



# **ASIIN Seal & Eurobachelor®**

## **Accreditation Report**

**Bachelor's Degree Programmes**

***Biology***

***Chemistry***

***Mathematics***

***Physics***

Provided by

**Syarif Hidayatullah State Islamic University Jakarta,  
Indonesia**

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## A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for <sup>1</sup>	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) <sup>2</sup>
Sarjana Biologi	Bachelor's programme in Biology	ASIIN	BAN-PT, 15.11.20 - 05.11.25	10
Sarjana Kimia	Bachelor's programme in Chemistry	ASIIN, Euro-bachelor®	BAN-PT, 30.08.20 - 30.08.25	09
Sarjana Matematika	Bachelor's programme in Mathematics	ASIIN	BAN-PT, 23.08.22 - 23.08.27	12
Sarjana Fisika	Bachelor's programme in Physics	ASIIN	BAN-PT, 01.11.20 – 01.11.25	13
<b>Date of the contract:</b> 11.10.2022 <b>Submission of the final version of the self-assessment report:</b> 27.10.2023 <b>Date of the audit:</b> 23.04. – 25.04.2024				
<b>Expert panel:</b> Prof. Dr. Tilman Achstetter, University of Applied Sciences Bremen Prof. Dr. Hilda Assiyatun, Institut Teknologi Bandung Prof. Dr. Marc Brecht, University of Applied Sciences Reutlingen Prof. Dr. Erlia Narulita, Universitas Jember Dr. Frank-Peter Ritter, freelance expert, Wuppertal				

<sup>1</sup> ASIIN Seal for degree programmes;

<sup>2</sup> TC: Technical Committee for the following subject areas: TC 09 – Chemistry; TC 10 – Life Sciences; TC 12 – Mathematics; TC 13 – Physics

Jihan Wardani, Universitas Lampung, student	
<b>Representative of the ASIIN headquarter:</b> Rainer Arnold	
<b>Responsible decision-making committee:</b> Accreditation Commission for Degree Programmes	
<b>Criteria used:</b> European Standards and Guidelines as of 15.05.2015 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 Subject-Specific Criteria of Technical Committee 12 – Mathematics as of 09.12.2016 Subject-Specific Criteria of Technical Committee 13 – Physics as of 20.03.2020	

## B Characteristics of the Degree Programmes

a) Name	Final degree (original)	b) Areas of Specialization	c) Corresponding level of the EQF <sup>3</sup>	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Sarjana Sains Biologi	Bachelor of Science in Biology	-	6	Full time	no	8 Semester	209,66 ECTS / 144 CP	Fall Semester, 2002
Sarjana Sains Kimia	Bachelor of Science in Chemistry	-	6	Full time	no	8 Semester	221,97 ECTS / 147 CP	Fall Semester, 2002
Sarjana Sains Matematika	Bachelor of Science in Mathematics	-	6	Full time	no	8 Semester	216,84 ECTS / 148 CP	Fall Semester, 2002
Sarjana Sains Fisika	Bachelor of Science in Physics	-	6	Full time	no	8 Semester	209,41 ECTS / 144 CP	Fall Semester, 2002

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<sup>3</sup> EQF = The European Qualifications Framework for lifelong learning

For the Bachelor's degree programme Biology, UIN Jakarta has presented the following vision, mission, objectives, and graduate profile in the Self-Assessment Report:

<b>Vision</b>	To become a superior study program in the basic biological sciences and its application for environmental sustainability and
	human welfare that is integrated with Islam and Nationalism by 2030
<b>Mission</b>	<ol style="list-style-type: none"> <li>1. Organizing character education that is based on faith and devotion to Allah SWT.</li> <li>2. Organizing optimal education and teaching in Biology to produce competent graduates.</li> <li>3. Carrying out creative and innovative research in Biology for environmental conservation and human welfare.</li> <li>4. Carrying out community service activities related to biological applications to improve the community's quality of life.</li> <li>5. Carrying out collaboration with government and non-government study programs.</li> </ol>
<b>Objectives and Strategic Goals</b>	<ol style="list-style-type: none"> <li>1. Advance our research efforts in emerging fields of the biological sciences and develop nationally recognized learning centers for undergraduate and graduate curricula</li> <li>2. Increase the recruitment of and support for innovative and outstanding faculty who through research and teaching will develop the scientists, health professionals, government professionals, and mentors of the future</li> <li>3. Foster an exciting environment where teaching, research, and service will stimulate our students to serve as leaders of the people of this country, the nation, and the world</li> <li>4. Enrich our regional environment with the development of scientific programs to include opportunities for participation of our local communities</li> </ol>
<b>Graduate Profiles</b>	<ol style="list-style-type: none"> <li>1. Academics: Possess scholarly insights and communication skills to serve as a facilitators in academic activities in Biology areas</li> <li>2. Researchers: Possess the capability to conduct research in Biology areas and other relevant fields.</li> <li>3. Bioentrepreneurs: Demonstrate creativity and bio-entrepreneurial competencies in Biology and other relevant fields.</li> <li>4. Consultant: Able to act as an environmental consultant and other relevant fields including as a halal supervisor</li> </ol>

## B Characteristics of the Degree Programmes

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For the Bachelor's degree programme Chemistry, UIN Jakarta has presented the following vision, mission, objectives, and graduate profile in the Self-Assessment Report:

<b>Vision</b>	To become an excellent Chemistry Study Program at the regional, national, and international levels, capable of integrating the science of chemistry with adherence to Islamic and Indonesian values.
<b>Mission</b>	<ol style="list-style-type: none"><li>1. Implementing a higher education system that guarantees the implementation of IQF based chemistry learning.</li><li>2. Expanding and developing chemistry through research activities (fundamental and applied) while still being based on scientific, Islamic and Indonesian integration.</li><li>3. Making a real contribution to improving the quality of life of the community through the application of chemical science that is synergistic with the development and development of human resources and in harmony with the development of science and technology.</li><li>4. Equip students with knowledge, attitudes and skills in chemistry that are integrated with an understanding of religious knowledge and Islamic norms.</li></ol>

<p><b>Objectives</b></p>	<ol style="list-style-type: none"> <li>1. Producing chemistry graduates who have interpersonal skills in the fields of research, learning and entrepreneurship based on chemical science and technology.</li> <li>2. To produce chemistry graduates who have problem-based learning skills in supporting the resolution of cross-disciplinary globalization issues (environment, halal food, health, energy diversification) through the application of chemistry.</li> <li>3. Producing professional chemistry graduates with a personality base, mastery of knowledge and skills as well as attitudes and behavior in work based on Islamic values in accordance with their areas of expertise.</li> <li>4. To produce chemistry graduates who are creative, have integrity and have competitiveness both nationally and globally</li> </ol>
<p><b>Graduate Profiles</b></p>	<ol style="list-style-type: none"> <li>1. Scientist (Academics): Able to develop themselves professionally and continuously in studies to a higher level both (formal or informal) and provide alternative problem solving in general or inorganic chemistry (Composites, Catalysts, and nanomaterials), organic chemistry ( Chemical Natural &amp; Synthetic Organic Materials), physical chemistry (Polymers &amp; Energy), analytical and environmental chemistry, Food Chemistry and biochemistry, including its process of integration with Islamic values.</li> <li>2. Researcher: Able to act as a researcher, by carrying out a simple research process to be able to solve problems and produce simple discoveries, especially in the field of chemistry and be able to convey the results of their research in the form of scientific papers and publish them individually or as a team</li> <li>3. Chemistry Communicator (Consultant/Auditor): Able to act as an environmental consultant in general or other fields relevant to their scientific field or act as a halal supervisor as a new start to become an auditor, especially an auditor for halal products or other relevant fields.</li> <li>4. Chemical Safety Provider: Able to apply his knowledge in working in a chemical laboratory by paying attention to the safety and security of chemical laboratory work.</li> <li>5. Industrial Quality Control: Able to apply laboratory and instrumentation knowledge and skills in the chemical field and develop oneself professionally in solving problems in relevant applied fields in industry, especially as Quality control</li> <li>6. Technopreneurs: Able to develop and apply entrepreneurial principles in the relevant field of chemistry or general entrepreneurship.</li> </ol>



For the Bachelor's degree programme Mathematics, UIN Jakarta has presented the following vision, mission, objectives, and graduate profile in the Self-Assessment Report:

<b>Vision</b>	Developing an excellent educational program in the field of mathematics, enriched with Islamic and Indonesian cultural values, with a particular focus on the domains of applied mathematics, data science and actuarial science.
<b>Mission</b>	<ol style="list-style-type: none"> <li>1. Facilitating a framework rooted in faith, piety, moral and ethical values, while advocating for religious moderation.</li> <li>2. Establishing an educational curriculum in mathematics that is seamlessly interwoven with Islamic and Indonesian cultural values.</li> <li>3. Conducting research in mathematics, focusing on pure, applied, data science, and actuarial disciplines.</li> <li>4. Fostering collaborations with both domestic and international institutions to enhance the professional development of graduates.</li> <li>5. Engaging in community outreach initiatives to disseminate the research outcomes of faculty members and students.</li> <li>6. Enhancing student performance and participation in both local and international academic and extracurricular activities.</li> </ol>
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To produce graduates skilled in critical, creative, and innovative thinking, grounded in Islamic and Indonesian values, and proficient in pure and applied mathematics, data science, and actuarial analysis.</li> <li>2. Continuously enhance the quality of research outcomes within the disciplines of pure mathematics, applied mathematics, data science, and actuarial science.</li> <li>3. Foster a harmonious relationship between the academic constituents within the mathematics community and the wider society.</li> <li>4. Actively contribute to the government's initiatives aimed at elevating societal intelligence.</li> </ol>
<b>Graduate Profiles</b>	<ol style="list-style-type: none"> <li>1. Academics: prepare graduates for further academic pursuits or for entry into roles as research assistants.</li> <li>2. Data scientists associate: problem-solving data experts with rigorous data analysis methodologies.</li> <li>3. Junior Actuarial: able to assist the design of insurance products and the facilitation of company financial projections.</li> </ol>

## B Characteristics of the Degree Programmes

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For the Bachelor's degree programme Physics, UIN Jakarta has presented the following vision, mission, objectives, and graduate profile in the Self-Assessment Report:

<b>Vision</b>	To establish an excellent self-reliance Physics Study Program founded on a robust body of knowledge, incorporating scientific, Islamic, and Indonesian values.
<b>Mission</b>	1. Providing a moral foundation in the advancement of Physics with a harmonious blend of knowledge and religious values.
	2. Administering education grounded in a robust scientific understanding of Physics. 3. Conducting research and development endeavors within the field of Physics. 4. Contributing to the application of Physics to enhance the quality of life for society.
<b>Objectives</b>	1. Conducting effective education programs aimed at producing Physics graduates endowed with a competitive advantage. 2. Generating high-quality research and scholarly works that deliver positive contributions to the advancement of science and technology. 3. Plays an active role in engaging in community service activities rooted in the knowledge of Physics and its applications. 4. Enhancing effective, strategic, productive, and synergistic collaborations.
<b>Graduate Profiles</b>	1. Academics: Possess scholarly insights and communication skills to serve as facilitators in academic activities within the field of Physics. 2. Researchers: Possess the capability to conduct and advance research in the field of Physics. 3. Technopreneurs: Demonstrate creativity and entrepreneurial competencies in the development of basic Physics tools and instrumentation. 4. Industrial Practitioners: Possess the ability to contribute as practitioners in industries related to Physics.

## C Expert Report for the ASIIN Seal

### 1. The Degree Programme: Concept, content & implementation

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

**Evidence:**

- Self-Assessment Report
- Study plans
- Module descriptions
- Webpage UIN Jakarta: <https://www.uinjkt.ac.id/>
- Webpage Faculty of Science and Technology: Faculty of Science and Technology
- Webpage Bachelor of Biology: <https://fst.uinjkt.ac.id/en/s1-biologi>
- Webpage Bachelor of Chemistry: <https://fst.uinjkt.ac.id/en/s1-kimia>
- Webpage Bachelor of Mathematics: <https://fst.uinjkt.ac.id/en/s1-matematika>
- Webpage Bachelor of Physics: <https://fst.uinjkt.ac.id/en/s1-fisika>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

The experts base their assessment of the learning outcomes as provided on the websites and in the Self-Assessment Report of the four Bachelor's degree programmes under review.

For all four undergraduate programmes, UIN Jakarta has described vision, mission, objectives and graduate profile as well as Programme Learning Outcomes (PLO). While the vision, mission, objectives, and graduate profile rather general and refer to the vision and mission of the Faculty of Science and Technology, the PLO cover several specific competences students should acquire in their respective degree programme.

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

Graduates of the Bachelor's degree programme Biology should understand the basic biological processes and be capable of applying the scientific methods of the biological sciences. In addition, graduates should acquire relevant scientific knowledge in the different biological areas such as botany, zoology, biotechnology, microbiology, ecology, cell biology, molecular biology and related natural sciences (chemistry, physics) and mathematics. Furthermore, the students should master the principles and concepts of assessing biological resources and be able to design, perform, and assess independent laboratory experiments and fieldwork in biology. Moreover, students should learn how to collect, analyse, and interpret data to solve biological issues. Finally, students should be qualified to conduct long-life learning and work effectively, both individually and in a team, and to demonstrate a scientific, critical, and innovative attitude in biology learnings, laboratory works, and environmental care.

The programme's 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 in areas such as health sciences, biotechnology, and agriculture. Biology graduates have various occupational opportunities, which include working as a researcher, teacher/lecturer, entrepreneur, and they can find suitable jobs in industry, academia, or public institutions.

The experts 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 UIN Jakarta University, correspond with the competences as outlined by the SSC. They come to the following conclusions:

Chemistry graduates should acquire a basic knowledge of natural sciences and gain methodological and scientific competences in the chemical sciences (analytical chemistry, organic chemistry, inorganic chemistry, physical chemistry, food chemistry, and biochemistry) in order to learn about the structure, dynamics, and properties of chemicals as well as understand the theoretical principles and practical solutions in the field of identification, analysis, isolation, transformation, and synthesis of chemicals. Furthermore, graduates should also be able to carry out practical work in laboratories, to design and perform experiments and know how to operate common chemical devices. They also should be familiar with modern experimental methods of chemistry, the safe handling of chemicals, have a sound knowledge of safety and environmental and health 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.

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

Based on the Self-Assessment Report and the discussions during the online audit, the experts see that the graduates of the Bachelor's degree programme Chemistry acquire the subject-specific competences defined in the SSC of the Technical Committee 09 – Chemistry, Pharmacy. The programme teaches basic mathematical and scientific knowledge relevant to chemistry as well as in-depth knowledge of the core chemical subjects of inorganic, organic, physical, and analytical chemistry. Finally, students are given the opportunity to carry out practical chemical work and learn how to work independently and safely with chemicals in laboratory classes. The Bachelor's degree programme Chemistry thus fulfils the requirements for the award of the European chemistry label (Eurobachelor®), which has also been applied for. The experts are convinced that the intended qualification profile allows the graduates to take up an occupation, which corresponds to their qualification. The objectives and intended learning outcomes of the chemistry programme are reasonable and well founded.

Graduates of the Bachelors' degree programme Mathematics should acquire a profound knowledge of mathematics and gain methodological competences including mastering the principles of mathematical modelling, differential equations, numerical methods, and algorithm analysis. Students should also develop a mathematical, logical, and rigorous reasoning and the ability to design and analyse mathematical models and apply them in decision-making processes through both inductive and deductive logic. In addition, they should be familiar with different fundamental areas of mathematics (like algebra, discrete mathematics, mathematical computation and simulation, multivariable calculus, statistics, mathematical logic, and actuarial mathematics.). Finally, graduates should have a thorough understanding of the underlying mathematical concepts and be able of communicating and developing mathematical ideas effectively, both orally and in writing, including logical reasoning, generalization, abstraction, and formal proof.

Mathematics graduates usually follow two distinct careers: some work in academia or higher education as math researchers or teachers, while others work in private companies.

Job opportunities in the industry are manifold: some graduates have an interest in information technology and work as computer programmers, software developers, or data scientists. Others may take jobs in the financial sector and work as consultants or financial analysts. Some graduates pursue further degrees (Master or PhD) in mathematics or other scientific fields.

The intended learning outcomes of the Bachelor's degree programme Physics focus on conveying scientific methods for observing, understanding, analysing, and solving physical phenomena and problems. This includes that graduates should also acquire fundamental knowledge of mathematics, computer sciences, and natural sciences relevant to physics. Graduates should understand and be able to explain the basic concepts of physics, modern physics, statistical physics, core physics, solid-state physics, terrestrial physics, instrumental physics, and materials physics. Furthermore, graduates need to know how to conduct and prepare experiments, including the application of scientific methods and the process of identifying, analysing, and interpreting physics problems. In addition, graduates should be capable to apply and evaluate modern methods and instruments of studying and teaching physics by using information and communication technology. This means that they should be proficient in understanding, analysing, and solving problems in the area of physics using mathematical, computational, or technical methods and techniques.

