sharing) 3. Diskusi Ilmiah Online Seri 3 "Strategi Bisnis Online" : (https://drive.google.com/file/d/1-GAMPj0x_Q_FG3CwHfv-7H5ojqi38LV-/view?usp=sharing) 4. Sharing Experience "Peran Biologi Dalam Analisis Dampak Lingkungan" (https://drive.google.com/file/d/1JgTlCjEBOkKli2Iht-WfMh8WV9mrIBQT1/view?usp=sharing) 5. Kuliah Umum "Marine Biology and Perspective" :

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
			(https://drive.google.com/file/d/157UHvQQjp3z3TUH4RQD-v_sHe0gbIWvw/view?usp=sharing) 6. Lecturer Series 1 "Biomonitoring" (https://drive.google.com/file/d/15REe7z8sUDRT-wMrBI384Y8Kg_s0r3GGf/view?usp=sharing) Some photos of students' activities in the internship program (MF-Kedaireka) 2021, involving PT Rekayasa Agromarin Indonesia as an industrial partner in the application of productive sustainable aquaculture and biomonitoring.
8	*Page 17 line 32* Moreover, they stress that it would be useful to prolong the duration of the internship (work practise). An internship of four weeks is considered too short; employers would like students to spend more time in the companies	**BoB.** Regarding input from Peers regarding the duration of the internship, it is necessary to explain that what is meant by internship refers to Work Practice/ Practical Work. This practical work has a credit value of 2 credits and is carried out by studying in the field of industrial practice relevant to the biological field for 2 weeks. BoB provides a proportion of 2 credits for internship	● The extension time of the work practice will be followed by the calculation of the number of hours which will have an impact on the proportion of credits. ● This change in proportion will be discussed at a formal curriculum revision meeting involving stakeholders and KOBI (Indonesian Biology Consortium).

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		(work practice) which is equivalent to 2 weeks of implementation. However, BoB gives students the opportunity to carry out these activities for more than 2 weeks, but not exceeding 1 semester (6 months). The assessment components at the work practice stages may include determining topics and titles with supervisors, making proposals, implementing work practices, activity reports and presentations of activity results. In the 2020 curriculum, it stipulates that internship activities can be carried out for a longer time, and credit conversions are given according to the number of hours of activity that have been carried out by students during the internship. The maximum time for the internship is 6 months with a conversion of 20 credits. This is in accordance with the rules in the independent curriculum (MBKM). BOC. The BoC has actually increased the workload in the field work course from 1 SKS in the previous curriculum to 2 SKS in the current curriculum. We believe that this workload is adequate because	Physical evidence: ● Conversion rules in MBKM, rector's decree in MBKM. Regulation of the Rector of Diponegoro University : (https://drive.google.com/file/d/1AZxuQnaZCg3pIUFYl-mmGYzq98klRWk1l/view) ● Technical Guidebook for MBKM implementation at Undip : (https://drive.google.com/file/d/1T9PpKjVENuuIVjIu5DwwMhRoqW1p64q_/view) ● Guide to converting MBKM courses at FSM Undip : (https://drive.google.com/file/d/17vqx7ep5SbQphKH3mMz3QrxFeeXWXnrb/view)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		generally field work is carried out during semester breaks which range from 4 to 6 weeks. The extension of the duration will result in the change of the given credits. For this issue, BoC will discuss it in the next revision of curriculum meeting and involve stakeholders and Himpunan Kimia Indonesia (HKI, Indonesia Chemical Society) to obtain more insight.	
9	*Page 18 line 21* UNDIP has established international cooperation with several different universities and institutes. However, the students' academic mobility in the biology and chemistry programmes is still low. As described in the Self-Assessment Report, in 2018, one student and in 2020 two students participated in a research collaboration with Universiti Teknologi Malaysia. In addition, there are only a few international students. In 2018, 4 students from Universiti Sabah Malaysia studied for one semester in the Chemistry Department, while in 2019, there was	**BOB.** We agree that the students' academic mobility in the biology and chemistry programs is considered low. The current low mobility of students is likely due to the pandemic in the last 2 years. In the future, we expect that there will be an increase in the number of student mobility. We noted that there was an increase in the number of student mobility which began to be shown in the odd semester 2021/2022 as many as 4 students (IISMA, MBKM). And there was a significant increase in the even semester 2021/2022 as many as 11 candidates students (program IISMA, MBKM). It is expected that in the com-	● BoB is committed to encouraging students to be more active in student mobility programs offered from both UNDIP and National funding. ● To realize this commitment, BoB will increase cooperation with foreign institutions/universities to facilitate students to be involved in academic activities in the form of student exchange, sit-in programs, summer courses, credit transfer programs, joint degrees. ● BoB believes that along with the increase in funding schemes pioneered nationally from

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	one student from Myanmar.	ing year there will be another increase in the number of students mobility, given the high interest of students to seek experience at universities abroad or also through scientific competitions at the international level). **BOC.** BoC will follow up on existing collaborations with researchers and institutions abroad to improve international mobility. The BoC will also encourage and provide information for students and teaching staffs to apply for various travel/mobility scholarships in collaborative research, internships or postdoctoral programs, such as Indonesian International Student Mobility Awards (IISMA) provide by the Government of the Republic of Indonesia to fund Indonesian students for mobility program at top universities overseas, and other International Funding like SHARE (scholarship programme for intra-ASEAN and ASEAN-EU mobility), DAAD, ERASMUS, Mobukagakusho, etc.	the Ministry of Research, Technology and Higher Education through student mobility programs, the number of BoB's students involved in academic mobility will be increased for the next 5 years. IISMA socialization provided by Undip.
10	*Page 19 line 5* UNDIP recognizes the courses taken by the students outside university	**BOB.** BoB continues to improve efforts related to academic mobility for stu-	

