ASIIN Seal
Accreditation Report

Bachelor's Degree Programmes

Physics
Physics Education
Statistics

Provided by
Universitas Negeri Yogyakarta

Version: 10 October 2024

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Sarjana Pendidikan Fisika	Bachelor of Physics Education	ASIIN	BAN-PT 07.12.2021 – 30.01.2026	13
Sarjana Fisika	Pachelor of Physics	ASIIN	BAN-PT 07.12.2021 – 07.05.2024	13
Sarjana Statistika	Bachelor of Statistics	ASIIN	BAN-PT 11.05.2021 – 11.05.2026	12
Date of the contract: 19.09.2023 **Submission of the final version of the self-assessment report:** 04.12.2023 **Date of the onsite visit:** 05-06.06.2024 **at:** Fakultas Matematika dan Ilmu Pengetahuan Alam, Yogyakarta, Indonesia				
Expert panel: Prof. Dr. Thomas Trefzger, University Würzburg; Prof. Dr. Susanne Rockinger, Ostbayerische Technische Hochschule Regensburg; Herri Trilaksana, PhD, Universitas Airlangga Langgam Bagaspratomo, PT Fortasindo				

[1] ASIIN Seal for degree programmes.
[2] TC: Technical Committee for the following subject areas:TC 12 - Mathematics; TC 13 – Physics.

Jihan Shafiyah ZT, Universitas Brawijaya	
Representative of the ASIIN headquarter: Sascha Warnke	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 12 – Mathematics as of December 9, 2016 and Technical Committee 13 – Physics as of March 20, 2020	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor of Physics Education	Sarjana Pendidikan (S.Pd.)/ Bachelor of Education (B.Ed.)		06	Full time	/	8 semesters	146 SKS (236 ECTS)	Odd semester, since 1965
Bachelor of Physics	Sarjana Sains (S.Si.)/ Bachelor of Science (B.Sc.)		06	Full time	/	8 semesters	146 SKS (236 ECTS)	Odd semester, since 1997
Bachelor of Statistics	Sarjana Statistika (S.Stat.)/ Bachelor of Statistics (B.Stat)		06	Full time	/	8 semesters	147 SKS (238 ECTS)	Odd semester, since 2018

For the Bachelor's degree programme Physics Education the institution has presented the following profile in the self-assessment report:

"The Bachelor's degree programme Physics Education aims to produce graduates who are competent to be physics teachers in formal and non-formal institutions, developers of learning resources and media, and managers or organisers of educational institutions."

For the Bachelor's degree programme Physics the institution has presented the following profile in the self-assessment report:

"The Bachelor's degree programme Physics aims to produce graduates who are competent to be physicists in government, non-government institutions and industry."

For the Bachelor's degree programme Statistics the institution has presented the following profile in the self-assessment report:

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

“The Bachelor’s degree programme Statistics aims to produce graduates who are competent to be data scientists, data analysts, statisticians in government and non-government institutions.”

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:

- Vision and mission of UNY
- Diploma supplement
- Diploma Supplement
- Objective-module matrix
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Universitas Negeri Yogyakarta (UNY) is a public state university established in 1964 in the Special Region of Yogyakarta. Founded after a merger of two education facilities to offer teacher education and pedagogical courses, UNY has since expanded its mandate to other degree programmes. Still, it is considered within Indonesia to be one of the best institutions for teacher education programmes. Currently, the university consists of ten faculties, in which a total of 139 study programmes are taught. There are about 51,000 student enrolled at UNY, with about 35,000 being undergraduates. They are instructed by 1383 lecturers, of whom 159 have full professorships.

The three programmes under review here are Bachelor's degree programmes in Physics Education, Physics, and Statistics. They are all located at the faculty of mathematics and natural sciences (Fakultas Matematika dan Ilmu Pengetahuan Alam, FMIPA). The programmes were built according to the vision and mission of UNY, keeping in mind national and international guidelines. They are all 4-year full-time programmes.

The learning outcomes for the three study programmes are formulated in accordance with the vision and mission of the university, the graduate profile of the respective programmes

and the requirements by the job market. The learning outcomes are based on three general skills to be expected of graduates: a professional attitude, in-depth knowledge about the field matter as well as skill to implement the knowledge practically. The learning outcomes can be found in the appendix to this report.