Physics graduates have numerous job opportunities, because they are not restricted to a specific area, but are prepared for a science and technology oriented job market. As a result, physics graduates work in various sectors such as universities, research institutes, public and private agencies, information & communication companies, or high schools. Some open their own private business and others work in areas such as banking, insurance, retail, or other services.

Supplementing the subject-related qualification objectives, students of all four Bachelor's programmes should have adequate competences in oral and written communication skills, be capable of working autonomously as well as in a group, and be able to conduct research activities. Furthermore, they should have trained their analytical and logical abilities and should acquire communicative and language skills as well as develop a strategy for life-long learning.

During the audit, the experts gain the impression that UIN Jakarta is an open university, where Islamic values are the base of the education. Students from every faith are admitted, although the vast majority of students at UIN Jakarta are Muslims. Values as honesty and integrity can be applied to all kinds of academic education and thus to the undergraduate programmes, which are the subject of this report.

In summary, the experts are convinced that the intended qualification profiles of the four undergraduate programmes under review allow students to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that they meet the goals set for them.

The experts conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification and correspond sufficiently with the ASIIN Subject-Specific-Criteria (SSC) of the respective Technical Committees.

### Criterion 1.2 Name of the degree programme

**Evidence:**

- Self-Assessment Report
- Study plans

**Preliminary assessment and analysis of the experts:**

UNI Jakarta awards a Bachelor of Science (Sarjana Sains, S.Si.) to the graduates of the four undergraduate programmes.

The experts confirm that the names of all four Bachelor's degree programmes appropriately reflect the focus and content of the respective programme. Moreover, the English translation and the original Indonesian names of the programmes correspond with the intended aims and learning outcomes.

### Criterion 1.3 Curriculum

**Evidence:**

- Self-Assessment Report
- Study plans
- Module descriptions
- Academic Guideline
- Webpage UIN Jakarta: <https://www.uinjkt.ac.id/>
- Webpage Faculty of Science and Technology: Faculty of Science and Technology
- Webpage Bachelor of Biology: <https://fst.uinjkt.ac.id/en/s1-biologi>
- Webpage Bachelor of Chemistry: <https://fst.uinjkt.ac.id/en/s1-kimia>

- Webpage Bachelor of Mathematics: <https://fst.uinjkt.ac.id/en/s1-matematika>
- Webpage Bachelor of Physics: <https://fst.uinjkt.ac.id/en/s1-fisika>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

All four undergraduate programmes are offered by the Faculty of Science and Technology (FST) of Syarif Hidayatullah State Islamic University Jakarta. The Faculty of Science and Technology was established in 2002 and is one of the 13 faculties of UIN Jakarta. Currently, FST has 137 teachers and about 3611 students.

All undergraduate programmes at UIN Jakarta are designed as full time programmes 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. Besides these learning activities, there is one week for midterm exams and one week for final exams. The odd semester starts in August and ends January of the following year, while the even semester lasts from February to July.

A short summer semester is offered with a maximum workload of nine credit points. The summer semester is designed to assist students to repeat failed classes or to make up for missing credits in order to be able to complete the programme in time.

In tailoring the curriculum, the Faculty was guided by the academic requirements as detailed in the Decree of the Minister of National Education concerning the Core Curriculum of Higher Education.

The curriculum structure of the four programmes is very similar; however, the required credit points slightly differ. The Bachelor's degree programme Biology encompasses 144 CP (209.66 ECTS points), the Bachelor's degree programme Chemistry encompasses 147 CP (221.97 ECTS points), the Bachelor's degree programme Mathematics encompasses 148 CP (216.84 ECTS points), and the Bachelor's degree programme Physics encompasses 144 CP (209.41 ECTS points). The required credits are well within the required range of 144 to 150 CP for undergraduate programmes at UIN Jakarta.

The curriculum of all four undergraduate programmes under review consists of university requirements and compulsory and elective courses determined by the Faculty of Science and Technology. University requirements are courses that need to be attended by all undergraduate students at UIN Jakarta. There are eight university requirements with 21 CP: 1) Pancasila and Civic Education (3 CP), 2) Indonesian (3 CP), 3) Islamic Studies (4 CP), 5) Islam and Science (3 CP), 6) Qiroah and Worship Practicum (2 CP), 7) Arabic (3 CP), and 8) English (3 CP). These courses are 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 third to eighth semester. Elective courses can be taken from the third year of study. Students usually choose elective courses that relate to their thesis and/or their individual interests. During the eight semesters, students must also complete the undergraduate thesis (6 CP) and the community service (4 CP).

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

Curriculum reviews are conducted regularly and major changes can be implemented every five years. To this end, revision workshops are conducted, wherein external stakeholders are invited to offer insights into graduates’ quality and preparedness for the job market. If indications arise that the curriculum is not aligned with the requirements and objectives, adjustments are applied.

The expert team concludes that the imparted discipline-specific curricular content of all four programmes is adequate for the level and objectives of the programmes. The courses are suited for achieving the intended learning outcomes in a comprehensive manner, as specified in the module descriptions. The students and alumni interviewed by the experts during the audit underline that curricular contents and learning outcomes match their expectations with regard to their professional career. Moreover, the employers confirm during the discussion with the experts, that they are satisfied with the qualification profile of the graduates of all four undergraduate programmes.

Since UIN Jakarta has the goal to become internationally more visible and wants to further internationalising its degree programmes, the experts discuss with the programme coordinators and students if any classes at the Faculty of Science and Technology are taught in English. The programme coordinators explain that teachers usually use English teaching

materials (textbooks, slides, etc.) and some classes are offered in English, especially if there are international students attending. Additionally, students are encouraged to do their presentation in the Thesis Proposal Seminar in English, but so far, only around 10 % of the students follow this suggestion. Finally, international lecturers regularly give lectures at the Faculty of Science of Technology, some give only online-lectures, but there is also a programme for financing an actual visit at UIN Jakarta for international guest lecturers.

The students confirm in the discussion with the experts that they are satisfied with the organisation and content of the degree programmes. They only suggest offer some elective courses in the area of biomedicine for biology students. As UIN Jakarta has a medical faculty, it should be possible to open these courses for interested biology students.

In general, the experts confirm that all four degree programmes under review impart a broad range of competencies so that graduates can find suitable jobs. The experts gain the impression that the graduates of all degree programmes under review are well prepared for entering the labour market and have very good perspectives of finding adequate jobs in Indonesia.

#### *International Mobility*

The experts discuss with the programme coordinators whether there are windows of mobility for the students and point out that the international visibility and reputation of a university is increased by its research activities and the academic mobility of staff members and students.

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

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

Students' international academic mobility is supported by UIN Jakarta. For example, through scholarships from UIN Jakarta and International Students Mobility Awards (IISMA), a scholarship programme from the Ministry of Education and Culture starting from 2021. In addition, lecturers are encouraged to carry out joint research activities with international partners and to involve students in their projects.

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

Most of students from the Faculty of Science and Technology who participate at mobility programmes conduct short term stays abroad (two to three weeks) or study for a semester at other Indonesian universities or conduct an internship. Participation in international exchange programmes practically does not exist despite students' high interest. For example, chemistry students conduct internships in research institutions and laboratories across Indonesia. The biology programme participates at the Sakura Science Programme with support from JST (Japan Science Technology) and conducts student exchange programmes in collaboration with Japanese universities (Fukuoka University, Kyushu University, and Hiroshima University). The physics programme regularly hosts students from Africa (especially Gambia) and some mathematics students conducted oversea internships through the Association Internationale des Étudiants en Sciences Économiques et Commerciales (AIESEC).

The Ministry of Religious Affairs also provides funds for example for academic mobility programmes at UIN Jakarta (37 scholarships last year). This is a new programme, which was put into action last year, because as an Islamic university UIN Jakarta has only very limited access to the MBKM and IISMA mobility programmes. In total, there were 96 outbound activities of students for all of UIN Jakarta last year. UIN wants to increase the number of outbound students and hopes to receive more funds from the Ministry of Religious Affairs to achieve this goal. Additionally, UIN intends to open double degree programmes with universities in Australia and Malaysia.

The students confirm during the discussion with the experts that some opportunities for international academic mobility exist and that the credits acquired abroad are recognised at UIN Jakarta. 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. UIN Jakarta can provide only limited travel grants, while the demand from students is rising. The lack of financial support hinders students from joining the outbound programmes. National scholarships are available, but they are highly competitive, so only a few students receive them.

The experts understand these restrictions; however, they recommend increasing the effort to further internationalising UIN Jakarta by offering more places in international exchange programmes and more scholarships. In addition, the experts 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.

The experts emphasize that it is very useful for students to spend some time abroad already during their Bachelor's studies to improve their English proficiency, to get to know other educational systems, and to enhance their job opportunities.

In summary, the experts appreciate the effort to foster international mobility and support the faculty of Science and Technology to further pursuing this path. However, with respect to academic mobility there is still room for improvement.

#### **Criterion 1.4 Admission requirements**

##### **Evidence:**

- Self-Assessment Report
- Academic Guideline
- Webpage UIN Jakarta: <https://www.uinjkt.ac.id/>
- Webpage Faculty of Science and Technology: Faculty of Science and Technology
- Discussions during the audit

##### **Preliminary assessment and analysis of the experts:**

According to the Self-Assessment Report, admission procedures and policies for new students follow the national regulations in Indonesia. The requirements, schedule, registration venue, and selection test are announced on UIN Jakarta's webpage and thus accessible for all stakeholders.

There are three different ways by which students are admitted to the four Bachelor's programmes under review:

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

2. Joint Entrance Selection of State Universities (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national selection test is held every year for university candidates. It is a nationwide online test (subjects: mathematics, Bahasa Indonesia, English, physics, chemistry, biology, economics, history, sociology, and geography).

3. UIN Jakarta Independent Selection (Mandiri) students are selected based on specific criteria (academic merit, special needs, etc.) as defined by UIN Jakarta for prospective students that haven't been accepted through SNMPTN or SBMPTN.

The entrance requirements are prepared by the universities and then forwarded to the National Testing Agency for State Universities to be accessible to all SNMPTN and SBMPTN applicants.

The number of available study places is 80 students per year in the Bachelor's degree programmes Biology, Mathematics and Physics. The capacity of the Bachelor's degree programme Chemistry is somewhat higher with 120 students per year. The quotas are based on the number of teachers and the capacity of the available facilities.

The exact number of new students through the different admission paths is shown in the following table:

	Number of new students								
	2020			2021			2022		
	SNMPTN	SBMPTN	Mandiri	SNMPTN	SBMPTN	Mandiri	SNMPTN	SBMPTN	Mandiri
Biology	18	26	32	18	25	31	23	33	28
Chemistry	36	52	56	35	48	50	36	51	44
Mathematics	24	33	37	24	34	32	24	32	23
Physics	24	38	39	24	33	37	24	35	23

Table 1: Number of new students, Source: SAR UIN Jakarta

The average number of new students in the mathematics (88), physics (92), chemistry (136) and biology (78) undergraduate programmes from 2020 to 2022 was slightly above the maximum capacity. However, the number of applications exceeds the number of available study places by far. For example, the biology programme receives the most applications and has the lowest acceptance quota (7.7%). On the other hand, the chemistry programme

has a higher capacity, which results in an acceptance quota of 19.6 %. The physics programme has the highest acceptance quota (22.5 %) because it has the lowest number of applications. The acceptance quota of the mathematics programme (12.2 %) is in the middle. The experts see that all the Bachelor's degree programmes under review receive many applications and the demand is much higher than the number of available study places.

The exact numbers are shown in the following table:

	2020			2021			2022		
	Applica-tions	Admis-sions	Quota (%)	Applica-tions	Admis-sions	Quota (%)	Applica-tions	Admis-sions	Quota (%)
Biology	979	76	7,8	1198	77	6,4	951	88	9,2
Chemistry	652	144	22,1	873	140	16,0	627	137	21,9
Mathematics	908	94	10,4	808	94	11,6	501	83	16,6
Physics	608	101	16,6	411	98	23,8	245	86	35,1

Table 2: Number of applications and admissions, Source: SAR UIN Jakarta

Undergraduate students at UIN Jakarta have to pay tuition fees. The fees for each study programme vary according to the operational costs of learning. In addition, the fees for each student are also different according to the financial ability of their parents. The lowest fee in 2022 was IDR 400 000 (EUR 23) and the highest IDR 7 000 000 (EUR 404) per semester. This is quite low in comparison to other universities in Jakarta. The tuition fees for all four undergraduate programmes are the same.

The experts understand that applicants with colour-blindness are not admitted to the chemistry, physics, or biology programmes. They are aware that this is common practice at Indonesian universities, but are convinced that it is unnecessary. The experts emphasise that with modern tools and technology, colour-vision is no longer an important ability 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 of one student can be easily compensated by the other group members. Hence, they consider such an admission criterion too restrictive and expect UIN Jakarta to change it (see criterion 4.3).

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

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

### Criterion 1.5 Work load and credits

#### Evidence:

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

#### Preliminary assessment and analysis of the experts:

Based on the National Standards for Higher Education of Indonesia (SNPT), all four Bachelor's programmes under review use a credit point system called SKS.

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

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

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

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

According to the Self-Assessment Report, UIN Jakarta calculates 30 hours of students' total workload and uses a conversion factor of 1.51 between SKS and ECTS points. The reasoning behind this calculation is that one SKS equals 170 minutes (2.833 hours). As the semester lasts for 16 weeks  $2.833 \times 16 = 45,328$  hours per semester. This total workload is then divided by 30 to get the conversion factor:  $45.33 / 30 = 1.51$ . For practical courses, internships, community service and the final project, the conversion rate is different, because there the share of self-studies is higher.

The students' academic load refers to the total credit hours for the courses the student must register for in each semester. The work load for each student is determined by the Academic Guideline regulations; the minimum academic load is 14 SKS and the maximum academic load is 24 SKS per semester. The optional summer semester has a maximum academic load of 9 SKS. The students' maximum academic load is determined by the students' GPA (The higher the GPA, the more credits students can take.). Based on the previous semester's studies, students can consider the maximum workload for the next semester based on their results. Students' study plans for each semester must have the approval of an academic advisor. The normal burden of student learning is 18 - 20 SKS per semester. At the start of each semester, students are required to re-register and fill out their study plan via AIS (Academic Information System).

The experts point out that there can be no fixed conversion rate between SKS and ECTS points. Therefore, the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course. The experts point out that UIN Jakarta should follow the ECTS Users' Guide to determine the students' total workload. As described in the ECTS Users' Guide, the estimation of students' workload should include all learning activities. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations).

In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students. Typically, the estimated workload will result from the sum of:

- the contact hours for the educational component (number of contact hours per week x number of weeks)
- the time spent in individual or group work required to complete the educational component successfully (i.e. preparation beforehand and finalising of notes after attendance at a lecture, seminar or laboratory work; collection and selection of relevant material; required revision, study of that material; writing of papers/projects/dissertation; practical work, e.g. in a laboratory)
- the time required to prepare for and undergo the assessment procedure (e.g. exams)

Since workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from this estimate. Individual students differ: some progress more quickly, while others progress more slowly. Therefore, the workload estimate should be based on the time an "average



student” spends on self-studies and preparation for classes and exams. The initial estimation should then be verified via students’ questionnaires.

Since the workload of the students was only estimated by the programme coordinators and seems to be too low in comparison to the actual time needed by the students, the experts suggest re-evaluating the calculation of ECTS and engaging the students in verifying the weight of each module. This could e.g. be done by including a respective question in the course questionnaires. For this reason, it would be useful to include a respective question in the course questionnaires that are used for evaluating the quality of teaching and learning at the end of each semester.

The submitted data on the average length of studies for all programmes show, that several students, more than at other Indonesian university, study longer than the expected four years. The experts discuss this situation with the programme coordinators and learn that many students work besides studying, because the economic background of their parents is not very strong. Consequently, they have to earn additional money to finance their studies, which causes delays in their studies. Another reason are the restrictions of the COVID-pandemic that concerned students, which graduated in the last three years. The experts accept this explanation and see no cause for any requirements. However, they ask UIN Jakarta to provide statistical data on the number of drop-outs for all four programmes.

In summary, the experts confirm that all four undergraduate programmes have a high but manageable workload.

#### **Criterion 1.6 Didactic and Teaching Methodology**

##### **Evidence:**

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

##### **Preliminary assessment and analysis of the experts:**

The learning methods applied in the four Bachelor’s degree programmes are a combination of teacher-centred learning (TCL) such as classroom teaching/tutorials, demonstrations, and laboratory sessions, and student-centred learning (SCL) such as group discussions, case studies, cooperative and project-based learning, field studies, and laboratory work. Each course can use one or a combination of several teaching and learning methods.

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

Learning activities are carried out face-to-face in classrooms, laboratories, or during field trips. Assignments are submitted directly to the lecturer during a face-to-face meeting or via e-mail and other digital media systems. During the Covid 19 Pandemic, the infrastructure for online teaching was facilitated by UIN Jakarta, including digital platforms such as Zoom Meetings and Google Meet.