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	based on the comparability of the intended learning outcomes. The peers consider this regulation sufficient. However, according to the opinion of the peer group, the academic mobility of the students should be further promoted	dents through various program platforms available from the Ministry of Research, Technology and Higher Education, BRIN and Undip internally. International exchange programs that students can participate in include IISMA, EU share, Researcher/ Lecturer's international research collaboration/publication project which involves students, summer course program.	
11	*(On page 19, 13)* more places and better endowed scholarships for long and short-term stays abroad.	**BOB.** To complement the needs of students in the international mobility program, in addition to participants getting scholarships in accordance with the funding scheme, Undip also provides additional financial support used for living allowances and local transport. In a funding scheme that is fully funded by internal Undip through the World Class University Programme, students will get full funding which can be used for tuition fees, living allowance and research. This is supported by legally explained in the SBU document (Undip General Fee Standard) number 27 year 2020. **BOC.** The response to this inquiry is the same as No. 9	Link Document of the Undip Rector's Regulation number 27 of 2020 : (https://drive.google.com/file/d/14bNoL6FPFrzxdFdo32tA69ntLc8cYsMk/view?usp=sharing)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
12	*(On page 19, paragraph 2, line 5 - 7)* UNDIP can provide only limited travel grants, while the demand from students is rising. The lack of financial support hinders students from joining the outgoing programs.	Based on the Undip Rector's Regulation number 27 of 2020 concerning University General Cost Standards that Function as the Highest Limit for Students from Inside and from Outside Undip, it is stated in Appendix IV that in addition to airline tickets (travel cost), students are entitled to international insurance, accommodation per semester , living expenses per semester, book allowance per semester, and visa applications.	Link Document of the Undip Rector's Regulation number 27 of 2020 : (https://drive.google.com/file/d/14bNoL6FPFrzxdFdo32tA69ntLc8cYsMk/view?usp=sharing)
13	*(On page 19, line 19)* increasing the effort to further internationalising UNDIP by establishing more international co-operations and exchange programs and by offering more and better-endowed scholarships. In addition, the peers see that most of the faculty members have international contacts, which can be used for establishing more international co-operations. 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.	UNDIP have a scholarship offer scheme for foreign students/exchange students who will study at Undip. Undip provides accommodation / dormitory and waiving tuition fees for foreign students through the Diponegoro Exchange Experience Program (DEEP). The International Office is the one who responsible for the offering and selecting candidates. In relation to internationalization program efforts, RISTEK BRIN (National Research Institution) and LPPM (Research and Public Community Service) Undip have a collaborative research funding scheme for reputable international	The official website can be seen at the link: https://io.undip.ac.id/deep-2/

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		publications which requires lecturers to have cooperation with foreign institutions. it is possible for students to be involved. For international scheme available (Erasmus, DAAD, etc), BoB and BoC commit to apply these scheme to have more participants (students and lecturers).	
	Criterion 2.2		
14	*Page 20 line 17* The peers point out that there can be no fixed conversion rate between SKS 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.	**BOB.** Regarding the total hours for one credit (1 credit), has been regulated in the rector's regulation no 3, year of 2022. Based on that regulation, the conversion 1 SKS is equivalent to 1,5 ECTS. **BOC.** BoC will re-evaluate the actual workload as suggested by Peers	Document can be seen *(page 23)* on the following link : https://drive.google.com/file/d/12K1czpARlvnS3bDR5_YedhEJnen-NAYVN/view?usp=sharing.
15	*(On page 21, paragraph 1, line 1 - 6)* In any case, UNDIP needs to verify the students' total workload and make sure that the actual workload and the awarded ECTS credits correspond with each other. This information should be made transparent in the module	**BOB.** The rules regarding the conversion of ECTS and the division of 1 credit into actual in class lectures (face to face) , structured assignments and self-study have been included in module handbook, transcript and other documents as required. The total student workload of 1 credit consists of:	Link for module handbook https://bio.fsm.undip.ac.id/v1/en/curriculum/ Link for BoC Module handbook: http://tiny.cc/BoC_Module_handbook

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	descriptions and the study plans. The students' total workload (including the time needed for self-studies) needs to be determined and verified for each course separately. UNDIP should follow the procedure as described in the ECTS Users' Guide.	• lectures (face to face) 50 minutes • self-study 60 minutes • structured assignment 60 minutes Based on the the Rector Decree no 3, year of 2022, 1 credit = 1.5 ECTS **BOC.** BoC will re-evaluate the actual workload as suggested by Peers	
	Criterion 2.3		✓
16	*(On page 21, line 27)* The peers learn during the audit, that there is room for improvement in this area. For this reason, they recommend involving students more in the lectures and introducing more student-centered teaching, e.g. by offering more project-based or team-oriented forms of teaching and learning. In addition, it would be possible to involve UNDIP's partners from the industry in designing the projects.	**BOB.** It's already in the RPS to carry out the teaching and learning process that involves students as learning centers (Student center learning). Moreover, It will be implemented teaching and learning processes based on project based learning or team-oriented form of teaching. Improvement of the project-based teaching and learning process in the form of collaboration with industry will be carried out through internship programs and research collaborations as well as joint mentoring for the final project. For instance, the involvement of partners (Industry) has been carried out through the Matching Fund Kedaireka project in 2021 which involved 120 stu-	✓ Some assignments of student's presentation, project, and articles: https://drive.google.com/drive/folders/1pCSAW6kCY-OVfJAE9CiS-cbhcbtiw6G5E4?usp=sharing) ✓ Samples of students' Certificates related to their participation in internship program collaborated with industry (Matching Fund Kedaireka 2021) : https://drive.google.com/drive/folders/1fJV_Aw-crcfULDLRcqGtKV2bCTGWE0QiD?usp=sharing) BoC have held a talk show by inviting alumni who are

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		dents including 35 BoB students. Activities involving PT Rekayasa Agromarin Indonesia (PT.RAI) include applied biological activities, especially modern aquaculture applications and biomonitoring. **BOC.** BoC will involve more BoC partners in the learning process, e.g.: as guest lecturers or joining lecture, with project-based model to increase the student's involvement in the lectures.	engaged in the ceramics industry, from this talk show we hope to increase cooperation between the BoC and industrial partners that can involve students in the learning process https://kimia.fsm.undip.ac.id/2021/09/started-from-a-thesis-bachelor-to-become-an-outstanding-technopreneurship/
Criteria 3. Exams: System, concept and organization			
General feedback : Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC) appreciates and is grateful for the reviews from peers as a whole regarding Criteria 3. In general, we fully agree with comments from peers. On the system, concept and organisation, peers expressed overall satisfaction with the general quality of the samples from inspecting a sample of examination papers and Bachelor's theses. However, BoB and BoC also highlighted several points that have been conveyed by peers who need clarification or further explanation. As some comments need to be addressed, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
17	*Page 24 line 16* Some courses allow students, whose grades are still below the passing level, to improve their grades by repeating an exam (remedial). The students are satisfied with this policy, *but the peers point out that this process*	**BOB.** Module handbook for each course in BoB has included information on grading of the final project. It is stated in the handbook modul, that the grading of bachelor thesis /TA (TS) consists of 20% seminar proposal; 20% SHP; 60% thesis exam. The scoring points for each stage consist of:	Link of Document Module handbook Final project : (https://drive.google.com/file/d/1BjP8k8f5Q1qH8hEJ5fo5LBj1a6eafCpe/view?usp=sharing)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	should be made transparent in the academic regulations.	a. presentation (use of aids, timing, explanation of delivery), a maximum score of 25; b. writing (language and grammar), a maximum value of 10; c. research methods, a maximum value of 25; d. discussion (fluency, mastery of the material), maximum score of 35. **BOC.** Students have understood the related policies and rules in the academic regulatory document (explicitly cited in rector regulation no. 4 2020, article 35 paragraph 4 points f and g, https://kimia.fsm.undip.ac.id/wp-content/uploads/2021/06/Regulation-of-The-Rector-of-Universitas-Diponegoro-Number-4-of-2020-Academic-Regulation-In-Education-Field-For-Bachelors-Degree-Program-of-Universitas-Diponegoro.pdf) and the teachers re-explain the rules at the beginning of the lecture.	Evidence for academic regulation: https://kimia.fsm.undip.ac.id/wp-content/uploads/2021/06/Regulation-of-The-Rector-of-Universitas-Diponegoro-Number-4-of-2020-Academic-Regulation-In-Education-Field-For-Bachelors-Degree-Program-of-Universitas-Diponegoro.pdf
18	*Page 25 line 16* The grading for the final project (Bachelor's thesis) is done differently in both programmes. In the biology programme, the proposal seminar and the project result seminar each	**BOC.** BoC revises the RPS/module handbook by completing the assessment percentage which can be accessed at: (http://kimia.fsm.undip.ac.id/wp-content/up-	Evidence for Research project 1: http://kimia.fsm.undip.ac.id/wp-content/uploads/2022/04/Research-Project-1-Chemical-Experimentation.pdf