The assessors check the learning outcomes against the international criteria and come to the conclusion that the learning outcomes cover the expected teaching matters and the graduate profiles sufficiently. All the while, the learning outcomes between the programmes, particularly the Ba Physics and Ba Physics Education, differ substantially to give each programme the necessary individuality. The assessors can further confirm that the competence profile of the graduates for each programme under review equals the European Qualifications Framework (EQF) 6. According to the self-assessment report the Bachelor's degree programme Physics Education "aims to produce graduates who are competent to be physics teachers in formal and non-formal institutions, developers of learning resources and media, and managers or organisers of educational institutions", and the Ba Physics "aims to produce graduates who are competent to be physicists in government, non-government institutions and industry". Lastly, the graduates of the Ba Statistics are supposed to be "data scientists, data analysts, statisticians in government and non-government institutions". During the audit, the industry representatives (among them bankers, statistician agencies, high schools and universities) state that the alumni's competence profile is very satisfactory in the job market.

Programme objectives and learning outcomes are construed by a development team assigned and led by the programme coordinator. They are reviewed and revised in conjunction with the curriculum at least every five years, to keep them in line with the defining features of the programmes, i.e. the job market, regulations and the visions and missions of the university. The curriculum review involves relevant stakeholders such as teaching staff, alumni, professional associations and employers from universities, industries, or research institutions so they comply with the competences required by the professional association. The programme coordinators openly say during the audit that they appreciate the input of external stakeholders and the various interviewees confirm their involvement. Alumni and industry representatives attest to their involvement in the review. They helped, for example, with the ILOs regarding the scientific vision in the programmes.

The learning outcomes are published on the website as well as in the diploma supplement. The assessors confirm this, too. All in all, the expert team is satisfied with the learning outcomes of the three programmes, their review and the involvement of various stakeholders.

Criterion 1.2 Name of the Degree Programme

Evidence:

- Study regulations
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The names of the three programmes under review here are based on a catalogue by the ministry. The names of the study programmes are in Bahasa Indonesia which reflects the language of instruction. The names are given in the study regulations and are used consistently in both Bahasa Indonesia and English translations consistently. Generally, the assessors find that the overarching names of Physics, Physics Education and Statistics cover the learning outcomes and curricula well enough.

However, during the audit the expert team talked more extensively about the name of the Ba Physics. In the curriculum the focus is not on the theoretical part of physics that one might expect from a pure physics programme (s. criterion 1.3 for a more detailed analysis). The assessors discuss with the programme coordinators if another naming convention might be more suitable for the programme, e.g. Applied Physics. The programme coordinators explain that the names of study programmes must adhere to ministry standards, according to which Applied Physics would be read as a rather vocational programme. Despite not fitting perfectly they and the assessors come to an understanding that, within the default naming possibilities, the plain descriptor of “Physics” is the most suitable one. The assessors are in agreement with the choice of names and their use throughout the documentation.

Criterion 1.3 Curriculum

Evidence:

- Curriculum overview
- Objective-module matrices
- Module handbooks
- Academic regulations

- Student Evaluations
- Statistical data on student mobility
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:

Content

The contents of the three courses under review here have an increased specificity with ongoing semesters. In the first year students learn the fundamentals of their field of study and courses that are mandated by the government, e.g. religious education, Pancasila and Bahasa Indonesia. Semesters three and four contain further introductions but the fields in which the students are taught begin to branch out. In the Ba Physics, e.g., students take courses in statistical physics, special relativity and quantum physics in semester three, and further courses in atomic, nuclear, and solid state physics in the following semester. In the third year the focus is on elective courses. As an example, the Ba Physics Education allows students to choose to engage in different media as a form of teaching, such as photography, audio visual or computer based media. The seventh semester is dedicated to the community service and an internship. The community service is a government-mandated social programme, in which students are supposed to help with their knowledge in rural areas of the country. The students are supposed to learn to apply the knowledge and acquire soft skills that are necessary in the working life. Lastly, in the final semester students write their mandatory final thesis.