As the experts learn during the audit, approximately 40 % of the lectures are given online. In addition, there is a you tube channel to show tutorials for experiments and lectures so that students can prepare themselves. The respective content is also available via the Learning Management System of UIN Jakarta. Teachers are also using student centred learning methods as small group teaching. The experts appreciate if teachers apply interactive teaching methods and involve the students directly in the lectures; however, this information also needs to be included in the module descriptions. Currently the module descriptions mostly mention teaching in front of a black- or whiteboard.

In summary, the experts confirm that the study concept of all four undergraduate programmes comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

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

The experts appreciate that Biology students already have the opportunity to take some biomedical courses as electives and that is offer will be expanded. Students should get informed about this opportunity.

The experts confirm that UINJKT has updated its admission policy and formalised it in a Rector's Decree to allow colour-blind students to enrol in science study programmes. Detailed information about this updated policy is available on the university's website.

The experts thank UINJKT for providing statistical data regarding the number of students who drop out from the four study programmes. The experts see that only very few students drop-out so there is no issue to this respect.

With respect to the calculation of the students' workload the experts point out that UINJKT needs to update all documents if the number of ECTS points has been adjusted. They appreciate that UINJKZ has conducted surveys among students and teachers to this respect and the information in the module descriptions is now up-to-date. However, the study plans still include the old information, for example about the ECTS points of the Bachelor's thesis and the Seminar.

UINJKT provides updated module description, which now include revised information on the applied student-centred teaching methods, such as project-based learning, problem-based learning, collaborative learning, discussion-based learning, differentiated learning, and inquiry-based learning.

The experts consider criterion 1 to be mostly fulfilled.

## 2. Exams: System, concept and organisation

### **Evidence:**

- Self-Assessment Reports
- Module descriptions
- Academic Guideline

### **Preliminary assessment and analysis of the experts:**

As defined in the Academic Guideline, course evaluations are carried out in the middle of the semester (UTS) and at the end of the semester (UAS). Students' performance is not only evaluated based on the final examination (UAS) but assignments, quizzes, laboratory work, homework, mid-term exams (UTS), and mini projects may also contribute to the final grade of a course. Examinations are typically written exams, such as essays, problem-solving or case-based questions, and calculation problems. The form of the exams for every module is specified in the associated module description. Usually, there are two written exams in each course (besides the assignments, homework, quizzes, and presentations); the mid-term exam is conducted in 8th week of the semester and the final exam in 16th week.

Students, whose attendance at lectures is less than 75 % of the lecturer's attendance in one semester, are not entitled to take the final exam for the course concerned and are declared not to have passed the course. Undergraduate students, who obtain less than 24 credits or have a GPA of less than 2.00 at the end of the second semester, will be subject to academic sanctions in the form of dropping out of the study programme. Undergraduate students, who achieve than 48 SKS or have a GPA of less than 2.00 at the end of the fourth semester, also have to drop from the study programme.

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. The grading system is different for the internship, the community service, and the final project. The details, which assessment forms are used in these courses and how they contribute to the final grade, are described in the respective module descriptions. Students are informed about mid-term and final exams via the Academic Calendar.

If a student fails, she or he usually has to repeat the entire module in the following semester; it is usually not possible to retake just parts of the course or to just retake the final exam. However, mid-term exams can be repeated (remedy) but if a student fails the final exam, she or he has to retake the whole course in the next semester. The absence of students in the midterms and finals due to illness or otherwise is remediable by taking the exam later. Students, who cannot attend practical courses for acceptable reasons, can repeat the practicum later; the lecturers are responsible for the arrangement. Students with special needs are provided with support to enable them to participate in the academic activities and exams. There is a fixed period after the announcement of the final grades, during which students can ask for explanations and can appeal their grades.

In order to prepare for their final project, all undergraduate students need to attend the "Thesis Proposal Seminar", which is offered in the 6<sup>th</sup> semester of the biology and mathematics programme and in 7<sup>th</sup> semester of the chemistry and physics programmes. Students present their research plans for their final project in front of teachers and other students. The teachers will assess the feasibility of the proposal and decide if the project can be implemented or if improvements are necessary. Students work on their final project guided by two supervisors, who are assigned after the proposal seminar in the mathematics, phys-

ics and chemistry programmes, while the biology programme assigns the supervisors before the thesis proposal seminar. When a thesis supervisor has been appointed, students can further discuss their research proposals with the supervisor.

Every student in the four undergraduate programmes is required to do a final project (Bachelor's thesis). The Bachelor's thesis is a scientific work report written by students in the Bachelor's programme that focuses on a specific and usually consists of literature study, practical research, data analysis and presentation in figures or tables, and writing the thesis under the supervision of a teacher. Both the student and his /her supervisors might decide the topic and content of the project. In many cases, the lecturers offer particular topics connected to their research. The students have to present their results and defend them in front of the Thesis Examiner Team, which consist of the two supervisors and two additional examiners. Frequently, theses are carried outside UIN Jakarta; for example, students conduct their internship in a company and continue their work there in their final project. Additionally, there are several research institutions in Jakarta, where students can also conduct their Bachelor's thesis.

Relevant rules for organizing and conducting examination, assessment criteria, procedures in case of re-sits, disability compensation measures, proceedings in case of illness and other mitigating circumstances are transparently put into legal regulations. Students and lecturers confirm in discussions that both sides are aware of the regulations, and the experts have the impression that this system is operative with the aim to meet the requirements of the students as far as possible. In discussions, students describe the organization of examinations as transparent and responsive to their needs. This judgment explicitly includes the policy of retaking the course in the case of a failure.

By studying the Self-Assessment Reports and from discussions during the audit, the experts gain the impression that the methods used by the teaching staff at the Faculty of Science and Technology for assessing learning outcomes are mostly appropriate. The examination methods depend on the subject and the intended learning outcomes and range from mid-term and final examinations, laboratory works to subject-specific assignments and projects. The exams are usually written exams (e.g. quizzes, essay questions, calculation problems, or multiple-choice questions) there are only a few oral exams, for example for presenting the final project.

The students confirm during the discussion with the experts that all rules and regulations regarding exams, calculation of grades and pass rates as well as scheduling and re-sits are clear to them and are transparently described.

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

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

In summary, the experts confirm that the different forms of examination used are competence-oriented and are suitable overall for verifying the achievement of the intended learning outcomes as specified in the respective module descriptions. The form of examination is determined individually for each course and published in the respective module description. The forms of examination are based on the main content of the modules and the level is appropriate for the respective degree programme.

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

UINJKT does not comment on this criterion in its statement.

The experts consider criterion 2 to be fulfilled.

### 3. Resources

<b>Criterion 3.1 Staff and Staff Development</b>
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**Evidence:**

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

**Preliminary assessment and analysis of the experts:**

At UIN Jakarta, 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 or an associate professor

needs to hold a PhD degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position.

According to the Self-Assessment Report, there are 13 academic staff members in the Bachelor's degree programme Mathematics, among whom 31 % hold doctoral degrees, while 69 % have a Master's degree. In the Bachelor's degree programme Physics, there are also 13 academic staff members, and their distribution of educational qualifications mirrors that of the Mathematics programme Out of the 14 academic staff members within the Bachelor's degree programme Chemistry, 43 % have a Master's degree, while 57 % hold doctoral degrees. Among the 13 academic staff members teaching in the Bachelor's degree programme Biology, 62 % have doctoral degrees, while the remaining 38% have a Master's degree. Within the last year, two teachers achieved the level of full professors in physics and chemistry. This process takes longer at UIN in comparison to other Indonesian universities, because two ministries (Ministry of Higher Education and Ministry of Religious Affairs) are involved, but now the regulation has been changed with a faster procedure, which will lead to more promotion to full professorship.

The composition of the teaching staff in the four undergraduate programmes according to their academic position is shown in the following table:

NO	Qualification	Mathematics Study Program		Physics Study Program		Chemistry Study Program		Biology Study Program	
		number	%	number	%	number	%	number	%
1	Professor	1	7.7	1	7.7	1	14.3	2	14.3
2	Associated Professor	3	23.1	3	23.1	3	21.4	5	35.7
3	Assistant Professor	4	30.8	5	38.5	5	35.7	7	50
4	Lecturer	5	38.5	4	30.8	5	35.7	0	0.0
	Total	13	100	13	100	14	100	14	100

Table 3: Number and academic rank of teachers, Source: SAR UIN Jakarta

The ratio between the number of academic staff members and students is 1:30 in the Bachelor's degree programme Mathematics, 1:27 in the Bachelor's degree programme Physics, 1:35 in the Bachelor's degree programme Chemistry, and 1:25 in the Bachelor's degree

programme Biology. This ratio fulfils the national requirements in Indonesia for higher education as described in the Decree of the Ministry of Research, Technology, and Higher Education No 2/2016.

In addition to the academic staff members, the four undergraduate programmes employ several non-academic personnel such as librarians, technicians (laboratory staff), administrative staff, and support staff. The total number of non-academic staff is 53. The Faculty of Science and Technology manages all supporting staff members. The role of laboratory technicians is to assist lecturers in carrying out practical activities and helping to prepare research experiments (starting from laboratory setup, materials preparation, equipment use, and maintenance).

Details of the academic qualifications of the teachers are described in the staff handbook, which is accessible via the webpage of the Faculty of Science and Technology. 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.

The experts point out that the share of teachers with a PhD is rather low, especially in the physics and mathematics programmes. By international standards, every university teacher should have a doctoral degree. The experts acknowledge that the Faculty of Science and Technology is trying to increase the number of teachers with a PhD degree. For example, UIN Jakarta supports and encourages teachers with a Master's degree in joining PhD programmes, either in Indonesia or abroad (e.g. to Japan and Australia). The experts support these efforts but point out that the Faculty of Science and Technology should further increase the number of teachers with a PhD degree, especially if they have the strategic goal of becoming one of the leading Islamic research universities in Indonesia. This goes hand in hand with increasing the research activities and scientific output.

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

During the audit, the experts inquire how high the teaching load is and if enough opportunities are offered to the academic staff members to conduct research activities. They learn that teachers at the Faculty of Science and Technology have an average teaching load of around 12 hours per week and a total workload of 12 to 16 credits; the national maximum



is 16 credits. One credit is equivalent to 170 minutes of work per week with about one hour contact time. How much time staff members actually devote to research is different from teacher to teacher, because working hours are spent flexibly for teaching, research, and community service.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes. However, if the plans to increase the number of students were put into practice, it would also be necessary to increase the number of teachers on the same scale. Otherwise, it would not be possible to provide the required teaching resources for a higher number of students. Additionally, the current laboratory capacity does not allow for a higher number of students. As it is, the laboratories are already fully used and to accommodate more students, new laboratories would have to be build (see criterion 3.2).

### *Staff Development*

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

Young staff members with a Master's degree are encouraged to pursue doctoral studies (usually abroad). To support this policy, UIN Jakarta provides foreign language training and organises seminars presenting scholarships from various sources. In addition, UIN has an "acceleration programme" to support associate professors on their way to reaching full professorship. The respective workshops mostly concentrate on advising teachers on writing and submitting scientific paper for publication to international journals.

During the audit, the experts inquire if the teaching staff has the opportunity to spend time abroad and to participate in international projects. They learn that UIN Jakarta provides funds for joining international conferences. Moreover, teachers have the opportunity to receive funding from the Ministry of Religious Affairs. The funding covers conference and

publication fees, and expenses for accommodation and traveling. The teachers are in general satisfied with the existing opportunities and the available financial support. However, they point out that the opportunity for a semester long paid leave (sabbatical) does not exist and they would appreciate if UIN Jakarta would open up this opportunity. The experts support this suggestion and point out that allowing teachers to go on paid leave to follow their research interests would also foster research output.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UIN Jakarta, their opportunities to further improve their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars; even a sabbatical leave is possible.

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

#### *Student Support*

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

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

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

Students who prepare their theses 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 final project outside UIN Jakarta. The role of the final project supervisor

is to guide students in accomplishing their final project, e.g., to finish their research and complete their final project report.

All students at UIN Jakarta have access to the Learning Management System. The students' profiles (student history, study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via this digital platform.

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

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

### **Criterion 3.2 Funds and equipment**

#### **Evidence:**

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

#### **Preliminary assessment and analysis of the experts:**

Basic funding of the undergraduate programmes and the facilities is provided by UIN Jakarta and FST. The financial sources are government funding which contribute to around 24% to the total budget and which cover the salaries of all state employees. The rest of UIN's funds are derived from students' tuition fees and industry funding through cooperations. Additional funds for research activities can be provided by UIN Jakarta or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them. Funding from industry is still very limited and UIN wants to increase that share. One goal is to establish a green campus at UIN; to this end, the university cooperates with companies (e.g. solar energy) in this area and wants to expand these collaborations.

The annual budget of the Faculty of Science and Technology is determined at university level. Every year, the university's management ask the faculties to prepare a budget for the next period. The budget planning is presented and discussed during the management meetings at faculty level, and subsequently forwarded to UIN's management.

All teachers have also the opportunity to apply for research funds through the Directorate General of Higher Education of Education Department of Republic Indonesia (DIKTI). Additional funds are also available from several other foundations and institutions from Indonesia and abroad as well as from joint collaborations with third parties.

The provided budget allows the Faculty of Science and Technology 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 academic staff members emphasise that from their point of view, both undergraduate programmes under review receive sufficient funding for teaching and learning activities.

Learning facilities and infrastructure for mathematics, physics, chemistry, and biology programmes include lecture halls, computer laboratories, lecturer rooms, courtrooms, administration rooms, libraries, e-learning and multimedia room. In addition, there is also the main courtroom (for meeting needs), four theatre rooms (for workshops and seminars), journal house (faculty journal management facility), health room, place of worship for women and men, green open space, disabled facilities, and student discussion room.

The Bachelors' degree programme Biology has five laboratories for practical activities with a capacity of 20 persons each: Microbiology laboratory, Basic Biology Laboratory, Ecology Laboratory, Physiology Laboratory, and a Tissue Culture Laboratory. In addition, there is a Green House.

There are six laboratories, which are used in Bachelors' degree programme Chemistry. Each laboratory can accommodate 20 students. The chemistry study program occupies the most extensive area compared to other study programmes within the Faculty of Science and Technology. The biology and chemistry laboratories are equipped with a table made of porcelain stone, chairs made of stainless steel, a safe for storing tools and glassware, shelves above and below the stone table made of aluminium, air conditioning, a medicine box, and a hand sanitizer dispenser. There are also fire extinguishers, personal safety equipment, and hazardous and toxic waste bins.

The facilities for the Bachelors' degree programme Physics include five laboratories, which are located on the second floor of the Integrated Laboratory Center (PLT) building. These laboratories are: Basic Physics Laboratory, Advanced Physics Laboratory, Materials Physics Laboratory, Instrumentation Physics Laboratory, and Geophysics Laboratory. The laboratories each have a capacity of 20 students, only the Instrumentation Physics Laboratory, which is used for electronics experiments, and the Geophysics Laboratory have a capacity of only 10 students.

The Bachelors' degree programme Mathematics has four computer laboratory rooms (Computational Mathematics Laboratory, Programming and Database Laboratory, Data Science Laboratory, and Electronic Learning Center). Each laboratory has different seating capacities and is equipped with high performance networked PCs with a variety of software (Python, RStudio, Octave, etc.), LCD projectors, and printers. The Computational Mathematics Laboratory is equipped with 42 computer units for students and the Programming and Database Laboratory is equipped with 40 computer units for students. Both laboratories are used mainly for courses that require practice using computer programmes such as "Basic Programming", "Introduction to Information and Communication Technology", "Elementary Statistics", "Numerical Methods", "Exploratory Data Analysis", "Data Structures and Algorithms", "Database Systems", "Introduction to Data Mining", "Introduction to Statistical Computing", "Introduction to Financial Computing", and "Introduction to Actuarial Computing".

The Data Science Laboratory has a capacity of 40 people and is equipped with nine high-speed computers. It is primarily used as a research laboratory to support students and lecturers to conduct and expand new and ongoing research. Remote access to the lab computers is possible, allowing students and staff to remotely connect and utilize software installed on the high speed on computers. The Electronic Learning Center (ELC) has capacity of 20 people and is equipped with a computer and math reference books. The ELC serves as a research laboratory, where students can work when conducting a research project.

In order to manage resources efficiently, all four degree programmes develop annual work plans and prepare budgets to support lectures and laboratory work. Coordination meetings are regularly held in order to identify all materials and equipment needed for practice and lectures.

Furthermore, there is the Career Development Centre at UIN, which offers help to find suitable internships, announces job vacancies, organises job fairs, and offers courses to develop soft skills. Finally, there are several supporting facilities such as Mosque, University Hospital, Student Dormitory, Cafeteria, Sport Facilities, and Language Center.