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	contribute 20% to the final grade, while the final report has a weight of 60%. In the chemistry programme, the oral defence contributes 70 % and the final report 30% to the grade (Research Project 2). The peers point out that this information needs to be made transparent in the respective module description. The peers also inspect a sample of examination papers and Bachelor's theses and are overall satisfied with the general quality of the samples.	loads/2022/04/Modul_Research-Project-2-Thesis-revisi.pdf) The grading for Research Project I globally covers outline (15%), experimentation (65%), Progress reports (15%), and report (5%). Grading for TR II as stated in the Research Project Assessment Form includes I. Thesis (30 %), consists of a. Language and Format (10 %) b. Substance (20%) II. Presentation (20%) consists of a. Idea communication design (10%) b. Scientific languages (5%) c. Attitude (5%) III. Discussion (50%) a. Material Mastery (30%) b. Analytical Ability (10%) c. Mastery of Supporting Knowledge (10%) The first item is the final report (30%) and the second one as the oral defence (70%). It is clear, the composition contributes to the final grade of Research Project 2. As suggested, this scheme is made transparent in the respective module description. (https://kimia.fsm.undip.ac.id/research-project-2-tr2/)	Evidence for Research Project 2: http://kimia.fsm.undip.ac.id/wp-content/uploads/2022/04/Modul_Research-Project-2-Thesis-revisi.pdf

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
Criteria 4. Resources			
General feedback : Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC) appreciates and is grateful for the reviews from peers as a whole regarding Criteria 4. In general, we fully agree with comments from peers. We are pleased to have confirmation from the peers based on the document that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree program. Furthermore, it is noted that the peers are impressed by the excellent and open-minded atmosphere among the students and the staff members, as this atmosphere of understanding and support is one of the strong points of the BoB and BoC degree programme. Furthermore, the peers confirm that UNDIP offers sufficient support mechanisms and opportunities for members of the teaching staff who wish for further developing their professional and teaching skills. However, BoB and BoC also highlighted several points that have been conveyed by peers who need clarification or further explanation. In response to some comments from the peers that need to be addressed, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
	Criterion 4.1		
19	*Page 26 line 12* 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.**	**BOC.** At the beginning of each semester, through a meeting of the BoC, it is decided the distribution of lecturers of courses according to the expertise of each lecturer. The distribution of teaching load is attempted to be even, generally each lecturer gets 6 to 9 SKS. For research, the Faculty of Science and Mathematics provides research fundings to all lecturers. Each lecturer is part of a group of 3-4 lecturers to work on a research project for one year. This allows each lecturer to develop their research. In addition to funds from the Faculty, there are	BoC always holds regular meetings at the beginning of the semester to distribute the teaching load so that it is evenly distributed and in accordance with the field of expertise

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		still several grants provided by the government and Diponegoro University which are given on a competitive basis. This will encourage lecturers to compete to further develop their research. Meanwhile, in the field of community service, there are three areas of study, which are the empowerment and strengthening of chemical-based home industries, strengthening the understanding and application of chemistry in the community, as well as empowering and restoring the environment by applying green chemistry. The Faculty of Science and Mathematics also provides funding facilities for community service activities, so that all lecturers have the opportunity to carry out this program. As with research, there are several grants provided by the government and Diponegoro University for community service programs.	
20	*Page 29 line 10* The basic technical equipment for teaching the students is available, although it is not state of the art, especially in the teaching laboratories. On	**BOB.** The Outdated instruments are still maintained, because study programs still need to meet the service needs for students. These instruments are calibrated every year and can still be used. At the same	Link of document : 1. Instrumen procurement (https://drive.google.com/file/d/1PSKOO90LmK5VD76z0pK0dk2Dm

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	the other hand, the research labs are well equipped with modern instruments. The students confirm during the discussion with the peers that, in general, they are satisfied with the available equipment, **but several instruments are outdated**. 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. Each laboratory has a lab supervisor; in addition, there are several senior students, who work as lab assistants.	time, BoB has budgeted for the procurement of new tools to update equipment to meet student needs, so that in the next 5 years, outdated learning support instruments will be replaced with new ones. As additional information, the University also allocates a budget for the procurement of the latest and advanced equipment which are placed in an integrated laboratory. This equipment can also be used by students, especially when carrying out bachelor thesis research. The procurement for new instruments is conducted every year.	Ath55Mn/view?usp=sharing) 2. maintenance (https://drive.google.com/file/d/1Ff_AmxNyI4umU0hPuDxo-jRWRET_2-n0T/view?usp=sharing) 3. Calibration documents (https://drive.google.com/file/d/1rQyG-M8hot-DgR0c1qpxTckFmm0JSWqVc/view?usp=sharing)
		BOC. We are aware that some of the equipment especially the high-tech equipment is out of date. Procurement of new goods is of course generally understood to require large funding. As part of its commitment to become an internationally accredited university, starting in 2022, Diponegoro University will make improvements by making a program to procure facilities and instruments for student learning. Currently we have submitted a proposal for equipment procurement to the University.	The new instrument Cary 630 FT-IR Spectrometer obtained by BoC. The new instrument Cary Eclipse Fluorescence Spectrometer obtained by BoC. BoC also complete manual procedures for all instruments in the laboratory.

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		The Faculty of Science and Mathematics has also intensified financial assistance for equipment procurement. As a manifestation of this, in March 2022, the BoC has obtained a new FTIR-ATR. We are committed to improving education and research equipment and infrastructure, especially those that are basic and routine needs.	
21	*Page 29 line 19* *Nevertheless, it is difficult for the peers to assess the extent of the safety measures based on the videos and the discussions alone. Only some laboratories are shown in the videos and especially the scope and design of the safety standards remain unclear* (material and surface quality of the working benches, safety goggles, gloves, eye showers, fire extinguishers, emergency exits, chemical-proof cabinets, first-aid kits, fume hoods, waste management, and ventilation system). For this reason, *the peers point out that it is necessary to verify that the safety measures are strictly followed in the labs*	**BOB.** BoB provides standard laboratory safety rules for researchers and students in the six main laboratories available, especially laboratories that use hazardous materials or processes. These safety instruments including safety goggles, gloves, eye showers, fire extinguishers, are already available. Safety rules include behavior hygiene and safety information to avoid accidents are already available too. The emergency exit route is also provided and informed to students. Signs for hazardous materials and hazardous equipment are also available. All tools in the laboratory are equipped with standard operating procedures. The laboratory has been	Examples of safety instruments ad emergency exit route and fire extinguishers: ● Smoke Detectors ● emergency exit route and fire extinguishers