Generally, the assessors consider the content of the three study programmes to be sound and an appropriate composition of topics for a degree on the European Qualification Framework (EQF) 6. Each course has specific learning outcomes which are recorded in the module handbooks. They relate to the programme learning outcomes so that each module helps to achieve the overarching programme outcomes. The Ba Statistics in particular and, to a certain degree, the Ba Physics Education contain subjects that are very up-to-date in the respective fields and looked after in the job market. As was already mentioned in the prior criteria, the Ba Physics has its focus put more on application than on theory. While this study programme is sound and change of the modules is neither warranted nor especially necessary, the assessors see a lack of a modules on theoretical physics, e.g. Schrödinger's equation or differentials. They suggest that the content of existing modules be modified to cover theoretical physics more thoroughly, without introducing additional workload for the students.

As was mentioned, the three courses feature an obligatory internship in the seventh semester. During the internship, that takes place over the course of two months, students are supervised by one advisor from the university and a representative from the respective company or institute. During the audit the industrial representatives state that they take students in, and students confirm that they are guided through the internship. The students report that some of them spent time overseas, e.g. in Vietnam or in Taiwan. They receive scholarships and crediting of the courses is easy. The students of the Ba Physics Education state that they teach in high schools for a total of six months, for the internship and the community service. They say that the participating schools are chosen by the Ministry of Education and applying for a school is easy. Before they start in the classroom they receive training on teaching.

The assessors can confirm that the contents of the three programmes are sensible and sound. The internships and the community service are working well, particularly because there is a good coordination between the industry, the government and the university.

Structure of the programme

The university states that, generally, the contents of the three programmes are structured in a way that students first learn to have a professional attitude and get knowledge in the field, and later learn to apply both in conjunction. Thus, generally, in the first three semesters students learn university and faculty courses, in the fourth semester programme courses which are complemented by electives and minors in the fifth and sixth semester. The seventh semester is dedicated to community service and the internship and the final semester contains only the thesis. The total workload of the Ba Physics and Ba Physics Education is 146 SKS (Indonesian credits), and the Ba Statistics amounts to 147 SKS. The assessors can confirm that the general structure of the programmes is reasonable.

The individual modules represent a well-matched unit of teaching and learning in which the learning outcomes and the relation to the field of study is clear. The modules are ordered in a way that ensures a sensible structure of the whole study programme for all three programmes. This sequence makes it achievable for students to finish their studies within the expected eight semesters.

Student mobility

The Indonesian Ministry of Education and Culture has recently published a decree on student mobility called “Freedom to Learn and Independent Campus (Merdeka Belajar Kampus Merdeka, MBKM)” which has been put into practice in all three study programmes. Its goal is to simplify the academic mobility of students by helping with credit transfers and educational internships, both domestic and international. Since students are supposed to have an easy time to go study at another university within Indonesia or take part in an internship, the courses in the curriculum were redistributed so that the fifth and sixth semester contain many electives.

This time slot doubles as a mobility window for the university’s own programmes to study abroad. UNY has several partnerships with international universities which they prove with memoranda of understanding. The programme coordinators state that credit transfer is easy between the partnering universities and that there is promotion on campus. Despite these offers the participation of students from the three study programmes under review remains low. All in all, between the years 2020-2022 the number of outgoing students was 36 throughout the three programmes. UNY has identified language barriers and a lack of self-motivation as the root cause and started to provide workshops. This way the university wants to motivate students and improve their English proficiency. The assessors understand the identified problems with the mobility and want to suggest that the university increase the promotion of student mobility. International co-operation and scholarships, therefore, should be enhanced as a driving factor, since they are quite low in number as well.

Periodic Review of the Curriculum

The curricula of the three study programmes are regularly reviewed at least every five years. A curriculum cycle consists of initiating and planning, then design, development and approval which is followed by the implementation. During delivery, monitoring and improvement UNY collects data for review and assurance. The university has a dedicated Office of Quality Assurance that provides administrative support and advice to the department to ensure smooth processes regarding (re-)development and maintenance of curricula and to monitor the delivery of the curriculum to collect data on the implementation.

The curriculum review involves teaching staff, programme coordinators and students while external stakeholders, i.e. alumni, employers and professional associations, are involved, too. The stakeholders present during the audit confirm their participation in the last curriculum review. The industrial partners give as an example that in 2022 they had a discussion

about the internships which are now part of the curriculum. The industrial partners have also helped with certain guidelines as well as the ILOs. The assessors get a good glimpse into the workings of the quality management regarding the curriculum work. They say that the processes concerning the review process is robust and fully satisfactory.