The most critical aspect the experts observe during the visitation of the facilities, in particular the Integrated Laboratory Center, is the fact that there is very limited research capacity in the biology, chemistry, and physics programmes due to missing research laboratories. Teaching labs with sufficient equipment and working places are available, but these facilities are not sufficient for conducting research activities. In addition, the teaching labs are rather small and allow only for 20 students conducting experiments in them at the same time. Only an environmental and a food research lab exist at the Integrated Laboratory Center, otherwise, students and teachers have to collaborate with other universities and

research institutions in Jakarta to conduct their research activities and to do their final projects. This suboptimal situation certainly does not comply with the university's vision of becoming a leading Islamic research university:

“Organizing quality and superior research-based higher education for scientific development, social transformation and increasing the nation's competitiveness.”

These problems may be solved with the construction of a new building for the Faculty of Science and Technology, which will house the laboratories. The new building will increase the capacity for education and research significantly. It should be available in 2029 and will have enough space for modern laboratories. While designing the laboratories, the Faculty of Science and Technology should make sure that enough working places and instruments are available so that students can do the experiments in groups of not more than two to three. The peers recommend that the professors are involved in the detailed planning. The instrumentation should enable the usage of modern techniques, both in teaching and research. Moreover, the new laboratories should follow international standards with respect to safety measures – as mentioned below. As the experts consider the research capacity at the Faculty of Science and Technology to be limited, they would like to know, what the main research areas of the programmes are and ask UIN Jakarta to provide this information with its statement on this report.

Finally, the experts point out that some important devices such as a HPLC are not available in the laboratories of the Faculty of Science and Technology. Thus, purchasing these instruments should be included in furnishing the laboratories in the new building. As a conclusion, the experts expect that UIN Jakarta provides a concept and a financial plan, how dedicated research laboratories can be established within the next five years for the biology, chemistry, and physics programmes.

This will also help to give students more hands-on experience in the laboratories. Currently, chemistry students conduct the experiments in the laboratories classes in groups of three to five, mostly because the working places in the laboratories are limited. Under such conditions, the learning outcome is difficult to reach and each single student cannot gain enough practical experience. There is also an increased risk of emergencies due to lack of space. The current situation does not allow for an increase in the number of students. This should be postponed until the new building is available.

Another issue from the experts' point of view is the fact that the biology and chemistry laboratories do not follow international safety standards. The experts point out that the basic personal protective equipment that needs to be available to all persons working in laboratories includes safety goggles, laboratory coats, and hand gloves. Students should be trained in the right use of the equipment (e.g. the need to change contaminated gloves

before touching a door handle or a keyboard, which also might be used by persons not wearing safety gloves). Students should have to sign a document indicating to have participated in the safety instructions and these safety instructions should be conducted at the beginning of every semester.

The personal protective equipment should be stored separately from street clothes and lockers should be available for this. In addition, working safety hoods should be available in all labs (with exhaust to the outside) and chemicals and solvent containers should be labeled properly and be stored in special lockers with exhausts leading outside the labs. No glass bottles with chemical should be placed on the floor and all kind of gas should be stored outside of the building in a special secured area and delivered with pipes into the building. Working with heat plates or other heating systems requires to have an exhaust system above the hot-surface or -equipment. At least a hood with a chimney that is connected to the outside of the building is necessary.

Moreover, there should be emergency exits signs and posters with the safety regulations. Finally, it is important that all students know how sterile work in a laboratory is conducted and that at least once year a safety inspection of the laboratories should be done. This does not only include wearing gloves, but also hair should be covered and pipette tips need to be changed for different reagents. The teachers need to make sure that all students are familiar with sterile work, especially if they are preparing students to be become personnel in diagnostic laboratories.

The experts also point out that all laboratories should have a biosafety classification and respective signs should be put up on the respective doors on the outside of each laboratory. Even more important is the fact that the experts found in one of the storage rooms a deep freezer (-18 degrees) with the label "Biohazard" and a list of microorganisms. On this list, several pathogens such as *Pseudomonas aeruginosa*, *Escherichia coli*, and *Candida albicans* (without mentioning the strains and their classifications) were listed. These pathogens cannot be handled nor stored in an BSL-1 environment - likely the classification of these labs - despite the fact that this room is said not to be accessible for students. Undergraduate students are not allowed to work with such organisms. It will not be sufficient to remove and inactivate those microorganisms, the fridge/ freezer combination needs to be decontaminated in an appropriate manner.

With respect to the instruments, the experts point out that it would be useful if the Faculty of Science and Technology would have a dedicated budget for repairing and/or replacing broken equipment. This way, teachers would not have to wait for the next year's budget plan to apply for funds for replacing and/or repairing the instruments. Moreover, regular (annual) service/control and corresponding documentation is needed for both the autoclave and the laminar flow cabinets. In case of the autoclave trial runs with control samples

(commercially available), must be done regularly (once per year). The clean benches HEPA filters (toxic waste!) must be changed regularly; likewise, air-flows must be controlled regularly (once per year). Finally, the autoclave seems too small in particular for biological waste treatment. Such an instrument would be better placed in a 'technical room' and not 'among' the students. For the physics programme, the experts suggest to offer an experiment in the physics lab right from the start, in which digital data acquisition plays a central role. This could either be through a mobile phone app like PhyPhox or through specialised sensors which are available from basic lab suppliers. This would help in preparing students for the digital future.

Another issue is the fact that there are no toilets (restrooms) for handicapped persons.

The experts discuss with the teachers about the possibility of establishing research stations both in marine and terrestrial environments. So far, UNI Jakarta has many programmes that are conducted in Kubing Mountain of Geopark Belitung, The National Park of Ujung Kulon, Gintung Lake (near our campus), and the National Park of Gede Pangrango Mountain, including research, monitoring, and field trips. Mainly biology students go there to learn and get practical experience in the field. However, there are no research stations at these places, which would be very helpful in supporting learning and research activities such as monitoring the ecosystem regularly. Moreover, this way it would be easier to help local people to enhance their knowledge about biological and environmental issues. To this end, the experts encourage UIN Jakarta to establish research stations in the field.

The students also express their satisfaction with the library and the available literature there. Remote access via VPN is possible and UIN Jakarta offers access to several scientific digital databases such as ScienceDirect and Scopus, so that teachers and students access current scientific papers, e-books, and papers. However, the student would like the library of the Faculty of Science and Technology to prolong its opening hours, currently it closes at 4 pm. The experts support this wish.

In summary, the expert 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 experts after the comment of the Higher Education Institution regarding criterion 3:**



The experts thank UINJKT for providing some short videos on the labs in the different departments. However, it is necessary to provide a detailed concept and financial plan on the equipment and available devices in the new research labs in each department.

With respect to the safety measures in the biology and chemistry labs, the experts see that some improvements have already been implemented. Nevertheless, they expect UINJKT to verify and document that all laboratories follow international safety standards.

The experts consider criterion 3 to be partly fulfilled.

## 4. Transparency and documentation

### Criterion 4.1 Module descriptions

#### Evidence:

- Self-Assessment Report
- Module descriptions
- Webpage Bachelor of Biology: <https://fst.uinjkt.ac.id/en/s1-biologi>
- Webpage Bachelor of Chemistry: <https://fst.uinjkt.ac.id/en/s1-kimia>
- Webpage Bachelor of Mathematics: <https://fst.uinjkt.ac.id/en/s1-matematika>
- Webpage Bachelor of Physics: <https://fst.uinjkt.ac.id/en/s1-fisika>

#### Preliminary assessment and analysis of the experts:

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

After studying the module descriptions of the four Bachelor's degree programmes under review, the experts confirm that they include all necessary information about the persons responsible for each module, the teaching methods and work load, the awarded credit points, the intended learning outcomes, the content, the applicability, the admission and examination requirements, and the forms of assessment, and details explaining how the final grade is calculated. However, the experts point out that the literature reference in the module descriptions need to be updated. Moreover, the module descriptions for the courses "Final project" (UIN 6000312), "Seminar" "UIN 6000313", "Community Service" (UIN6000206), and "Internship" (UIN6000207) are missing in the module handbooks of the biology and chemistry programmes. This should be corrected.

#### **Criterion 4.2 Diploma and Diploma Supplement**

**Evidence:**

- Self-Assessment Report
- Sample Diploma for each degree programme

**Preliminary assessment and analysis of the experts:**

Students who successfully complete one of the four undergraduate programmes under review receive a Bachelor Degree Certificate, Academic Transcript, and Diploma Companion Certificate (SKPI) upon graduation.

The experts see that the provided sample Diploma Supplements (SKPI) do not follow the European template and do not include all required information. For example, the GPA is not included and the documents mention a study length of 14 semesters.

The Diploma Supplement should follow the internationally recognised European template and should inform about the structure and content of the respective degree programme, provide information about the individual performance as well as statistical data regarding the final grade, and include information about the composition of the final grade according to the ECTS-Users' guide. This allows the reader to categorise the individual result. The experts expect that all graduates of the degree programmes are provided with a standardised Diploma Supplement. This makes academic qualifications comparable and raises the chances for succeeding on the job market or for applying for further studies abroad.

#### **Criterion 4.3 Relevant rules**

**Evidence:**

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

**Preliminary assessment and analysis of the experts:**

The experts confirm that the rights and duties of both UIN Jakarta and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the course material at the beginning of each semester. However, the experts point out that the English homepage of the programmes should include the essential information about the programme (intended learning outcomes, study plan with links to the module descriptions). To this end, UIN Jakarta should update the webpages.

The experts discuss with the programme coordinators about the admission of students with disabilities, particularly colour-blindness, 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 experts understand that applicants with colour-blindness are not admitted to the chemistry, physics, or biology programmes. They are aware that this is common practice at Indonesian universities, but are convinced that it is unnecessary. The experts emphasise that with modern tools and technology, colour-vision is no longer an important ability 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 of one student can be easily compensated by the other group members. Hence, they consider such an admission criterion too restrictive and expect UIN Jakarta to change it.

Finally, the experts notice that in the study plan of the physics programme, semester VIII is missing. For this reason, UIN Jakarta should submit an updated study plan for the physics programme and update all relevant documents accordingly.

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

The experts confirm that UINJKT has submitted updated sample Diploma Supplements for all four programmes, which are aligned with the European template and include all required information. In a similar way, UINJKT has also updated the homepages of the four programmes, which now include the essential information about the degree programmes (complete module handbook, intended learning outcomes).

The experts consider criterion 4 to be mostly fulfilled.

## **5. Quality management: quality assessment and development**

**Evidence:**

- Self-Assessment Report
- Academic Guideline
- Quality Manual
- Discussions during the audit

### **Preliminary assessment and analysis of the experts:**

The highest academic board at UIN Jakarta is the University Senate, which is headed by the Rector and responsible for implementing and supervising all academic processes at UIN Jakarta. The Dean is the head of the Faculty of Science and Technology with the authority and responsibility for administering all teaching and learning activities within the faculty. Finally, for each degree programme there is the Head of Study Programme, who is responsible for implementing all educational activities within the respective degree programme.

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

This system relies on internal (SPMI) as well as external (SPME) quality assurance. SPMI encompasses all activities focused on implementing measures for improving the teaching and learning quality at UIN Jakarta. SPME focuses on both national and international accreditations. Every degree programme and every Higher Education Institution in Indonesia has to be accredited by the National Accreditation Board of Higher Education / Badan Akreditasi Nasional Perguruan Tinggi (BAN-PT).

The policy on quality assurance is developed on university level by the Quality Assurance Institute (LPM) and monitored on faculty level by the Quality Assurance Group (GJM).

Internal assessment of the quality of the degree programmes is mainly provided through student, alumni, and employer surveys. The students give their feedback on the courses by filling out a questionnaire online each semester. Students assess various aspects such as students' understanding, lecturer's responsiveness, course delivery, lecturer's proficiency, explanation of course objective, and references in each enrolled course. The data generated from students' feedback is then analysed by LPM, which then forwards the results to the Vice Dean of Academic Affairs. As the experts consider the feedback of alumni and employers important for the quality assurance of the four degree programmes, they would like to receive samples of the alumni and employer questionnaires and ask UIN Jakarta to provide this information with its statement on this report.

Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on UNI's digital platform. The experts point out that there should be a regular and institutionalised survey on students' workload in every course. For example, this could be done by including a respective question in the course questionnaires that students have to fill out at the end of each semester (see Criterion 1.4).

The results of the course questionnaires are discussed during the annual Strategic Plan Meetings, which exist on university, faculty, and programme level. Students and employers

are invited to these meetings. However, the experts point out that it is necessary to close the feedback cycles and to directly inform the students about the results of the course questionnaires in every course. This way, students can get first-hand information on any issues and on the measures planned to improve the situation.

In addition, UIN Jakarta regularly conducts alumni and employer surveys. By taking part, alumni can comment on their educational experiences at UIN Jakarta, their professional career, and can give suggestions how to improve the programme. Employers can give their feedback on the qualification profile and the needs of the job market. UIN has a real time system to assess alumni and employer feedback. In addition, there are WhatsApp-groups for the different programmes to keep in direct contact with the graduates. Finally, there is an alumni association at UIN Jakarta, which organises, for example, alumni talks.

During the audit, the experts learn that students are not represented in the university's boards, neither on university nor on faculty or programme level. There is a students' senate with an executive board, but this senate mostly concentrates on organizing extracurricular activities. Thus, students are not directly involved in the decision-making processes. The experts are convinced that it would be very useful to have student members in the different boards on faculty and programme level. For this reason, they recommend that students' representatives should be members of the boards at UIN Jakarta at least on faculty and programme level and be actively involved in the decision-making processes for further developing the degree programmes. For example, it would be useful to make students' representatives members of the GJM.

The experts discuss with the representatives of UIN's partners from public institutions, and private companies whether there are regular meetings with the partners on faculty 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 and take part at the Strategic Plan Meetings. The experts appreciate that UIN Jakarta stays in close contact with its alumni and the employers. However, no official advisory board exists. As the experts consider the input of external stakeholders to be very important for the further development of the degree programmes, they recommend establishing an advisory board at the faculty of Science and Technology in order to discuss regularly the needs of the job market and new developments in the area of sciences and mathematics. The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university.

Including students, professionals, and employers in the different boards will help further developing the degree programmes.

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

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

The experts appreciate that UINJKT has already followed their recommendations and has established an advisory board with external stakeholders at the Faculty of Sciences and Technology. Additionally, according to the Rector's Decree, students are now members of the Quality Assurance Group.

The experts thank UINJKT for explaining that the results of the satisfaction questionnaires are communicated back to the student through two channels. Firstly, internal forums are organised within each department providing a platform for direct engagement and discussion of the findings. Secondly, to ensure broader accessibility and transparency, the faculty publishes the aggregated results and subsequent action plans on its official website. The experts are satisfied with this approach.

The experts consider criterion 5 to be 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:

- Statistical data on the number of drop-outs for all four programmes.
- Information on the research areas in all four programmes.
- Updated study plan, including semester VIII, for the physics programme.
- Sample questionnaires of alumni and employer surveys.

# E Comment of the Higher Education Institution (01.07.2024)

## 1. The Degree Program: Concept, content & implementation

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

No comment

### Criterion 1.2 Name of the degree programs

No comment

### Criterion 1.3 Curriculum

1. **Peer Review Preliminary Report:**

*Suggestion on elective courses in the area of biomedicine for Biology students.*

**UIN Jakarta Response:**

The opportunity for biology graduates to work in the biomedical field is supported by currently available several elective courses including bio cellular, biomaterials and nanotechnology, virology, parasitology and immunology. In addition, students can take cross-faculty elective courses at the medical faculty, including human anatomy physiology and biomedical engineering. In the future, Biology study programs will revise the curriculum by adding more biomedical supporting courses.

2. **Peer Review Preliminary Report:**

*Recommendation on more venues option and longer period on student mobility program.*

**UIN Jakarta Response:**



The curriculum developed at the Faculty of Science and Technology in Jakarta, particularly for the Mathematics, Physics, Chemistry, and Biology study programs, is structured in such a manner as to enable students to participate in student mobility programs for a duration of up to six months during their seventh semester without impacting their graduation timeline. Evidence of this support can be found in the University's Official Decree regarding guidelines for the Student Mobility program ([Evidence 1.3.A](#)).

UIN Jakarta prioritizes international cooperation with various universities and other institutions across multiple countries. Currently, there are 46 active Memoranda of Understanding (MoUs) and Memoranda of Agreement (MoAs) with diverse countries and institutions, including research institutes, universities, public organizations, and governments (details can be found in [Evidence 1.3.B](#)).

Students can participate in student mobility programs with various partner institutions of UIN Jakarta, as mentioned previously, or with other new ones. More comprehensive information regarding student mobility at UIN Jakarta, particularly within the Faculty of Science and Technology, can be found in [Evidence 1.3.C](#).