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	by all persons and to explain in detail, what safety measures are in place. The peers understand that students receive safety instructions at the beginning of every laboratory class, but it is also necessary that all persons follow these instructions.	equipped with smoke detectors as a warning sign of danger. The laboratory building is equipped with evacuation routes and emergency stairs. Routine monitoring of all functional laboratory facilities by officers. **BOC.** Thank you for the feedback provided. We are aware of this. We have been and are currently making improvements to laboratory safety equipment through university and faculty funding. Some of the things mentioned, such as safety goggles, gloves, fire extinguishers, emergency exits, first-aid kits, fume hoods are available. We still need to improve the material and surface quality of the working benches, eye showers, fire extinguishers, chemical-proof cabinets, waste management, and ventilation systems. It is the commitment of University and Faculty leaders to improve safety facilities.	
22	*(On page 29, paragraph 5, line 1 - 5)* Moreover, the peers emphasize that all students need to have the oppor-	**BOB.** Regarding the practicum model, BoB has considered that the group of students in conducting experiment and laboratory work is possible to be reduced and limited only to 2	

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	tunity to get hands-on experience with chemicals and carrying out laboratory experiments. *For this reason, the number of students conducting one experiment should be reduced*. In order to gain sufficient practical experience in the laboratories, groups conducting one experiment should be limited to 2 to 3 students.	to 3 students. Some lab activity already implemented the group with 2 to 3 students. In practice, each student in each group worked on all stages of the experiment. Student mastery of practicum material is proven through personal evaluation and guided by a practicum assistant. **BOC.** The response to this inquiry is the same as No. 5	
23	*Page 30 line 1* In addition, teachers and students can use the facilities of UNDIP's central laboratory. Here, more sophisticated instruments (e.g., Atomic Force Microscope, X-Ray Diffraction, Gas Chromatographer, Mass Spectrometer, and Laser Particle Size Analyzer) are available and lab technicians are present to operate them. Teachers have to apply for using the facilities and are charged for the provided services. If some sophisticated instruments are not available at UNDIP for example in the area of molecular biology or genetics, the teachers use their international and national contacts and collaborations to receive support, e.g., by	All lecturers and students can access the instruments in the UNDIP integrated laboratory. It's just that to maintain a lifetime, the operation of the instrument is carried out by trained personnel	Evidence for service in UPT laboratory: https://lab-terpadu.undip.ac.id/daftar-ruang-lingkup-layanan-pengujian-analisis/

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	analyzing samples for them		
Criteria 5. Transparency and documentation			
General feedback : Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC) appreciates and is grateful for the reviews from peers as a whole regarding Criteria 5. In general, we fully agree with comments from peers. We notice that the peers found that the rights and duties of both UNDIP and the students are clearly defined and binding, as well as rules and regulations are published on the university's Indonesian website, so that the students receive all relevant course material in the language of the degree program at the beginning of each semester. We also notice some issues in the Criteria 5 emphasized by the peers that need to have more explanation, including issues on color-vision and deafness that are no longer important abilities even in laboratories, as modern tools and technology are available nowadays. Another issue is on the calculation of the students' total workload and the conversion into ECTS points. Therefore, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
	Criterion 5.1		
24	*Page 31 line 1* After studying the module descriptions, the peers see that the module descriptions do not always make transparent, how each exam contributes to the final grade and what kind of exam is required (e.g. for the final project). The module description of the final project must include the information about the composition of the final grade and how the different exams (report, presentation, and discussion) contribute to it.	**BOB.** BoB considers it important to make the necessary revisions related to a more transparent description for the final grade. The description modules have been completed with information related to the composition of the final grade. a. The scoring points for each stage consist of: a) Presentation (use of aids, timing, explanation of delivery), a maximum score of 25; b. Writing (language and grammar), a maximum value of 10;	Link of Document Module handbook Final project : (https://drive.google.com/file/d/1BjP8k8f5Q1qH8hEJ5fo5LBj1a6eafCpe/view?usp=sharing)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		c. Research methods, a maximum value of 25; d. Discussion (fluency, mastery of the material), maximum score of 35.	
		BOC. The final assessment comes from several components, which include 10% of quiz scores, 20% of assignment scores, 35% of mid-term exam scores and 35% of end-of-semester exam scores. For problem-based learning courses, the proportion of assignment scores is higher, up to 50%. Specifically for research project, the assessment is carried out by looking at the entire process of the final project in the form of research in the laboratory to the trial of the final project exam, where the assessment is recapitulated in the minutes of the final project exam. Thank you for the feedback. We revised the module handbook related to the final project. The detailed explanation for this question has been answered in question 18	
	Page 31 line 5	**BOB.** related to the total workload and conversion	Rector's Decree No 3 year 2022 :

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
25	the calculation of the students' total workload and the conversion into ECTS points is not transparent and consistent. For example the course "Basic Biology I" has 125 hours of students' workload and 4.8 ECTS points are awarded. This should be 5 ECTS points. In the course "Biochemistry", the students' workload is 165 hours and 6.4 ECTS points are awarded. This should be 6.6 ECTS points, if 25 hours per ECTS point are calculated. Moreover, UNDIP needs to define in an official regulation how many hours of students' total workload are required for one ECTS point and make that information transparent. This issue is also discussed under criterion 2.2.	to ECTS BoB has re-calculated and adjusted to Rector Decree about ECTS conversion. The division of total credit hours consisting of face-to-face, independent work and structured assignments has been rearranged in a transparent manner. Furthermore, we are pleased to inform you that the official regulation related to the conversion of the total workload to the ECTS system has been formally made legal in the form of a Rector's Decree. (Rector Decree number 3 year 2022) **BOC.** The response to this inquiry is the same as No. 14 We fixed ECTS on the handbook and RPS module on the website	https://drive.google.com/file/d/12K1czpARlvnS3bDR5_YedhEJnen-NAYVN/view?usp=sharing
26	*Page 31 line 14* all module descriptions should include current literature references .	**BOB.** As the advice, the latest literature included in all module handbooks has been done. **BOC.** Thank you for your feedback. We revised the handbook module regarding the references used	Link of revised version of module handbooks : Curriculum | Biologi FSM (undip.ac.id)
27	*Page 31 line 24*	**BOB.** As peers' advice, the transcript will be accompa-	Link of Sample Academic Transcripts with ECTS :