#### **Criterion 1.4 Admission requirements**

##### ***Peer Review Preliminary Report:***

*The experts emphasize that with modern tools and technology, color-vision is no longer an important ability even in laboratories.*

##### ***UIN Jakarta Response:***

We have considered the experts' insights regarding admission applicants with color-blindness to Physics, Chemistry, and Biology study programs. As a result, we have updated our policy and formalized it in a Rector's Decree ([Evidence 1.4.A](#)) to allow color-blind students to enroll in science study programs. Detailed information about this updated policy has been disseminated and is available on our website (<https://fst.uinjkt.ac.id/en/color-blind-policy>).

#### **Criterion 1.5 Workload and Credits**

##### ***1. Peer Review Preliminary Report:***

*The experts point out that there can be no fixed conversion rate between SKS and ECTS points. Therefore, the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course.*

***UIN Jakarta Response:***

The Faculty of Science and Technology have recalculated the conversion of SKS to ECTS in accordance with ASIIN's recommendation that ECTS calculations should be done for each course individually. To ensure the accuracy and relevance of these calculations, we conducted surveys with students and held discussions with course instructors.

The results of these calculations are presented in [Evidence 1.5.A](#), which includes the ECTS conversion table. Additionally, we have integrated these results into our module handbook ([Evidence 1.5.B](#)) and curriculum, which are available on our website.

- Matematika: <https://math.uinjakarta.id/curriculum/>
- Fisika: <https://fisikauinjakarta.id/informasi-kurikulum/>
- Kimia: <https://kimia-uinjkt.id/kurikulum/>
- Biologi: <https://biologi-uinjkt.id/curriculum/>

**2. Peer Review Preliminary Report:**

*The experts ask UIN Jakarta to provide statistical data on the number of dropouts for all four programs.*

***UIN Jakarta Response:***

We have provided statistical data regarding the number of students who drop out from our four study programs. This data includes information for the past 5 years and can be found in Table 1.

**Table 1.** Summary on the number of drop-out students from 2019-2023.

Years	The number of Drop Out			
	Mathematics	Physics	Chemistry	Biology
2023	1	0	0	0
2022	0	0	0	0
2021	0	1	0	2
2020	0	1	1	0
2019	0	0	0	0

**Criterion 1.6 Didactic and Teaching Methodology**

**Peer Review Preliminary Report:**

*The experts appreciate if teachers apply interactive teaching methods and involve the students directly in the lectures; however, this information also needs to be included in the module descriptions. Currently the module descriptions mostly mention teaching in front of a black- or whiteboard.*

*The Outcome-Based Education (OBE) teaching method with a student-centered learning approach has been implemented in classroom activities, though it is not yet explicitly stated in the updated module handbook (attachment to the revised module handbook for each course).*

**UIN Jakarta Response:**

We have revised our module handbook with the involvement of our teaching staff. Several student-centered teaching methods that we frequently practice in our classes have been added, such as: project-based learning, problem-based learning, collaborative learning, discussion-based learning, differentiated learning and inquiry-based learning. The updated module handbook can be viewed in [Evidence 1.5.B](#) and on our program's website.

- Matematika: <https://math.uinjakarta.id/curriculum/>
- Fisika: <https://fisikauinjakarta.id/informasi-kurikulum/>
- Kimia: <https://kimia-uinjkt.id/kurikulum/>
- Biologi: <https://biologi-uinjkt.id/curriculum/>

## 2. Exams: System, concept and organisation

<b>Criterion 2 Exams: System, concept and organisation</b>
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No comment

## 3. Resources

<b>Criterion 3.1 Staff and Staff Development</b>
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**Peer Review Preliminary Report:**

*The experts point out that the share of teachers with a PhD is rather low, especially in the physics and mathematics programmes.*

**UIN Jakarta Response:**

**Mathematics Department:**

The Mathematics Study Program currently employs 12 full-time lecturers and 2 adjunct lecturers. As of 2024, 5 lecturers have attained doctoral degrees, and 2 more have been accepted to pursue doctoral studies (Muhammad Manaqib at ITB & Muhaza Liebenlito at INSA French – [Evidence 3.1.A](#)). Furthermore, other junior lecturers are expected to continue their studies in 2025. Consequently, in the near future, the majority of lecturers in the Mathematics Study Program will hold doctoral degrees.

**Physics Department:**

The Physics Study Program has 13 lecturers, of which 4 have already obtained doctoral degrees (Prof. Dr. Ambran Hartono, M.Si, Dr. Sutrisno, M.Si, Dr. Agus Budiono, M.T, and Dr. Sitti Ahmiatri Saptari, M.Si). In 2024, there are already 3 lecturers pursuing their doctoral studies: Anugrah Azhar, M.Si (Theoretical Physics at The University of Manchester), Elvan Yuniarti, M.Si (Physics at IPB University), and Tati Zera, M.Si (UIN Syarif Hidayatullah Jakarta) ([Evidence 3.1.B](#)).

To enhance the doctoral education status, the Physics Study Program has recommended 3 lecturers to continue their education: Biaunik Niski Kumila, M.S (Planned study: Material Science at Qatar University), Praditiyo Riyadi, M.Si (Geophysical Engineering at Bandung Institute of Technology (ITB)), and Muhammad Nafian, M.Si (Physics at Gadjah Mada University (UGM)). The Physics Study Program will also be opening lecturer positions requiring doctoral degrees soon or at the latest by 2025. We predict that by 2029, 90% of the lecturers in the Physics Study Program will have doctoral degrees.

<b>Criterion 3.2 Funds and equipment</b>
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1. **Peer Review Preliminary Report:**

*Funding from industry is still very limited and UIN wants to increase that share. One goal is to establish a green campus at UIN; to this end, the university cooperates with companies (e.g. solar energy) in this area and wants to expand these collaborations.*

**UIN Jakarta Response:**

UIN Jakarta places significant emphasis on collaboration with industry as a crucial component of the university's triple helix development model, fostering a mutually beneficial symbiosis with government and private sector entities. This commitment is evidenced by the numerous partnerships established by UIN Jakarta, particularly within the Faculty of Science and Technology. The faculty has forged collaborative relationships with a diverse range of industries, including mining, banking, healthcare, and community organizations ([Evidence 1.3.B](#)).

Collaborative endeavors represent substantial financial value. Table 2, presented below, illustrates select examples of partnerships between various industries and the Faculty of Science and Technology. Details of these funding can be found in ([Evidence 3.2.A](#))

**Table 2.** Sample of cooperation between industry and Faculty of Science and Technology and its financial values.

No	Funding Activities	Source	Nominal (IDR / USD)
1	Provision of Data inventory, Remastering and Cutting for WPIV Blocks	REPSOL EXPLORATION WPIV S.L	209,200,000 IDR / 12,678.78 USD
2	The Provision of Data Inventory, Remastering and Cutting for Aru and West Papua IV Blocks	REPSOL EXPLORATION ARU S.L	506,800,000 IDR / 30,715.15 USD
3	Preparation of verification report for all the ata in the Andaman III PSC	REPSOL EXPLORATION WPIV S.L	2,597,500,000 IDR / 157,424.24 USD
4	SAF Feedstock from Non-standard Coconut in Indonesia	Green Power Development Corporation of Japan	192,000,000 IDR / 12,800 USD

5	3D ine License	Edu Blast Inc	700,000,000 IDR / 42,424.24 USD
6	VR Simulator	Anugra Interaktif Software Inc	100,000,000 IDR / 6,060.60

## 2. Peer Review Preliminary Report:

*The most critical aspect the experts observe during the visitation of the facilities, particularly the Integrated Laboratory Center, is the fact that there is very limited research capacity in the biology, chemistry, and physics programmes due to missing research laboratories.*

### **UIN Jakarta Response:**

#### **Chemistry:**

Expanded Laboratory Space ([Evidence 3.2.F](#)) : We have increased the research laboratory space by adding four new rooms, each with a capacity of 10–20 people. These rooms are dedicated to specific research areas:

1. *Catalyst and Polymer Research.*
2. *Environmental Research.*
3. *Food and Natural Product Chemistry Research, and*
4. *Computational Chemistry.*

These laboratories are equipped for comprehensive research activities, including sample preparation, and testing with instruments available in the integrated laboratory center, such as AAS, UV-Vis, GCMS, FTIR, HPLC, and LCMS. Additional instruments are also accessible through the Pharmacy Study Program at UIN Syarif Hidayatullah.

#### **Physics:**

The Physics Study Program has prepared various facilities and infrastructure to meet the needs of research laboratories. The research laboratories are located on the second floor of the Integrated Laboratory Center (PLT) building. Three research laboratories have been set up, namely:

1. *Geophysical Modelling Research Laboratory*
2. *Materials Physics Research Laboratory*
3. *Instrumentation Physics Research Laboratory*

The brief description of this research lab is as follows:

- *Geophysical Modelling Research Laboratory:* is intended for lecturers and students who will conduct research on geophysics. Research that can be conducted in this lab includes geophysical data modelling for subsurface mapping in fields such as oil and gas, mining, and disaster studies. This research laboratory can accommodate up to 8 people.

- *Materials Physics Research Laboratory*: is intended for lecturers and students who will conduct research on material physics. Research that can be conducted in this lab includes synthesis and characterization of engineered materials such as microwave absorbers, heavy metals, electrical field studies on cathodes and anodes for batteries, as well as thermoelectric materials and superconductors. This research laboratory can accommodate up to 8 people.
- *Instrumentation Physics Research Laboratory*: is intended for lecturers and students who will conduct research on instrumentation physics. In this lab, there are devices for the design and construction of physical instrumentation such as sensors and microcontrollers for lecturers' and students' research. The main research in this lab is the design and construction of tools related to the latest technologies such as Artificial Intelligence (AI) or environmentally friendly detection technologies. This research laboratory can accommodate up to 6 people.

The availability of hardware and software in the research lab is as follows:

- *Geophysical Modelling Research Laboratory*:

Hardware:

1. Geoelectrics
2. Audio Magnetotelluric (ADMT)
3. 4 Computers
4. 1 Printer

Software:

1. OpendTect
2. Oasis Montaj
3. IRIS Syscal Junior Resistivity
4. QGIS
5. Python

- *Materials Physics Research Laboratory*:

Hardware:

1. XRD
2. Miller High Energy Milling
3. Furnace Themo Scientific
4. Dehidrator Tiross
5. Hot Plate Magnetic Stirer
6. Analitical Balance
7. 4 Computers

Software:

1. GSAS
2. Origin Pro
3. Vesta
4. BURAI
5. Quatum Ekspreso
6. Python

- *Instrumentation Physics Research Laboratory:*

Hardware:

1. Power Supply
2. Electronic Components
3. Sensors
4. Arduino
5. Raspberry Pi
6. Atmega
7. Oscilloscope
8. 4 Computers

Software:

1. Tinkercad
2. Scratch
3. Arduino IDE
4. Python

The documentation of the physics program's research laboratory is available in a video that has been included on the following website: <https://fisikauinjakarta.id/> and ([Evidence 3.2.D](#))

**Biology:**

The biological research laboratory is on the 4th floor of PLT ([Evidence 3.2.E](#)). Research equipment has been placed in the new room, namely:

1. *Molecular Biology research lab:* PCR equipment, Spectrophotometry, Fluorescence Microscope, Electrophoresis etc.
2. *Physiology research lab:* Tissue culture cabinet, and laminar air flow.
3. *Ecological Research Lab:* WQC, Equipment grab, wet and dry collection cabinet, and plankton net.

The availability of laboratory equipment will be provided separately along with the latest documentation of the research laboratory rooms that have been prepared.

A Biology research laboratory will be built. The proposal for building a research laboratory has been submitted to the Indonesian Ministry of Religion ([Evidence 3.2.B](#))

3. **Peer Review Preliminary Report:**

*Another issue from the experts' point of view is the fact that the biology and chemistry laboratories do not follow international safety standards.*

**UIN Jakarta Response:**

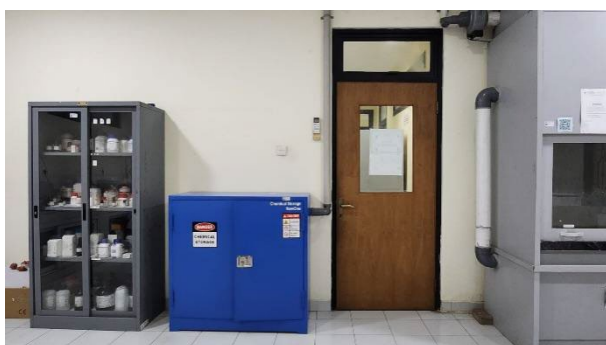
**Chemistry:**

Based on the suggestions and recommendations of the ASIIN 2024 assessors, and referring to the Guideline for Laboratory Safety Standards (2021-09-17), the Chemistry Study



Program, FST UIN Syarif Hidayatullah Jakarta has implemented the following improvements and added facilities for both short and long-term needs:

1. Personal Protective Equipment (PPE): We provide personal protective equipment, including lab coats, gloves, and safety glasses, to all students, lecturers, lab staff, and visitors (Figure 3.2.A).
2. Chemical Storage: Chemicals, both solids and solutions, are now stored according to specific criteria in a materials cupboard connected to a fume cupboard/Fume hood (Figure 3.2.B, Figure 3.2.C).



**Figure 3.2.B.** Chemical Storage.



**Figure 3.2.C.** Cleaned Storage.



**Figure 3.2.A.** Personal Protective Equipment (PPE).

3. Gas Cylinder Safety: Gas cylinders have been relocated outdoors to enhance safety and security in compliance with the Laboratory Safety Standards.
4. Safety Training: Regular safety training and socialization programs are conducted for all lab users, with a focus on new students and those beginning practicum. Regular chemical safety and security training is also provided to lecturers and lab staff (further detail is available at <https://kimia-uinjkt.id/seminar-k3-by-lmc-meningkatkan-peranan-k3-sebagai-kunci-praktikan-yang-terakreditasi/>).

5. Long-term Laboratory Facilities: Plans for additional research laboratory facilities include the construction of Integrated Laboratory Centre Building 2 in the Cikuya Tangerang area, with a target completion year of 2029 ([Evidence 3.2.C](#)).

**Biology:**

There are several Biology research stations that have been initiated and become places for routine research and monitoring for biology students and lecturers. The location is: at the Mount Kubing Geosite Belitung and Cikuya research station. We attach Research station development proposal for further detail ([Evidence 3.2.C](#))

An oversight has been identified regarding the labeling of the culture storage refrigerator in our laboratory. The note affixed to the door is outdated and does not accurately reflect the current contents of the refrigerator, as evidenced by the attached photographic documentation. The refrigerator presently contains isolates of *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Candida albicans*, *Saccharomyces cerevisiae*, and *Bacillus subtilis*.

Upon investigation, it was determined that the *S. aureus* and *E. coli* isolates were procured in the form of Vitroids™, which are Certified Microorganism Standards utilized for quantitative and qualitative control purposes. These isolates, set to expire in December 2024, were designated as non-hazardous in the accompanying purchase documentation. Consequently, they are deemed safe for use until the specified expiration date. The *P. aeruginosa* isolate present in the refrigerator has been confirmed to be non-viable, as corroborated by the minutes provided by the MIPA laboratory coordinator.

Regarding the *C. albicans* isolate, it is classified as a suspected commensal pathogen. This strain was acquired in 2006 for microbiology practicum activities conducted by students from the Faculty of Medicine at UIN Jakarta. Considering the assessors' comments, which we appreciate as valuable feedback for our evaluation process, we have implemented several measures to address this issue.

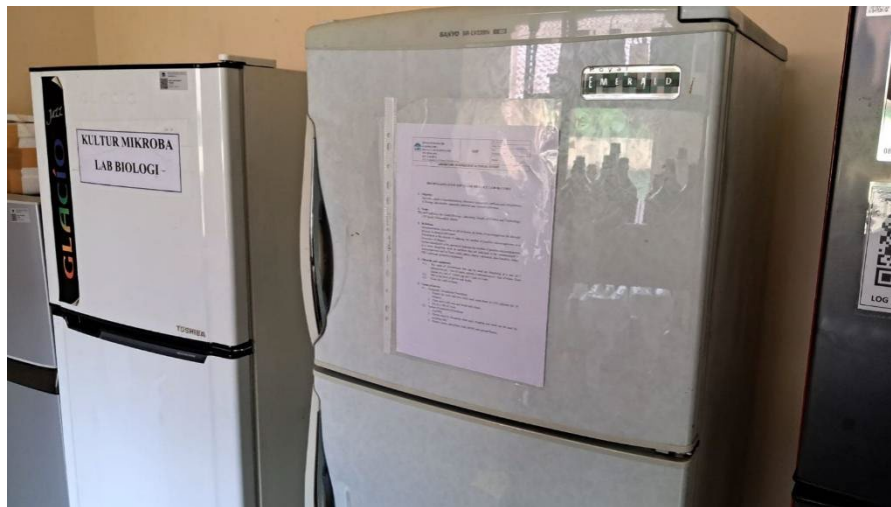
Firstly, we have removed the *C. albicans* isolate from the FST Microbiology Laboratory and transferred it to the Microbiology Laboratory at FK UPN, which meets BSL-2 criteria. This transfer was documented through a formal handover process and Material Transfer Agreement (MTA), with the understanding that the recipient institution may utilize the isolate for research or teaching purposes (Figure 3.2.D).