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	The Diploma Supplement and the Transcript of Records contain almost all necessary information about the respective degree programme. However, some information should be added. The Transcript of Records should also list the acquired ECTS points of each course and how many ECTS points are awarded for whole degree programme. The Diploma Supplement should also include statistical data about the distribution of final grade according to the ECTS Users' Guide. This allows the reader to categorise the individual result.	nied by an ECTS conversion. In this case, the International Office (KUI) will issue a non-degree academic transcript that has included the ECTS conversion. For official Degree Academic Transcripts, BoB will submit to the FSM Dean to be officially ratified. This policy is carried out through a university leadership meeting involving the academic dean and vice dean. As peers' advice, the Diploma Supplements (SKPI) will be equipped with statistical data on the distribution of the final score and adjusted to the guidelines for the use of ECTS. **BOC.** This is related to the Rector of Diponegoro University Regulation No. 3 of 2022 regarding diploma supplement, which was just issued. The format of academic transcripts and diploma-supplements equipped with ECTS, statistical data about the distribution of final grades will be implemented in the upcoming graduation period.	https://drive.google.com/file/d/13uWmvnI-uMhVXYDRYr75D04JkiU2VFqMg/view?usp=sharing Link of Sample Diploma Supplements (SKPI) : https://drive.google.com/file/d/14YfaGRrnKi-WbFkX3tFBFYxC5XYSDQgGy/view?usp=sharing Evidence of Rector Regulation for Diploma Supplement: http://kimia.fsm.undip.ac.id/wp-content/uploads/2022/04/RECTOR-REGULATION-DIPLOMA-SUPPLEMENT.pdf Evidence of Academic Transcripts with ECTS and Diploma Supplement of Chemistry: http://tiny.cc/Transcript_Diploma_BoC
	Page 32, line 16	**BOB.** BoB has taken into account input from Peers	

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
28	The peers emphasize that with modern tools and technology, color-vision and deafness are no longer important abilities even in laboratories. Regarding the study programs at hand, it is even less of an issue as the experiments are conducted in groups and the color-blindness or disability of one student can be easily compensated by the other group members. Hence, they consider such an admission criterion too restrictive and expect UNDIP to change it .	related to Color Blindness policy, therefore BoB will coordinate or propose this issue to the Faculty to issue a decree related to Color Blindness and Deafness policy for new students to be eliminated. Regarding this issue, BoB will propose to the Dean of FSM to address the issue to be implemented. BoB expects that this regulation may be implemented soon determined by the Rector through an official meeting of university's leaders.	
		BOC. Thank you for the feedback from peers. We agree with peers and will communicate this with the admissions department. We will revise the requirements so that students with disabilities of color blindness and deafness can enroll in the BoC	
Criteria 6. Quality management: quality assessment and development			
General feedback : Bachelor of Biology Program (BoB) and Bachelor of Chemistry (BoC)appreciates and is grateful for the reviews from peers as a whole regarding Criteria 6. In general, we fully agree with comments from peers. Some positive comments from the peers are really appreciated, such as the peers gaining the impression that the Departments take the students' feedback seriously and changes are made if necessary. Furthermore, the peers confirm that the quality management system at UNDIP is suitable to identify weaknesses and to improve the degree programs, with some notes that have to be followed up. Some issues in this criterion may include the results of the questionnaires and the lecturers that have to be discussed with respective students for improvements in the course. Another issue is on representation of the students in the university's boards to be able to get involved in the decision-making processes. Furthermore, beside general satisfaction		

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
with the qualification profile of the employers, issues on more involvement of the employers in the form of activities such as guest lecturers on current developments in the respective area, introducing more project-oriented teaching, and prolonging the internship (work practice) are taken into account by BoB and BoC. Finally, the recommendations of the employers in establishing an academic advisory board is a very good idea for us to apply. Therefore, our feedback in the form of further explanation and supporting facts and links as well as a reviewed based action plan related to the explanation are written below.			
29	*Page 33 line 29* The peers gain the impression that the Departments take the students' feedback seriously and changes are made if necessary. Nevertheless, the peers see that the results of the course questionnaires are not discussed directly with the students. Consequently, the peers expect UNDIP to inform students about the results of the questionnaires and the teachers should discuss with them about possible improvements in the respective course. The feedback loops need to be closed.	**BOB.** Management at the Bachelor of Biology (BoB) has a system that allows students to provide criticism/suggestions related to course administration (aspects of teaching materials, suitability of material with exams, how lecturers deliver material, etc.) through the online system that has been provided. This mechanism is carried out periodically and measured at the end of each semester. As for the summary of student feedback, internal coordination is carried out to discuss and find solutions to problems by the Quality Assurance Team (GPM), which is then reported to the Head of the Study Program and if necessary, discussed directly with the lecturer in charge of the course. The results of internal discussions were conveyed to students through an academic dialogue forum attended by faculties, departments and BoB leaders	The link can be accessed by students via Quality Assurance Assesment | Biologi FSM (undip.ac.id)

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		to convey BoB's commitment to improving the quality of teaching. In dialogue forums, students are given the freedom to express their opinions for the improving the teaching system in the future. **BOC.** The delivery of the results of the questionnaire to students is carried out by the quality assurance team to ensure that their feedback is meaningful and further processed to improve the quality of learning. BoC will be committed to conveying the survey results to Lecturers and Students so that both parties can discuss with each other. In addition, BoC provides a routine academic dialogue at the beginning of the semester involving administrators, students, lecturers and faculty leaders where students can make suggestions to improve the quality of learning.	BoC Questionnaire result that will be delivered to all students and lecturers: http://tiny.cc/BoC_Questionnaire_result The evidence of academic dialogue: https://kimia.fsm.undip.ac.id/2021/08/chemistry-dialogue-2021/
30	*Page 34 line 1* Moreover, students confirm during the audit that they are not represented in the university's boards – with the exception of the Board of Trustees on university level - and, thus,	**BOB.** In the formal meeting of the Board of Trustees at the university level, student representatives have become part of the members through the Statute of Universitas Dipone-	Link of document the Statute of Universitas Diponegoro *(Government Regulation of The Republic of Indonesia Number 52 of 2015, Page 21, Article 31)* : (https://drive.google.com/file/d/1BmV1yl3UrNvg5Xt

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
	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 student representatives should be members of boards at UNDIP (at least on programme and faculty level) and be actively involved in the decision-making processes for further developing the degree programmes.	goro (Government Regulation of The Republic of Indonesia Number 52 of 2015). Therefore, student representatives are given the opportunity to be directly involved in the decision-making process related to academic activities. In addition, students can convey ideas freely through student organizations and academic dialogue forums which are attended by BoB leaders, and faculties. Ideas or aspirations will be considered and become an important component in improving the learning process in the future. At the faculty level, there are the Student Executive Board (BEM) and the student SENAT. They are directly involved in official agendas, such as Dean selection, Tuition fee policy, Evaluation of teaching and learning process, facilities and infrastructure. In their activities, BEM and SENAT are also given the opportunity to have direct dialogue with the head of the faculty/study program **BOC.** In the Department, there is a chemistry student association and in the Faculty, there is a Badan Eksekutif Mahasiswa	4Yd7tL4sL4ZpGuSEo/view?usp=sharing) Link of document : 1. Students are involved in tuition fee policy (https://drive.google.com/file/d/14bvUSp4bbihhonZBXIMMK7itouccqci/view?usp=sharing) 2. Student are involved in Evaluation of teaching and learning process (https://drive.google.com/drive/folders/1PZkPMNCYsnRvri8AgpNieSWrNeYaSlEN?usp=sharing) Official account for BEM FSM UNDIP: https://linktr.ee/bemfsmundip