**Figure 3.2.D.** Handover process.

Secondly, we have conducted a thorough decontamination of the storage refrigerator in accordance with established protocols. The Standard Operating Procedure (SOP) and video documentation of this process are attached for reference.

Thirdly, we have revised the SOP for research conducted in the Microbiology Laboratory to explicitly state: "The PLT Microbiology Lab does not permit the storage or use of pathogenic isolated cultures." The updated SOP document is appended to this communication (Figure 3.2.E).



**Figure 3.2.E.** The refrigerator is equipped with safety SOP.

Lastly, it is noteworthy that the remaining isolates, *S. cerevisiae* and *B. subtilis*, were obtained directly from environmental sources and are not suspected to be pathogenic. Therefore, these isolates are considered safe for storage within the refrigerator and storage facilities of the FST Microbiology Laboratory.

In conclusion, we have taken prompt and comprehensive action to address the identified discrepancies and enhance our laboratory safety protocols. We remain committed to maintaining the highest standards of laboratory practice and biosafety.

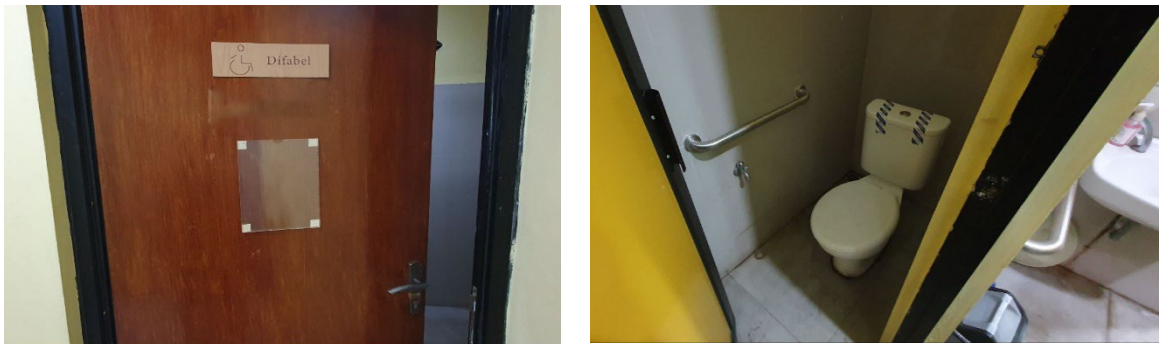
**4. Peer Review Preliminary Report:**

*Another issue is the fact that there are no toilets (restrooms) for handicapped people.*

***UIN Jakarta Response:***

At the time of the ASIIN accreditation visit, the Faculty of Science and Technology at UIN Jakarta had already established two accessible toilets for individuals with disabilities: one located on the first floor of the faculty building and another on the first floor of the integrated laboratory building. Both toilets were equipped with safety standards appropriate for persons with disabilities. However, during the ASIIN visitation, these toilets had not yet been properly labeled.

As of June 2024, both accessible toilets have been properly labeled and are functioning as intended (Figure 3.2.F).



**Figure 3.2.F.** Diffable Toilets at Faculty of Science and Technology and the Integrated Laboratory Building.

## 4. Transparency and documentation

### Criterion 4.1 Module descriptions

#### **Peer Review Preliminary Report:**

The module descriptions for the courses “Final project” (UIN 6000312), “Seminar” “UIN 6000313”, “Community Service” (UIN6000206), and “Internship” (UIN6000207) are missing in the module handbooks of the biology and chemistry programmes.

#### **UIN Jakarta Response:**

Module handbook for final assignment courses, including theses, seminar results, and colloquiums, has been added to the module handbook (Evidence 1.5.B) and on Biology’s Department website.

- Final Project: <https://biologi-uinjkt.id/module-handbook-2/#UIN6000312>;  
<https://kimia-uinjkt.id/handbook/#UIN6000312>
- Seminar: <https://biologi-uinjkt.id/module-handbook-2/#UIN6000313>;  
<https://kimia-uinjkt.id/handbook/#UIN6000313>
- Community Service: <https://biologi-uinjkt.id/module-handbook-2/#UIN6000206>;  
<https://kimia-uinjkt.id/handbook/#UIN6000206>
- Internship: <https://biologi-uinjkt.id/module-handbook-2/#UIN6000207>;  
<https://kimia-uinjkt.id/handbook/#UIN6000207>

### Criterion 4.2 Diploma and Diploma Supplement

#### **Peer Review Preliminary Report:**

The experts see that the sample Diploma Supplements provided (SKPI) do not follow the European template and do not include all required information. For example, the GPA is not included, and the documents mention a study length of 14 semesters.

#### **UIN Jakarta Response:**

The Faculty of Science and Technology at UIN Jakarta expresses its profound appreciation for the constructive feedback provided by the ASIIN assessors regarding the format of the diploma supplement. In response to this valuable input, UIN Jakarta has swiftly implemented the necessary improvements to enhance the clarity and comprehensiveness of the document. The revised diploma supplement, which reflects these modifications, demonstrates the institution's commitment to maintaining international standards and

ensuring that graduates are equipped with a globally recognized credential. The updated version of the diploma supplement, incorporating all suggested enhancements, is now available for review in Table 3. This prompt action underscores the faculty's dedication to continuous improvement and its responsiveness to expert recommendations in aligning with best practices in higher education documentation.

**Table 3.** Samples of revised Diploma Supplements from each department.

No	Graduate Programme	Sample Diploma Supplements (SKPI)
1.	Mathematics:	<u>Evidence 4.2.A</u>
2.	Physics	<u>Evidence 4.2.B</u>
3	Chemistry	<u>Evidence 4.2.C</u>
4.	Biology	<u>Evidence 4.2.D</u>

#### Criterion 4.3 Relevant rules

##### 1. *Peer Review Preliminary Report:*

*The experts confirm that the rights and duties of both UIN Jakarta and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the course material at the beginning of each semester. However, the experts point out that the English homepage of the programmes should include the essential information about the programme (intended learning outcomes, study plan with links to the module descriptions). To this end, UIN Jakarta should update the webpages.*

##### **UIN Jakarta Response:**

In response to the expert panel's observations, UIN Jakarta has diligently addressed the recommendation to enhance the accessibility and transparency of essential programme information on its English-language web pages. The institution acknowledges the importance of providing clear, comprehensive details about each programme's intended learning outcomes and study plans, complete with links to module descriptions. We are pleased to report that this issue has been fully resolved. The updated information is now readily available on the respective departmental websites. Prospective and current students, as well as other stakeholders, can access this crucial information for the programme at:

- Mathematics: <https://math.uinjakarta.id/curriculum/>

- Physics: <https://fisikauinjakarta.id/informasi-kurikulum/>
- Chemistry: <https://kimia-uinjkt.id/kurikulum/>
- Biology: <https://biologi-uinjkt.id/curriculum/>

**2. Peer Review Preliminary Report:**

*The experts notice that in the study plan of the physics programme, semester VIII is missing.*

***UIN Jakarta Response:***

The Physics Study Program has revised the semester learning plan by adding the eighth semester and moving the seminar and thesis to the eighth semester. The results of these revisions can be seen in the following [Physics Module Handbook](#) and on the Physics Study Program's website <https://fisikauinjakarta.id/informasi-kurikulum/>.

## **5. Quality management: quality assessment and development**

<b>Criterion 5. Quality management: quality assessment and development</b>
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**1. Peer Review Preliminary Report:**

*As the experts consider the feedback of alumni and employers important for the quality assurance of the four-degree programmes, they would like to receive samples of the alumni and employer questionnaires and ask UIN Jakarta to provide this information with its statement on this report.*

***UIN Jakarta Response:***

The Faculty of Science and Technology at UIN Jakarta emphasizes feedback from students, alumni, and industry partners as a crucial part of its quality assurance process. Recognizing the value of stakeholder input, the faculty has implemented a comprehensive survey system to gather insights and opinions from these key groups. These meticulously designed questionnaires, tailored for students, alumni, and industry representatives, are readily accessible through the faculty's official website at <https://fst.uinjkt.ac.id/en/academic-surveys/>. This digital platform ensures ease of access and encourages widespread participation in the feedback process.

In line with our commitment to continuous improvement, we would like to emphasize that the valuable input received from our stakeholders—students, alumni, and industry partners—undergoes a rigorous analysis process. The insights gleaned from this analysis are then systematically addressed and implemented as part of our quality enhancement

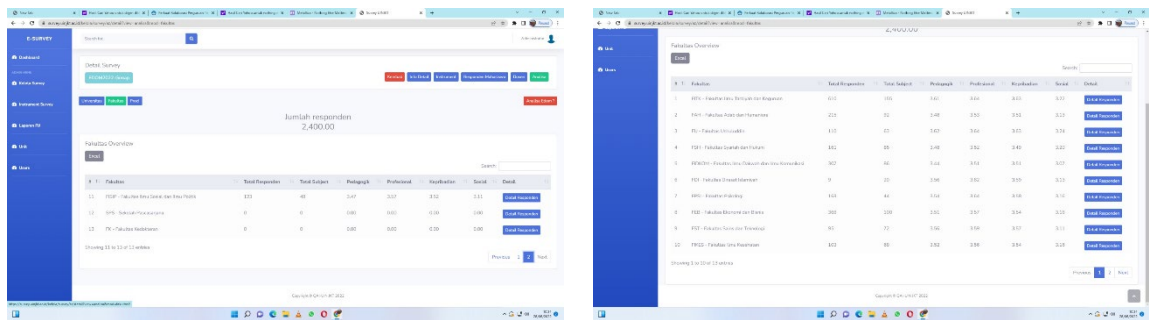
initiatives. Furthermore, to maintain transparency and close the feedback loop, we disseminate the outcomes and subsequent actions taken to all relevant parties within our academic community. Detailed documentation of this process, referred to as [Evidence 5.A](#), along with a comprehensive overview of our quality assurance feedback mechanisms, is publicly available on our website at <https://fst.uinjkt.ac.id/en/quality-assurance-feedback>. This approach underscores our dedication to fostering an environment of open communication and collaborative growth within the faculty.

**2. Peer Review Preliminary Report:**

*Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on UNI’s digital platform. The experts point out that there should be a regular and institutionalized survey on students’ workload in every course. For example, this could be done by including a respective question in the course questionnaires that students have to fill out at the end of each semester (see Criterion 1.4).*

**UIN Jakarta Response:**

UIN Syarif Hidayatullah Jakarta conducts EDoM (*Evaluasi Dosen oleh Mahasiswa*, or Student Evaluation of Lecturers) on a semesterly basis. All students are required to complete this evaluation, which is conducted anonymously. Our evaluation system is integrated with the *Academic Information System (AIS)* - <https://ais.uinjkt.ac.id>, necessitating student account credentials for access. To demonstrate our consistent implementation of this practice, we have provided screenshots of the system interface, which can be seen in the Figure 5.A below:



**Figure 5.A.** Institutionalized Student Surveys.

**3. Peer Review Preliminary Report:**

*The results of the course questionnaires are discussed during the annual Strategic Plan Meetings, which exist on university, faculty, and programme level. Students and employers are invited to these meetings. However, the experts point out that it is necessary to close*



*the feedback cycles and to directly inform the students about the results of the course questionnaires in every course. This way, students can get first-hand information on any issues and on the measures planned to improve the situation.*

***UIN Jakarta Response:***

The Faculty of Science and Technology at UIN Jakarta employs a comprehensive approach to gathering, analyzing, and disseminating student feedback as part of its commitment to continuous improvement and quality assurance. Through meticulously designed questionnaires, the faculty systematically collects valuable insights from its student body across all departments. These questionnaires serve as a critical tool in assessing various aspects of the academic experience, including but not limited to curriculum design, teaching methodologies, and campus facilities.

Following the collection of feedback, the faculty conducts a thorough analysis of the data, identifying trends, areas of excellence, and opportunities for enhancement. The results of this analysis are then strategically communicated back to the student population through two primary channels. Firstly, internal forums are organized within each department—Mathematics, Physics, Chemistry, and Biology—providing a platform for direct engagement and discussion of the findings (we utilize WhatsApp Groups and-or channel). Secondly, to ensure broader accessibility and transparency, the faculty publishes the aggregated results and subsequent action plans on its official website (<https://fst.uinjkt.ac.id/en/quality-assurance-feedback>). This dual approach to dissemination ensures that students are well-informed about how their feedback contributes to the ongoing development and refinement of the faculty's academic offerings and operational processes.

**4. *Peer Review Preliminary Report:***

*During the audit, the experts learn that students are not represented in the university's boards, neither on university nor on faculty or programme level.*

***UIN Jakarta Response:***

The Faculty of Science and Technology at UIN Jakarta extends its sincere gratitude to the ASIIN assessors for their valuable recommendation to incorporate student representation within the faculty's advisory board. In response to this constructive feedback, the faculty promptly established a new advisory council. This restructured body now includes student members, ensuring that the student perspective is directly represented in faculty governance and decision-making processes. The swift implementation of this suggestion underscores the faculty's commitment to inclusive governance and responsiveness to external evaluation. Detailed information regarding the composition and mandate of this newly formed advisory board can be found in [Evidence 5.B](#), which provides comprehensive documentation of this significant institutional development.

## Evidences

1. **Evidence 1.3.A:** University's Official Decree regarding guidelines for the Student Mobility program [[Link](#)].
2. **Evidence 1.3.B:** UIN Jakarta International Network 2024 [[Link](#)].
3. **Evidence 1.3.C:** List of students participating in student mobility program [[Link](#)].
4. **Evidence 1.4.A:** Rector Decree on Color Blind Students [[Link](#)].
5. **Evidence 1.5.A:** ECTS conversion table for Mathematics, Physics, Chemistry, and Biology [[Link](#)].
6. **Evidence 1.5.B:** Update module handbook for Mathematics, Physics, Chemistry, and Biology [[Link](#)].
7. **Evidence 3.1.A:** Letter of Acceptance for doctoral degree [[Link 1- Manaqib](#), [Link 2 - Muhaza](#)].
8. **Evidence 3.1.B:** Student ID for doctoral degree of physics lecturer [[Link](#)].
9. **Evidence 3.2.A:** Invoices of cooperation activities with some industries [[Link](#)].
10. **Evidence 3.2.B:** Submitted Ciputat Research lab Proposal [[Link](#)].
11. **Evidence 3.2.C:** Submitted Cikuya Research lab Proposal [[Link](#)].
12. **Evidence 3.2.D:** Physics Research Laboratory Documentation [[Link](#)].
13. **Evidence 3.2.E:** Biology Research Laboratory Documentation [[Link](#)].
14. **Evidence 3.2.F:** Chemistry Research Laboratory Documentation [[Link](#)].
15. **Evidence 4.2.A:** Mathematics Diploma Supplements (SKPI) with the European template [[Link](#)].
16. **Evidence 4.2.B:** Physics Diploma Supplements (SKPI) with the European template [[Link](#)].
17. **Evidence 4.2.C:** Chemistry Diploma Supplements (SKPI) with the European template [[Link](#)].
18. **Evidence 4.2.D:** Biology Diploma Supplements (SKPI) with the European template [[Link](#)].
19. **Evidence 5.A:** Rector Decree about Member of the Quality Assurance Group, Faculty of Science and Technology [[Link](#)].
20. **Evidence 5.B:** Dean Decree on Mathematics, Pyshics, Chemistry, and Biology's Departments Advisory Boards [[Link](#)].

## F Summary: Expert recommendations (26.07.2024)

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

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

### Requirements

#### For all degree programmes

- A 1. (ASIIN 1.5) Make sure that the information about the awarded ECTS points is presented consistently in all documents.

#### For the Bachelor's programmes Biology, Chemistry, and Physics

- A 2. (ASIIN 3.2) Provide a concept and a financial plan, how dedicated research laboratories can be established within the next five years and what instruments and devices will be available there.

#### For the Bachelor's programmes Biology and Chemistry

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

### Recommendations

#### For all degree programmes

- E 1. (ASIIN 1.3) It is recommended to further promote the academic mobility of the students and to cooperate with more renowned international universities.

- E 2. (ASIIN 3.1) It is recommended to increase the share of teachers with a PhD.
- E 3. (ASIIN 3.2) It is recommended to provide a dedicated budget for repairing and/or replacing broken equipment at the Faculty of Science and Technology.
- E 4. (ASIIN 4.1) It is recommended to update the literature references in the module descriptions.

## **G Comment of the Technical Committees (13.09.2024)**

### **Technical Committee 09 – Chemistry, Pharmacy (06.09.2024)**

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee sees that the expert group wants to impose three requirements. The first of these concerns the correct allocation of ECTS credits as well as the improvement of laboratory equipment and compliance with internationally recognised safety standards in the biology and chemistry laboratories. In addition, four recommendations are to be made: improving academic mobility, updating the literature references in the module descriptions, increasing the proportion of lecturers with a PhD and providing a budget for the repair of laboratory equipment. After a brief discussion, the TC approves the proposed requirements and recommendations.