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
		(BEM/Student Executive Body). We are committed to involve students more in decision making processes.	
31	*Page 34 line 12* During the audit, the employers express their general satisfaction with the qualification profile. They just recommend inviting more guest lecturers from the industry to give lectures on current developments in the respective area, introducing more project-oriented teaching, and prolonging the internship (work practise). This is also discussed under criteria 2.1.	**BOC.** The Department of Chemistry annually holds a Public Lecture or Guest Lecture filled with Industry practitioners to give lectures on the latest developments in the field of Chemistry in the industry. BoC commits to increase the frequency of these guest lectures. The alumni coordinator often invites alumni who work in various sectors to provide information on the development of chemistry in the industrial world, the industry in which they work as well as tips for successful work in the Industry. The Bachelor of Chemistry has actually increased the workload in the field work course from 1 SKS in the previous curriculum to 2 SKS in the current curriculum. We believe that this workload is adequate because generally field work is carried out during semester breaks which range from 4 to 6 weeks.	The evidence of Public Lecture or Guest Lecture filled with Industry practitioners to give lectures on the latest developments in the field of Chemistry in the industry: • https://kimia.fsm.undip.ac.id/2021/09/started-from-a-thesis-bachelor-to-become-an-outstanding-technopreneurship/ • https://kimia.fsm.undip.ac.id/2022/03/scholarship-hunters/

No	Specific Comments of Peers	Response /explanation/Corrective action	Supporting facts/documents/link & reviewed based action plan
32	*Page 34, line 27)* recommend establishing an academic advisory board at each department. The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university (e.g. companies and governmental institutions).	**BOB.** Considering the importance of obtaining information from stakeholders, especially the industrial world on the quality or competence of graduates, the BoB views the importance of suggestions from peers to form an academic advisory board at the Department level. As for what has been done so far, BoB regularly invites stakeholders at every annual anniversary event where this activity is filled, including workshops on curriculum development that invites stakeholders. Therefore, this issue will be proposed as a decision that has legal provisions and becomes an official institution. This institution will function in developing curriculum, increasing employment opportunities, research collaboration with students and also internship opportunities in industry. **BOC.** We do agree with peer's suggestion. The formation of an Advisory Board consisting of alumni, students and stakeholders is needed to provide useful feedback for institutional development.	Link of Decree's Dean of "Forum Mitra Prodi Biologi" : https://drive.google.com/file/d/14ZGx1hvDQC5lxR27-qSr9IZUeN-vNnpqo/view?usp=sharing We have discussed with the Faculty and the Faculty has provided a decree regarding the advisory board. (http://tiny.cc/Dean_Decree_Partner_Forum)

F Summary: Peer recommendations (13.05.2022)

Taking into account the additional information and the comments given by UNDIP, 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	-	30.09.2027
Ba Chemistry	With requirements for one year	-	30.09.2027

Requirements

For all degree programmes

A 1. (ASIIN 1.4) UNDIP must not exclude students from admission on the grounds of colour-blindness or deafness.

A 2. (ASIIN 2.2) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

A 3. (ASIIN 4.3) UNDIP needs to make sure that the safety measures in the laboratories are followed strictly and all laboratories need to be equipped with the necessary modern safety equipment.

A 4. (ASIIN 4.3) Provide enough technical equipment and instruments so that experiments can be done by groups of not more than two to three students.

A 5. (ASIIN 5.1) The module descriptions need to include information about the students' total workload, and the awarded ECTS points.

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

Recommendations

For all degree programmes

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 involve students more in the lectures and to introduce more student-centred teaching.

E 3. (ASIIN 2.1) It is recommended to adapt the intended learning outcomes and the curriculum to technological advancements and current developments in chemistry and biology, in order to prepare graduates even better for the requirements of the job market.

E 4. (ASIIN 2.1) It is recommended to invite experts from the industry and research institutions to give lectures on new developments and current technologies in biology and chemistry.

E 5. (ASIIN 6) It is recommended to make student representatives members of the boards at UNDIP at programme or department level and to directly involve them in the decision making processes for further developing the degree programmes.

E 6. (ASIIN 6) It is recommended to establish an advisory board for each department with representatives from the industry and public institutions, who can advise the departments on the needs and requirements of the job market.

For the Bachelor's degree programme Chemistry

E 7. (ASIIN 2.1) It is recommended to prolong the internship to two to three months.

G Comment of the Technical Committees (13.06.2022)

Technical Committee 09 - Chemistry (08.06.2022)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and agrees with the assessment of the expert group. A rewording is proposed only for requirement A1.

The Technical Committee 09 – Chemistry 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	-	30.09.2027
Ba Chemistry	With requirements for one year	-	30.09.2027

A 1. (ASIIN 1.4) UNDIP must not exclude students from admission because of colour-blindness or deafness.

Technical Committee 10 – Life Sciences (13.06.2022)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and agrees with the assessment of the peer group.

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	-	30.09.2027
Ba Chemistry	With requirements for one year	-	30.09.2027

H Decision of the Accreditation Commission (24.06.2022)

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

The Accreditation Commission discusses the procedure and agrees with the assessment of the peer group and the different wording of requirement A1 according to the suggestion from TC 10 – Life Sciences.

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	-	30.09.2027
Ba Chemistry	With requirements for one year	-	30.09.2027

Requirements

For all degree programmes

A 1. (ASIIN 1.4) UNDIP must not exclude students from admission because of colour-blindness or deafness.

A 2. (ASIIN 2.2) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

A 3. (ASIIN 4.3) UNDIP needs to make sure that the safety measures in the laboratories are followed strictly and all laboratories need to be equipped with the necessary modern safety equipment.

A 4. (ASIIN 4.3) Provide enough technical equipment and instruments so that experiments can be done by groups of not more than two to three students.

A 5. (ASIIN 5.1) The module descriptions need to include information about the students' total workload, and the awarded ECTS points.

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

Recommendations

For all degree programmes

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 involve students more in the lectures and to introduce more student-centred teaching.

E 3. (ASIIN 2.1) It is recommended to adapt the intended learning outcomes and the curriculum to technological advancements and current developments in chemistry and biology, in order to prepare graduates even better for the requirements of the job market.

E 4. (ASIIN 2.1) It is recommended to invite experts from the industry and research institutions to give lectures on new developments and current technologies in biology and chemistry.

E 5. (ASIIN 6) It is recommended to make student representatives members of the boards at UNDIP at programme or department level and to directly involve them in the decision making processes for further developing the degree programmes.

E 6. (ASIIN 6) It is recommended to establish an advisory board for each department with representatives from the industry and public institutions, who can advise the departments on the needs and requirements of the job market.

For the Bachelor's degree programme Chemistry

E 7. (ASIIN 2.1) It is recommended to prolong the internship to two to three months.

I Fulfilment of Requirements (23.06.2023)

Analysis of the peers and the Technical Committees (12.06.2023)

Requirements

For all programmes

A 1. (ASIIN 1.4) UNDIP must not exclude students from admission because of colour-blindness or deafness.