*Assessment and analysis for the award of the Eurobachelor label:*

The Technical Committee confirms that the intended learning outcomes of the degree program comply with the fields of knowledge as set by ECTN.

The Technical Committee 09 – Chemistry, Pharmacy recommends the award of the seals as follows:

<b>Degree Programme</b>	<b>ASIIN-seal</b>	<b>Subject-specific label</b>	<b>Maximum duration of accreditation</b>
Ba Chemistry	With requirements for one year	Eurobachelor®	30.09.2030

### **Technical Committee 10 – Life Sciences (11.09.2024)**

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee sees that the expert group wants to impose three requirements. The first of these concerns the correct allocation of ECTS credits as well as the improvement of laboratory equipment and compliance with internationally recognised safety standards in the biology and chemistry laboratories. In addition, four recommendations are to be

made: improving academic mobility, updating the literature references in the module descriptions, increasing the proportion of lecturers with a PhD and providing a budget for the repair of laboratory equipment. After a brief discussion, the TC approves the proposed requirements and recommendations.

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

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

## **Technical Committee 12 – Mathematics (09.09.2024)**

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee sees that the expert group wants to impose three requirements. The first of these concerns the correct allocation of ECTS credits as well as the improvement of laboratory equipment and compliance with internationally recognised safety standards in the biology and chemistry laboratories. In addition, four recommendations are to be made: improving academic mobility, updating the literature references in the module descriptions, increasing the proportion of lecturers with a PhD and providing a budget for the repair of laboratory equipment. After a brief discussion, the TC approves the proposed requirements and recommendations.

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

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

## **Technical Committee 13 – Physics (13.09.2024)**

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee 13 – Physics recommends the award of the seals as follows:

<b>Degree Programme</b>	<b>ASIIN-seal</b>	<b>Subject-specific label</b>	<b>Maximum duration of accreditation</b>
Ba Physics	With requirements for one year	-	30.09.2030

- E 2. (ASIIN 3.1) It is recommended to increase the share of the teaching staff with a PhD.
- E 3. (ASIIN 3.2) It is recommended to provide a dedicated budget for maintaining and repairing experimental equipment at the Faculty of Science and Technology.

## H Decision of the Accreditation Commission (24.09.2024)

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

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

*Assessment and analysis for the award of the Eurobachelor® Label:*

The Accreditation Commission confirms that the intended learning outcomes of the Bachelor's degree program Chemistry complies with the fields of knowledge as set by ECTN.

The Accreditation Commission decides to award the following seals:

<b>Degree Programme</b>	<b>ASIIN-seal</b>	<b>Subject-specific label</b>	<b>Maximum duration of accreditation</b>
Ba Biology	With requirements for one year	-	30.09.2030
Ba Chemistry	With requirements for one year	Eurobachelor®	30.09.2030
Ba Mathematics	With requirements for one year	-	30.09.2030
Ba Physics	With requirements for one year	-	30.09.2030

### **Requirements**

#### **For all degree programmes**

A 1. (ASIIN 1.5) Make sure that the information about the awarded ECTS points is presented consistently in all documents.

#### **For the Bachelor's programmes Biology, Chemistry, and Physics**

A 2. (ASIIN 3.2) Provide a concept and a financial plan, how dedicated research laboratories can be established within the next five years and what instruments and devices will be available there.

#### **For the Bachelor's programmes Biology and Chemistry**

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



## **Recommendations**

### **For all degree programmes**

- E 1. (ASIIN 1.3) It is recommended to further promote the academic mobility of the students and to cooperate with more renowned international universities.
- E 2. (ASIIN 3.1) It is recommended to increase the share of the teaching staff with a PhD.
- E 3. (ASIIN 3.2) It is recommended to provide a dedicated budget for maintaining and repairing experimental equipment at the Faculty of Science and Technology.
- E 4. (ASIIN 4.1) It is recommended to update the literature references in the module descriptions.

## Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **Programme Learning Outcomes (PLO)** shall be achieved by the Bachelor's degree programme Biology:

Code of PLO	Description of PLO
<b>Subject-specific competences</b>	
BIO-1	Proficient in and applying theoretical concepts and principles of biology as well as relevant sciences.
BIO-2	The ability to apply theoretical concepts and principles of biology in understanding Biological sciences.
BIO-3	Able to scientifically analyze environmental issues
BIO-4	Capable of designing and conducting research, utilizing methods and instruments to address biological issues.
<b>Subject Generic Competence</b>	
BIO-5	Able to perform data analysis
BIO-6	Able to demonstrate the results of conceptual, analytical, logical, and innovative thinking in oral and written form
BIO-7	Building bioentrepreneur skills
<b>Social Competence</b>	
BIO-8	Proficient in both independent and collaborative work, demonstrating effective communication skills, and capable of engaging in critical, creative, and analytical thinking within the educational context (C3).
BIO-9	Holds essential principles encompassing patriotism, Islamic values, and ethical standards while actively engaging in the continual advancement of science and technology over the course of one's lifetime.

The following **curriculum** is presented:

### SEMESTER I

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	NAS6013203	Indonesian	3	4,13
2	UIN6021204	Arabic	3	4,13
3	UIN6032201	Islamic Studies	4	5,51
4	FST6095101	Basic Biology	2	2,76
5	FST6095102	Practicum Basic Biology	1	2,47
6	FST6094101	Calculus	2	2,76
7	FST6096201	Basic Chemistry	2	2,76
8	FST6096202	Practicum Basic Chemistry	1	2,47
9	FST6097114	Basic Physics	2	2,76
		<b>Total Credit Points</b>	<b>20</b>	<b>29,73</b>

### SEMESTER II

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	UIN6014203	English	3	4,13
2	FST6095105	Laboratory Technique	2	2,76
3	FST6095107	Plant Structure and Development	3	4,13
4	FST6095108	Practicum Plant Structure and Development	1	2,47
5	FST6095111	Animal Systematics	2	2,76
6	FST6095112	Practicum Animal Systematics	1	2,47
7	NAS6112201	Pancasila and Civic Education	3	4,13
8	FST6095124	Cell Biology	2	2,76
9	FST6091101	Introduction to Information and Communications Technology	2	2,76
10	UIN6033205	Practicum Qira'ah and Worship	2	2,76
		<b>Total Credit Points</b>	<b>21</b>	<b>31,11</b>

### SEMESTER III

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	FST6095103	Basic Ecology	3	4,13
2	FST6095104	Practicum Basic Ecology	1	2,47
3	FST6095144	Genetics	3	4,13
4	FST6095115	Practicum Genetics	1	2,47
5	FST6095106	Basic Microbiology	2	2,76
6	FST6095117	Practicum Basic Microbiology	1	2,47
7	FST6095128	Plant Systematics	2	2,76
8	FST6095109	Practicum Plant Systematics	1	2,47
9	FST6095110	Animal Structure and Development	3	4,13
10	FST6095129	Practicum Animal Structure and Development	1	2,47
11	FST6096225	Biochemistry	2	2,76
12	FST6096226	Practicum Biochemistry	1	2,47
		<b>Total Credit Points</b>	<b>21</b>	<b>36,84</b>

### SEMESTER IV

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	FST6094106	Elementary Statistics	3	4,13
2	FST6095132	Conservation Biology	2	2,76
3	FST6095113	Microbial Physiology	2	2,76
4	FST6095114	Animal Physiology	3	4,13
5	FST6095135	Practicum Animal Physiology	1	2,47
6	FST6095116	Plant Physiology	3	4,13
7	FST6095127	Practicum Plant Physiology	1	2,47
8	UIN6032202	Islam and Science	3	4,13
		<b>Mandatory</b>	<b>18</b>	
		<b>Electives</b>	<b>4</b>	
		<b>Total Credit Points</b>	<b>22</b>	
		<b>Electives</b>		
1	FST6095202	Ornithology	2	2,76
2	FST6095204	Bacteriology	2	2,76
3	FST6095205	Phycology	2	2,76
4	FST6095207	Terrestrial Ecology	2	2,76
5	FST6095208	Urban Entomology	2	2,76
				<b>32,49</b>

**SEMESTER V**

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	FST6095118	Molecular Biology	2	2,76
2	FST6095119	Practicum Molecular Biology	1	2,47
3	FST6095120	Natural Resource and Management	2	2,76
4	FST6095121	Principles of Biotechnology	2	2,76
5	FST6096150	Chemical Environment	2	2,76
6	FST6096151	Practicum Chemical Environment	1	2,47
7	UIN6000208	Research Methodology	3	4,13
		<b>Mandatory</b>	<b>13</b>	<b>15,96</b>
		<b>Electives</b>	<b>8</b>	<b>11,02</b>
		<b>Total Credit Points</b>	<b>21</b>	
		<b>Electives</b>		
1	FST6095209	Plant Tissue Culture	2	2,76
2	FST6095210	Aquatic Ecology	2	2,76
3	FST6095211	Mycology	2	2,76
4	FST6095212	Ethology	2	2,76
5	FST6095213	Secondary Metabolism	2	2,76
6	FST6095214	Mammalogy	2	2,76
7	FST6095215	Palynology	2	2,76
8	FST6095216	Population Genetics	2	2,76
9	FST6095217	Herpetology	2	2,76
10	FST6095218	Ecotourism	2	2,76
		<b>Total Credit Points</b>	<b>21</b>	<b>26,98</b>

**SEMESTER VI**

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	FST6095122	Evolution	2	2,76
2	FST6095123	Introduction to Bioinformatics	2	2,76
3	FST6095134	Scientific Communication Techniques	2	2,76
4	UIN6000207	Internship	4	9,07
		<b>Mandatory</b>	<b>10</b>	<b>17,33</b>
		<b>Electives</b>	<b>10</b>	<b>13,78</b>

		<b>Electives</b>	<b>36</b>	
1	FST6095219	Food Microbiology	2	2,76
2	FST6095220	Parasitology	2	2,76
3	FST6095221	Plant Ecophysiology	2	2,76
4	FST6095222	Landscape Ecology	2	2,76
5	FST6095223	Ethnobotany	2	2,76
6	FST6095224	Embryology	2	2,76
7	FST6095225	Waste Management	2	2,76
8	FST6095226	Environmental Biotechnology	2	2,76
9	FST6095227	Plant Biotechnology	2	2,76
10	FST6095228	Introduction to Environmental Impact Analysis	2	2,76
11	FST6095229	Immunology	2	2,76
12	FST6092030	Halal Food	2	2,76
13	FST6095231	Malacology	2	2,76
14	FST6095232	Primatology	2	2,76
15	FTK6017150	Strategies and Learning Biology	2	2,76
16	FTK6017153	Media and Technology Learning Biology	2	2,76
17	FTK6017155	Evaluation of Biology Learning	2	2,76
18	FTK6017158	Planning Learning Biology	2	2,76
		<b>Total Credit Points</b>	<b>20</b>	<b>31,11</b>

**SEMESTER VII**

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	FST6095125	Bioethics	2	2,76
2	FST6092035	Technopreneurship	2	2,76
3	UIN6000206	Community Service Program	4	9,07
4	FST6095126	Proposal Seminar	1	1,20
		<b>Mandatory</b>	<b>9</b>	<b>15,78</b>
		<b>Electives</b>	<b>6</b>	<b>8,27</b>
		<b>Electives</b>	<b>18</b>	
1	FST6095233	Industrial Microbiology	2	2,76
2	FST6095235	Phytopathology	2	2,76
3	FST6095236	Plant Breeding	2	2,76
4	FST6095237	Environmental Toxicology	2	2,76
5	FST6095238	Biomaterials and Nanotechnology	2	2,76
6	FST6095239	Genetics Engineering	2	2,76
7	FST6095242	Ichthyology	2	2,76
8	FST6095244	Marine Biology	2	2,76
9	FST6095240	Virology	2	2,76
		<b>Total Credit Points</b>	<b>15</b>	<b>24,04</b>

**SEMESTER VIII**

No	Code of Course	Mandatory Course	Credit Points	ECTS
1	UIN 6000312	Final Project (Thesis)	6	7,20
2	UIN 6000313	Seminar	1	1,20
		<b>Total Credit Points</b>	<b>7</b>	<b>8,40</b>
		<b>Total Credits (SKS or SCU) for Completion of Bachelor Program</b>		<b>148</b>
		<b>Total Credits (ECTS) for Completion of Bachelor Program</b>		<b>220,71</b>

According to the Self-Assessment Report, the following **Programme Learning Outcomes (PLO)** shall be achieved by the Bachelor's degree programme Chemistry:

Code of PLO	Description of PLO
<b>Subject-specific competences</b>	
CHEM-1	have gained chemistry-relevant fundamental knowledge of mathematics and the natural sciences,
CHEM-2	Able to apply the basic concepts of organic chemistry, inorganic chemistry, physical chemistry, analytical chemistry, food chemistry and biochemistry and be able to apply them in the processes of chemical identification, isolation, transformation and synthesis.
CHEM-3	Have gained knowledge of concepts and principles on environmental, materials, and food chemistry as well as their applications in a selected field.
CHEM-4	Be able to work independently by implementing occupational health and safety concepts and regulations in the laboratory, environment and industry
CHEM-5	Mastering complete operational knowledge of functions, how to operate common chemical instruments, and analysis of data and information from these instruments.
CHEM-6	have interdisciplinary knowledge and skills, such as in halal food and Technopreneurship
<b>Generic competences</b>	
CHEM-7	Have the ability to manage simple chemical research supported by data analysis skills, information technology and mastery of chemical instruments.
CHEM-8	Able to Choose Strategic Decisions and Provide Alternative Solutions Based on Simple Chemical Research in the Field of Identification, Analysis, Isolation, Transformation, and Synthesis of Chemicals
<b>Social competences</b>	
CHEM-9	Be able to communicate with colleagues from the related field and the general public on chemistry-related contents and problems, and use the foreign language in a cross-cultural frame as a lifelong learner
CHEM-10	Have gained social skills and knowledge in an integrated manner in the professional field, and leadership based on Islamic and Indonesian values
CHEM-11	Have the ability to work collaboratively in groups and appreciate the meaning of cooperation with others.



The following curriculum is presented:

### SEMESTER I

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096101	Basic Chemistry I	3	4,13
2	FST 6096102	Basic Chemistry Laboratory Work I	1	2,47
3	FST 6097114	Basic Physic	2	2,76
4	NAS 6013203	Indonesian Language	3	4,13
5	FST 6094225	Calculus	2	2,76
6	UIN 6032201	Islamic Studies	4	5,51
7	FST 6097115	Basic Physic Laboratory Work	1	2,47
8	UIN 6021204	Arabic Language	3	4,13
9	UIN 6033205	Qiroah practice and Worship	2	5,00
		<b>Number of credits</b>	<b>21</b>	<b>33,36</b>

### SEMESTER II

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096103	Basic Chemistry II	3	4,13
2	FST 6096104	Basic Chemistry Laboratory Work II	1	2,50
3	FST 6096105	Organic Chemistry I	3	4,13
4	FST 6096106	Organic Chemistry Laboratory Work I	1	2,47
5	FST 6097116	Advance Physic	2	2,76
6	FST 6096107	Chemical Laboratory Management	2	2,76
7	FST 6095201	Basic Biology	2	2,76
8	NAS 6112201	Pancasila and civic education	3	4,13
9	FST 6091101	Introduction to Information and Communication Technology	2	2,76
10	FST 6096108	Qualitative Analytical Chemistry	2	2,76
11	FST 6096109	Qualitative Analytical Chemistry Laboratory Work	1	2,50
		<b>Number of credits</b>	<b>22</b>	<b>33,64</b>

**SEMESTER III**

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096110	Organic Chemistry II	3	4,13
2	FST 6096111	Organic Chemistry Laboratory Work II	1	2,50
3	FST 6096112	Quantitative Analytical Chemistry	3	4,13
4	FST 6096113	Quantitative Analytical Chemistry Laboratory Work	1	2,47
5	FST 6096114	Chemical Thermodynamics	3	4,13
6	FST 6096115	Chemical Thermodynamics Laboratory Work	1	2,50
7	FST 6096116	Inorganic Structure and Reactivity	3	4,13
8	FST 6096117	Inorganic Structure and Reactivity Laboratory Work	1	2,50
9	UIN 6032202	Islam and Science	3	4,13
		<b>Number of credits</b>	<b>19</b>	
		<b>Elective courses</b>	<b>2</b>	<b>2,76</b>
		<b>Total of credits</b>	<b>21</b>	
		<b>Elective courses available</b>		
1	FSH 6046126	IPR (Intellectual Property Rights)	2	
2	FST 6096319	Management of Hazardous Materials	2	
3	FST 6092038	Halal Food Standardization and Management	2	
				<b>43,39</b>