Initial Treatment	
Peers	Not fulfilled Vote: unanimous Justification: There is no clear regulation change. UNDIP is in the process of adjusting regulations, however, it is not clear to which extend. Several study programmes will continue to conduct screening tests related to physical abilities.
TC 09	Not Fulfilled Vote: unanimous Justification: The TC agrees that UNDIP needs to present a regulation on the admittance of colour-blind and deaf students.
TC 10	Not fulfilled Vote: unanimous Justification: TC confirm that the admission of colour-blind and deaf students to the study programmes is still not possible.

A 2. (ASIIN 2.2) Verify the students' total workload and award the ECTS points accordingly. Define how many hours of students' workload is required for one ECTS point.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: UNDIP introduced measures to monitor the students' workload and has adjusted the ECTS calculation.
TC 09	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous

	Justification: The TC agrees with the peers' assessment.

A 3. (ASIIN 4.3) UNDIP needs to make sure that the safety measures in the laboratories are followed strictly and all laboratories need to be equipped with the necessary modern safety equipment.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: UNDIP organizes safety courses in the third semester before students start their lab courses. In addition, at the beginning of each practicum safety briefing is done. Periodic checks on safety equipment is done.
TC 09	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.

A 4. (ASIIN 4.3) Provide enough technical equipment and instruments so that experiments can be done by groups of not more than two to three students.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: New equipment was purchased to allow for a max group size of 3 persons.
TC 09	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.

A 5. (ASIIN 5.1) The module descriptions need to include information about the students' total workload, and the awarded ECTS points.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: UNDIP has updated the module descriptions accordingly.
TC 09	Fulfilled Vote: unanimous

	Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.

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

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: Results of the questionnaires are analysed by the Quality Assurance Team. Also, every lecturer conducts a survey with the students that is directly discussed.
TC 09	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.

Decision of the Accreditation Commission (23.06.2023)

The AC decides that requirement A1 is not fulfilled.

Justification:

UNDIP needs to provide a clear verification that colour-blind and deaf persons are not automatically excluded from studying.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN seal**	**Subject-specific Label**	**Maximum duration of accreditation**
Ba Biology	Requirement A1 not fulfilled	-	30.09.2027
Ba Chemistry	Requirement A1 not fulfilled	-	30.09.2027

J Fulfilment of Requirements (08.12.2023)

Analysis of the peers and the Technical Committees (22.11.2023)

Requirements

For all degree programmes

A 1. (ASIIN 1.4) UNDIP must not exclude students from admission because of colour-blindness or deafness.

Second Treatment	
Peers	Fulfilled Vote: unanimous Justification: Prospective students with physical disabilities won't be denied admission if the draft is put into effect. However, it's important to consider how these students can be adequately supported in their respective majors, particularly in fields like biology and chemistry.
TC 09	Fulfilled Vote: unanimous Justification: The TC agrees with the peers' assessment.
TC 10	Fulfilled Vote: unanimous Justification: TC with the peers' judgement.

Decision of the Accreditation Commission (08.12.2023)

The Accreditation Commission follows the assessment of the experts and the Technical Committees and decides that all requirements are fulfilled.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN seal**	**Subject-specific labels**	**Maximum duration of accreditation**
Ba Biology	All requirements fulfilled	-	30.09.2027

Degree Programme	ASIIN seal	Subject-specific labels	Maximum duration of accreditation
Ba Chemistry	All requirements fulfilled	-	30.09.2027

Appendix: Programme Learning Outcomes and Curricula

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

A. Attitude:

1. Apply the values of Pancasila, morals, ethics, respect others and obey the law.
2. Sensitive to surrounding problems and play an active role in society.
3. Disciplined and responsible.

B. Generic Skill:

1. Have critical, systematical, creative and innovative thinking.
2. Have leadership and communicative skills.
3. Have the ability to keep up with recent technologies.
4. Able to work independently as well as together in teams.

C. Specific Skill:

1. Acquiring the basic knowledge of biology, molecules, cells, and organisms relevant to mathematics and natural sciences
2. Acquiring methodological competence in Life Sciences, including handling organisms, carrying out independent practical work in the laboratory and in the field, and being able to apply these skills to other contexts,
3. Having an understanding of safety and environmental issues, associated fundamental law, and management of sustainable environment.
4. Being able to identify and develop the potency of biodiversity for human prosperity using recent technology.
5. Acquiring a good level of knowledge in at least one special area of Life Sciences.
6. Being able to recognize specific Life Sciences problems and then formulate solutions and present results.

D. Knowledge:

1. Mastering basic biology and biotechnology, and knowing how to apply and develop it.

2. Knowing how to implement and develop the potential of biodiversity in a sustainable manner.
3. Knowing how to use of the latest technology

The following **curriculum** is presented:

No	Course Subject	Units	ECTS	Semester
1	Pancasila and Civil Education	3 - 0	4,8	I
2	Biodiversity Introduction	2 - 0	3,2	I
3	Sports	0 - 1	1,6	I
4	Internet of Things (IoT)	2 - 0	3,2	I
5	Basic Biology I	2 - 1	4,8	I
6	Plant Morphology	2 - 1	4,8	I
7	Animal Anatomy	2 - 1	4,8	I
8	Cell Biology	2 - 0	3,2	I
9	Basic Chemistry	2 - 0	3,2	I
	Total	17 - 4	33,6	
No	**Course Subject**	**Units**	**ECTS**	**Semester**
1	Indonesian Language	2 - 0	3,2	II
2	English	2 - 0	3,2	II
3	Taxonomy	2 - 1	4,8	II
4	Religion	2 - 0	3,2	II
5	Plant Anatomy	2 - 1	4,8	II
6	Basic Biology II	2 - 1	4,8	II
7	Biochemistry	3 - 1	6,4	II

No	Course Subject	Units	ECTS	Semester
8	Animal Embryology	2 - 1	4,8	II
	Total Units	17 - 5	35,2	

No	Course Subject	Units	ECTS	Semester
1	Research Methodology	2 - 0	3,2	III
2	Plant Physiology	3 - 1	6,4	III
3	Animal Physiology	3 - 1	6,4	III
4	Microbiology	3 - 1	6,4	III
5	Bioconservation Introduction	2 - 0	3,2	III
6	Plant Biodiversity	2 - 1	4,8	III
7	Ecology	3 - 1	6,4	III
	Total Units	18 - 5	36,8	

No	Course Subject	Units	ECTS	Semester
1	Genetics	2 - 1	4,8	IV
2	Environmental Science	2 - 0	3,2	IV
3	Biostatistics	2 - 0	3,2	IV
4	Molecular Biology	3 - 0	4,8	IV
5	Protists Biology	2 - 1	4,8	IV
6	Animal Biodiversity	2 - 1	4,8	IV

No	Course Subject	Units	ECTS	Semester
7	Plant Microtechnique	1 - 1	3,2	IV
8	Histology	2 - 0	3,2	IV
9	Mycology	2 - 1	4,8	IV
	Total Units	18 - 5	36,8	