**SEMESTER IV**

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096121	Transition Metals and Coordination Chemistry	3	4,13
2	FST 6096122	Transition Metals and Coordination Chemistry Laboratory Work	1	2,50
3	FST 6096123	Chemical Dynamics	3	4,13
4	FST 6096124	Chemical Dynamics Laboratory Work	1	2,50
5	FST 6096125	Structure and Function of Biomolecules	3	4,13
6	FST 6096126	Biochemistry Laboratory Work	1	2,47
7	FST 6096127	Chemical Separation Techniques	3	4,13
8	FST 6096128	Chemical Separation Techniques Laboratory Work	1	2,50

9	FST 6094106	Elementary statistics	3	4,13
		<b>Number of credits</b>	<b>19</b>	
		<b>Elective courses</b>	<b>4</b>	<b>2,04</b>
		<b>Total of credits</b>	<b>23</b>	
		<b>Elective courses available</b>		
1	FST 6096329	Polymer Chemistry	2	2,76
2	FST 6096330	Chemical Process Industry	2	2,76
3	FST 6096331	Functional Food	2	2,76
4	FST 6095106	Microbiology	2	2,76
5	FST 6096332	Organic Chemical Synthesis	2	2,76
				<b>32,68</b>

**SEMESTER V**

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096133	Metabolism	3	4,13
2	FST 6096134	Natural Product Chemistry	2	2,76
3	FST 6096135	Natural Product Chemistry Laboratory Work	1	2,50
4	FST 6096136	Atomic and Molecular Spectroscopy	2	2,76
5	FST 6096137	Instrument Analysis Laboratory Work	1	2,47
6	FST 6096138	Food Chemistry Laboratory Work	1	2,50
7	FST 6096139	Food Chemistry	3	4,13
8	UIN 6014203	English	3	4,13
		<b>Number of credits</b>	<b>16</b>	
		<b>Elective courses</b>	<b>4</b>	<b>5,51</b>
		<b>Total of credits</b>	<b>20</b>	
		<b>Elective courses available</b>		
1	FST 6096340	Electrochemistry	2	2,76
2	FST 6096341	Bioinorganic	2	2,76
3	FST 6096342	Mineral Chemistry	2	2,76
4	FST 6096343	Enzymology	2	2,76
5	FST 6096344	Catalyst Chemistry	2	2,76
6	FST 6096345	Colloid Chemistry	2	2,76
7	FST 6096346	Petroleum Chemistry	2	2,76
8	FST 6096347	Mineral Metabolism	2	2,76
				<b>30,89</b>

**SEMESTER VI**

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096148	Structure Elucidation	2	2,76
2	FST 6092035	Technopreneurship	2	2,76
3	FST 6096149	Food Technology	3	4,13
4	UIN 6000208	Research Methodology	3	4,13
5	FST 6096150	Environmental Chemistry Laboratory Work	1	2,47
6	FST 6096151	Environmental Chemistry	2	2,76
		<b>Number of credits</b>	<b>13</b>	
		<b>Elective courses</b>	<b>6</b>	<b>8,27</b>
		<b>Total of credits</b>	<b>19</b>	
		<b>Elective courses available</b>		
1	FST 6096352	Inorganic Chemical Synthesis	2	2,76
2	FST 6096353	Cosmetic and Medicinal Chemistry	2	2,76
3	FST 6096354	Environmental Impact Management Analysis (AMDAL)	2	2,76
4	FST 6096355	Toxicology	2	2,76
5	FST 6096356	Food Safety Control	2	2,76
6	FST 6096357	Biotechnology	2	2,76
7	FST 6096358	Radiation Chemistry and Applications	2	2,76
8	FST 6096359	Halal Food Analysis	2	2,76
9	FST 6096360	Additive Chemistry	2	2,76
				<b>27,27</b>

**SEMESTER VII**

No	Code	Compulsory Courses	Credit	ECTS
1	FST 6096161	Colloquium	2	4,53
2	UIN 6000207	Job training (KKL)	4	9,07
3	UIN 6000206	Community Service Program (KKN)	4	9,07
		<b>Number of credits</b>	<b>10</b>	
		<b>Elective courses</b>	<b>4</b>	<b>5,51</b>
		<b>Total of credits</b>	<b>14</b>	
		<b>Elective courses available</b>		
1	FST 6095237	Environmental Toxicology	2	2,76
2	FST 6096362	Zeolite	2	2,76
3	FST 6096363	Bioorganic	2	2,76
4	FST 6096364	Biochemical Laboratory Technique	2	2,76
5	FST 6096120	Natural resource management	2	2,76
6	FST 6096365	Biofuels	2	2,76
7	FST 6095123	Bioinformatics	2	2,76
8	FST 6096367	Computational Chemistry	2	2,76
				<b>28,18</b>

**SEMESTER VIII**

No	Code	Compulsory Courses	Credit	ECTS
1	UIN 6000312	Bachelor Thesis	6	13,60
2	UIN 6000313	Seminar	1	2,27
		<b>Number of credits</b>	<b>7</b>	<b>15,87</b>

According to the Self-Assessment Report, the following **Programme Learning Outcomes (PLO)** shall be achieved by the Bachelor's degree programme Mathematics:

Code of PLO	Description of PLO
<b>Subject-specific competences</b>	
MATH-1	Have a profound knowledge in fundamental mathematical concepts.
MATH-2	Proficient in comprehending concepts and mathematical models as the foundation for solving simple problems related to both mathematics and the real world.
MATH-3	Capable of communicating and developing mathematical ideas effectively, both orally and in writing, starting from procedural/computational mastery and progressing to a comprehensive grasp encompassing exploration, logical reasoning, generalization, abstraction, and formal proof.
MATH-4	Possessing the ability to design and analyze mathematical models and apply them in decision-making processes through both inductive and deductive logic.
MATH-5	Proficient in observing, identifying, formulating, and resolving problems utilizing mathematical or statistical approaches with the aid of technology.
<b>Generic competences</b>	
MATH-6	Competent in applying the sciences and technologies while integrating the values of Indonesian heritage and Islamic principles.
MATH-7	Adept at collaboration, adaptation, innovation, and assuming the role of a lifelong learner.
<b>Social competences</b>	
MATH-8	Capable of functioning as a leader or a member of a team and exhibiting professionalism based on religious principles, societal norms, and prevailing laws.

The following curriculum is presented:

### SEMESTER I

No	Code	Mandatory Course	Credit Points	ECTS
1	UIN6021204	Arabic	3	4,133
2	FST6091102	Basic Computer Science and Programing	3	4,133
3	FST6032202	Islam and Science	3	4,133
4	FST6094101	Calculus 1	4	5,511
5	FST6094103	Discrete Mathematics	4	5,511
6	FST6091101	Introduction to Information and Communications Technology	2	2,756
7	UIN6032201	Islamic Studies	4	5,511
		<b>Total Credit Points</b>	<b>23</b>	<b>31,689</b>

### SEMESTER II

No	Code	Mandatory Course	Credit Points	ECTS
1	FST6094105	Elementary Linear Algebra	4	5,51
2	NAS6013203	Indonesian	3	4,13
3	UIN6014203	English	3	4,13
4	FST6094104	Calculus II	4	5,51
5	NAS6112201	Pancasila and Civic Education	3	3,67
6	UIN6033205	Practicum Qira'ah and Worship	2	4,93
7	FST6094107	Practicum Elementary Statistics	1	2,47
8	FST6094106	Elementary Statistics	3	4,13
		<b>Total Credit Points</b>	<b>23</b>	<b>34,49</b>

### SEMESTER III

No	Code	Mandatory Course	Credit Points	ECTS
1	FST6094113	Exploration Data Analysis	3	4,13
2	FST6094108	Multiple Variable Calculus	4	5,51
3	FST6094112	Numerical Method	4	5,51
4	FST6094110	Introduction to Real Analysis	4	5,51
5	FST6094111	Introduction to Financial Mathematics	3	4,13
6	FST6094109	Mathematical Statistics	4	5,51
		<b>Total Credit Points</b>	<b>22</b>	<b>30,31</b>



**SEMESTER IV**

No	Code	Mandatory Course	Credit Points	ECTS
1	FST6091304	Algorithm and Data Structure	4	5,51
2	FST6094120	Geometry	3	4,13
3	FST6094119	Linear Models	3	4,13
4	FST6094114	Introduction to Real Analysis II	4	5,51
5	FST6094115	Introduction to Stochastic Process	3	4,13
6	FST6094117	Ordinary Differential Equations	3	4,13
7	FST6094118	Mathematical Statistics II	3	4,13
		<b>Total Credit Points</b>	<b>23</b>	<b>31,69</b>

**SEMESTER V**

No	Code	Mandatory Course	Credit Points	ECTS
1	FST6092035	Technopreneur	2	2,76
2	FST6094122	Complex Function	3	4,13
3	FST6094121	Introduction to Algebra Abstract	4	5,51
4	FST6094123	Partial Differential Equations	3	4,13
		<b>Mandatory</b>	<b>12</b>	
		<b>Electives</b>	<b>12</b>	
		<b>Total Credit Points</b>	<b>24</b>	
		<b>Electives</b>		
1	FST6094306	Categorical Data Analysis	3	4,13
2	FST609304	Introduction to Data Mining	3	4,13
3	FST6091107	Database System	3	4,13
4	FST6094311	Spatial Statistics	3	4,13
5	FST6094312	Control Statistics Quality	3	4,13
6	FST6094303	Non Statistics Parametric	3	4,13
7	FST6094305	Introduction to Risk Theory	3	4,13
8	FST6094308	Introduction to Plans pension	3	4,13
9	FST6094302	Actuary Mathematics	3	4,13
10	FEB6083205	Introduction to Economics Micro	3	4,13
11	FST6094307	Introduction to General Insurance	3	4,13
12	FST6094309	Introduction to Sharia Insurance	3	4,13
				<b>28,93</b>

**SEMESTER VI**

No	Code	Mandatory Course	Credit Points	ECTS
1	UIN 6000208	Research Methodology	3	4,13
2	FST6094126	Mathematics Modeling	3	4,13
3	FST6094125	Introduction to Graph Theory	3	4,13
4	FST6094124	Optimization Method	3	4,13
		<b>Mandatory</b>	<b>12</b>	
		<b>Electives</b>		
		<b>Total Credit Points</b>		
		<b>Electives</b>		
1	FST6094316	Analysis of Social Media	3	4,13
2	FST6094314	Time Series Analysis	3	4,13
3	FST6094315	Biostatistics	3	4,13
4	FST6094327	High Performance Computing	3	4,13
5	FST6094310	Selective Capita	3	4,13
6	FST6094322	Advanced Actuarial Mathematics	3	4,13
7	FST6091911	Natural Language Processing	3	4,13
8	FEB6084202	Introduction to Macroeconomics	3	4,13
9	FST6094320	Introduction to Actuarial Computing	3	4,13
10	FST6094317	Introduction to Financial Computing	3	4,13
11	FST6094328	Introduction to Statistical Computing	3	4,13
12	FST6094318	Introduction to Insurance Company Operations	3	4,13
13	FST6094313	Multivariate Statistics	3	4,13
14	FST6094319	Sampling Techniques and Experimental Design	3	4,13
15	FST6094326	Number Theory	3	4,13
16	FST6094121	Linear Algebra	3	4,13
				<b>28,93</b>

**SEMESTER VII**

No	Code		Credit Points	ECTS
1	UIN6000207	Community Service Program	4	9,07
2	UIN6000206	Internship	4	9,07
		<b>Total Credit Points</b>	<b>8</b>	<b>18,13</b>

**SEMESTER VIII**

No	Code	Mandatory Course	Credit Points	ECTS
1	UIN 6000312	Final Project	6	13,6
2	UIN 6000313	Seminar	1	2,27
		<b>Total Credit Points</b>	<b>7</b>	<b>15,87</b>
		<b>Total Credits (SKS or SCU) for Completion of Bachelor Program</b>		<b>148</b>
		<b>Total Credits (ECTS) for Completion of Bachelor Program</b>		<b>220,04</b>

According to the Self-Assessment Report, the following **Programme Learning Outcomes (PLO)** shall be achieved by the Bachelor's degree Physics:

Code of PLO	Description of PLO
<b>Subject-specific competences</b>	
PHY-1	Able to explain the concepts and principles of physics in a comprehensive manner.
PHY-2	Able to apply mathematical equations to solve physics problems.
PHY-3	Able to analyze Physics problems using Mathematical, Computational and Instrumentation methods and techniques.
PHY-4	Able to evaluate Physics problems based on the basic concepts of Physics in a comprehensive manner.
PHY-5	Able to design a scientific project in studying physics problems critically and systematically.
<b>Generic competences</b>	
PHY-6	Able to formulate physics problems based on observation results to obtain the right solution and convey it orally and in writing.
PHY-7	Able to design physics studies in the use of technology.
PHY-8	Able to practice the basic principles of experimentation and the latest measurement methods.
<b>Social competences</b>	
PHY-9	Able to think logically, critically, systematically and innovatively in discussing a problem based on scientific principles and able to put it into practice.
PHY-10	Able to collaborate in solving a problem in a scientific community.

The following curriculum is presented:

### SEMESTER I

No	Code	Mandatory Course	SKS	ECTS
1	NAS 6112201	Pancasila and Civic Education	3	2.97
2	UIN 6032201	Islamic Studies	4	3.33
3	UIN 6014203	English	3	3.20
4	FST 6094106	Elementary Statistics	3	3.67
5	FST 6094226	Basic Mathematics	3	3.67
6	FST 6097111	Basic Physics 1	3	3.90
7	FST 6097112	Basic Physics Laboratory Work 1	1	2.16
8	FST 6097113	Measurement and Calibration Systems	2	2.44
<b>Total</b>			<b>22</b>	<b>25.33</b>

### SEMESTER II

No	Code	Mandatory Course	SKS	ECTS
1	NAS 6013203	Indonesian Language Education	3	3.20
2	UIN 6021204	Arabic Language Education	3	3.20
3	UIN 6033205	Qiroah and Worship Practicum	2	3.84
4	FST 6091101	Information and Communication Technology	2	2.13
5	FST 6096201	Basic Chemistry	3	3.67
6	FST 6096202	Basic Chemistry Laboratory Work	1	2.08
7	FST 6097121	Basic Physics 2	3	4.13
8	FST 6097122	Basic Physics Laboratory Work 2	1	2.23
9	FST 6097123	Mathematical Physics 1	4	4.89
<b>Total</b>			<b>22</b>	<b>29.38</b>

### SEMESTER III

No	Code	Mandatory Course	SKS	ECTS
1	UIN 6032202	Islam and Science	3	3.20
2	FST 6095120	Natural Resource Management	2	2.13
3	FST 6097131	Mathematical Physics 2	4	4.89
4	FST 6097132	Wave	3	4.13
5	FST 6097133	Thermodynamics	3	4.13
6	FST 6097134	Modern Physics	3	4.13
7	FST 6094135	Numerical Methods	2	2.44
8	FST 6097136	Physics Experiment 1	2	4.47
<b>Total</b>			<b>22</b>	<b>29.53</b>

**SEMESTER IV**

No	Code	Mandatory Course	SKS	ECTS
1	FST 6092035	Technopreneurship	2	2.13
2	FST 6097141	Mathematical Physics 3	2	2.76
3	FST 6097117	Basic Electronics	3	3.67
4	FST 6097143	Basic Electronics Laboratory Work	1	2.08
5	FST 6097144	Computational Physics	3	3.67
6	FST 6097145	Computational Physics Laboratory Work	1	2.08
7	FST 6097146	Mechanics	4	4.89
8	FST 6097147	Electromagnetic Field 1	3	4.13
9	FST 6097148	Physics Experiment 2	2	4.47
<b>Total</b>			<b>21</b>	<b>29.87</b>

**SEMESTER V**

No	Code	Mandatory Course	SKS	ECTS
1	FST 6097151	Electromagnetic Field 2	3	4.13
2	FST 6097152	Quantum Physics	4	5.51
3	FST 6097153	Solid State Physics	4	5.51
4	FST 609725X	Specialization Elective Courses*	9	11.00
<b>Total</b>			<b>20</b>	<b>26.16</b>

**SEMESTER VI**

No	Code	Mandatory Course	SKS	ECTS
1	UIN 6000207	Internship	4	7.33
2	FST 6097161	Nuclear Physics	4	5.51
3	FST 6097162	Statistical Physics	4	5.51
4	UIN 6000208	Research Methodology	3	3.20
5	FST 609726X	Specialization Elective Courses*	5	6.11
<b>Total</b>			<b>20</b>	<b>27.67</b>

**SEMESTER VII**

No	Code	Mandatory Course	SKS	ECTS
1	UIN 6000206	Community Service Program	4	5.13
2	FST 609727X	Specialization Elective Courses*	6	7.33
<b>Total</b>			<b>10</b>	<b>12.47</b>

**SEMESTER VIII**

No	Code	Mandatory Course	SKS	ECTS
1	UIN 6000212	Thesis	6	11.00
2	UIN 6000213	Seminar	1	1.83
<b>Total</b>			<b>7</b>	<b>12.83</b>