No	Course Subject	Units	ECTS	Semester
1	Scientific Communication Technique	2 - 0	3,2	V
2	Plant Embryology	2 - 0	3,2	V
3	Animal Microtechnique	1 - 1	3,2	V
4	Biosystematic	2 - 0	3,2	V
5	Recombinant Genetic	2 - 1	4,8	V
6	Bioconservation	2 - 0	3,2	V
7	Biophysics	2 - 0	3,2	V
8	Internship	0 - 2	3,2	V
9	Biotechnology	2 - 0	3,2	V
10	Elective courses I	2 - 0	3,2	V
11	Elective courses II	2 - 0	3,2	V
	Total Units	19 - 4	36,8	
1	Entrepreneurships	2 - 0	3,2	VI

No	Course Subject	Units	ECTS	Semester
2	Public Services	0 - 3	4,8	VI
3	Germ Plasm	2 - 0	3,2	VI
4	Bioinformatics	2 - 0	3,2	VI
5	Marine Biology	2 - 0	3,2	VI
6	Elective courses III	2 - 0	3,2	VI
7	Elective courses IV	2 - 0	3,2	VI
8	Elective courses V	2 - 0	3,2	VI
9	Elective courses VI	2 - 0	3,2	VI
10	Elective courses VII	2 - 0	3,2	VI
	Total Units	18 - 3	33,6	

No	Course Subject	Units	ECTS	Semester
1	Evolution	2 - 0	3,2	VII
2	Elective courses VII	2 - 0	3,2	VII
3	Elective courses IX	2 - 0	3,2	VII
	Total Units	6 - 0	9,6	
	Final Project	0 - 6	9,6	VIII
	Total Units	6 - 0	9,6	

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

1. Possessing a strong foundation of chemical knowledge (Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry and Biochemistry) and any necessary additional knowledge (Physics and Mathematics). This foundation is developed based on scientific studies in the field of chemistry in terms of identification, analysis, synthesis, isolation, and molecule transformation.
2. Possessing basic knowledge of specialized chemistry (for example, computational chemistry, materials chemistry, macromolecules, and polymers).
3. Possessing laboratory skills in Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry and Biochemistry and being able to work individually or in a group to solve problems through the application of knowledge of structures, properties, kinetics, and energetics of molecules and chemical systems. The application of this knowledge is conducted through analytical and synthetic methods in specialized chemistry, as well as through the application of relevant technologies.
4. Possessing the ability to collect and interpret relevant scientific data and then analyse and assess it to make appropriate decisions.
5. Possessing the ability to communicate information, ideas, problems, and solutions to the public.
6. Possessing a standard competency of graduates that is in accordance with standards of with work qualifications, mastery of analytical tools and supporting software, synthesis, and modelling of molecules in general or specialized chemistry.
7. Possessing high level knowledge and competency standards that can be developed for further studies.

The following **curriculum** is presented:

Semester 1					Semester 2			
No.	Subject	credits	ECTS		No.	Subject	credits	ECTS
1	Experimental in General Chemistry 1	1	1.6		1	Experimental in General Chemistry 2	1	1.6
2	Sports	1	1.6		2	Experimental in General Physics	1	1.6
3	General Chemistry 1	3	4.8		3	General Mathematics 1	2	3.2
4	Chemistry of Elements	3	4.8		4	General Physics 1	2	3.2
5	Management of Chemical Information	2	3.2		5	General Chemistry 2	3	4.8
6	English	2	3.2		6	Organic Chemistry 1	2	3.2
7	Religion	2	3.2		7	Inorganic Chemistry 1	3	4.8
8	Internet of Things	2	3.2		8	Analytical Chemistry 1	3	4.8
9	Indonesian	2	3.2		9	Basics of Biological Chemistry	2	3.2
10	Pancasila and Citizenship	3	4.8		10	General Biology	2	3.2
	Total Compulsory Credits for Semester 1	21	33.6			Total Compulsory Credits for Semester 2	21	33.6

Semester 3					Semester 4			
No.	Subject	credits	ECTS		No.	Subject	credits	ECTS
1	Experimental in Analytical Chemistry	1	1.6		1	Organic Chemistry 3	2	3.2
2	Organic Chemistry 2	2	3.2		2	Inorganic Chemistry 3	3	4.8
3	Inorganic Chemistry 2	3	4.8		3	Instrumental Analytical Chemistry 1	2	3.2
4	Analytical Chemistry 2	3	4.8		4	Chemical Energetics	3	4.8
5	Chemical Structure and Bonding	3	4.8		5	Chemical Spectroscopy	2	3.2
6	Experimental in Inorganic Chemistry	1	1.6		6	Chemical Separation	2	3.2
7	Experimental in Organic Chemistry	1	1.6		7	Structure and Function of Biomolecules	3	4.8
8	General Mathematics 2	2	3.2		8	Experimental in Physical Chemistry	1	1.6
9	General Physics 2	2	3.2		9	Physical Organic Chemistry	2	3.2
10	Elective courses in own study program				10	Elective courses in own study program		
11	Elective courses of Study Program at UNDIP				11	Elective courses of Study Program at UNDIP		
12	Elective courses outside UNDIP and Internships				12	Elective courses outside UNDIP and Internships		
	Total Compulsory Credits for Semester 3	18	28.8			Total Compulsory Credits for Semester 4	20	32

Semester 5					Semester 6			
No.	Subject	credits			No.	Subject	credits	
1	Experimental in Biochemistry	1	1.6		1	Advance Experimental in Chemistry 1	2	3.2
2	Organic Analysis	2	3.2		2	Reaction Dynamics	2	3.2
3	Organic Synthesis	2	3.2		3	Research Design	1	1.6
4	Inorganic Chemistry 4	3	4.8		4	Field Work Practice	2	3.2
5	Instrumental Analytical Chemistry 2	2	3.2		5	Elucidation of Molecular Structure of Organic Compounds (ES)	2	3.2
6	Reaction Kinetics	3	4.8		6	Elective courses in own study program		
7	Chemical Thermodynamics	2	3.2		7	Elective courses of Study Program at UNDIP		
8	Metabolism and the Flow of Genetic Information	3	4.8		8	Elective courses outside UNDIP and Elective courses of the Kampus Merdeka		
9	Chemometric	2	3.2					
10	Elective courses in own study program							
11	Elective courses of Study Program at UNDIP							
12	Elective courses outside UNDIP and Internships							
	Total Compulsory Credits for Semester 5	20	32			Total Compulsory Credits for Semester 6	9	14.4

Semester 7					Semester 8			
No.	Subject	credits	ECTS		No.	Subject	credits	
1	Research Project 1: Chemical Experimentation	3	4.8		1	Research Project 2: Thesis	4	6.4
2	Real Work Lecture	3	4.8		2	Elective courses in own study program		
3	Entrepreneurship	2	3.2					
4	Elective courses in own study program							
5	Elective courses of Study Program at UNDIP							
6	Elective courses outside UNDIP and Internships							
	Total Compulsory Credits for Semester 7	8	12.8			Total Compulsory Credits for Semester 8	4	6.4