Criterion 1.4 Admission Requirements

Evidence:

- UNY admission website https://pmb.uny.ac.id/home
- Standard Operational Procedure of student admission
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:

At UNY, admission of students for all degree programmes is managed at university level through the admission office. The selection of students in the Bachelor's degree programme is conducted through three channels. The first one is the National Selection Based on Achievement (SNBP), the second one is the National Selection Based on Tests (SNBT), and the last one is the independent selection process of UNY. As the names suggest, the first two are held throughout Indonesia, while the third one is a test designed by the university proper. The quota for each selection channel is given by the university in its Standard Operational Procedure as of 2022 as follows: at least 20% from SNBP, 40% or more from SNBT and no more than 30% from the independent selection. During the audit the programme coordinators state, contrarily, that the acceptance rate of the independent selection is currently up to 50%. The assessors worry that since the testing is conducted without a standardised difficulty level, the testing method in conjunction with the high acceptance rate from this pool might affect the overall performance of the student body. The programme coordinators do not have any statistics regarding the performance of individual students from the various admission channels so this cannot be readily verified. The experts are of the opinion that there is no immediate need for action in this matter but the university should try to make statistics on performance by admission channel and draw conclusions from there.

Other than that, the rules for admission are transparent and clearly formulated.

Criterion 1.5 Workload and Credits

Evidence:

- Module handbooks
- Academic regulations
- Conversion of SKS to ECTS
- Student evaluations
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Workload at UNY is measured in the Indonesian credit system SKS. 1 SKS equals work for one week of 170 minutes. Per semester, this translates to 13.3 contact hours and 32 hours of self-study time. To translate this system into ECTS, UNY specifies 1 ECTS to be 28 hours of work. This means, that the Ba Physics Education and Ba Physics both have a total credit of 146 SKS, or 236 ECTS; while the Ba Statistics has a total credit of 147 SKS, or 238 ECTS.

The maximal permissible workload per term is measured by the GPA of each student and may range from 24 SKS (for students with a GPA greater than 3) and 18 SKS (for students with a GPA less than 2). The average workload is calculated to be between 28 and 35 ECTS per semester for the first six terms. Due to the internship and thesis in the last year, the ECTS to be acquired amounts to 19.2 or 12.8 ECTS respectively.

The workload is higher than normal in the first two years which the programme coordinators say is due to the MBKM. Since students may take an internship or study elsewhere with the fifth semester, the programme coordinators need to shift the entirety of foundational and government-mandated courses into the first half of the study programmes. They themselves state that the workload is higher in the first semesters but, according to them, this comes with the benefit of one semester dedicated to the internship and one for the thesis. Moreover, students may make full use of the MBKM without worrying about compulsory courses they might need to take later-on. During the audit the students reinforce this, some stating that the first two years are “very tough”. This has to do with the number of courses but also the workload for each course. Students undergo continuous assessments, meaning that they have assignments every week. The assessors urge the programme coordinators to verify the workload that is currently described as it might underestimate the effective work the students are doing.

In general, the module handbooks describe the expected work from students both in hours and credit points. The workload is further itemised as lectures, self-study and other activities. The university surveys their students after every course to gauge their workload. They state that, if they find something to be amiss, they will change it. The assessors are satisfied with the monitoring and transparency of workload and crediting.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Academic regulations
- Module handbooks
- SWOT analysis
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:

UNY describes the students' learning process to be interactive, holistic, integrative, scientific, contextual, thematic, effective, collaborative, and student-centred. Lesson plans for each topic in a course are prepared in advanced and shared in the module handbook. The handbook thus contains information on teaching and assessment methods. Teachers say that they offer group discussions, simulations, case studies, collaborative learning, cooperative learning, project-based learning, problem-based learning, or other learning methods that can effectively facilitate the fulfilment of learning outcomes and the characteristics of courses. Each course may have several learning methods, among them lectures, tutorials, seminars, as well as practicums, field practices or internships.

In their SWOT analysis about the didactics and teaching methodology the university states that, as an opportunity, UNY is a teaching university, which means that they are at the source of teaching methodology and can demonstrate a variety of course offerings. Still they concede that some teachers make use of traditional teachings methods which might cut short the advantages. During the discussion with the industrial partners it came to light that the industry sees interns and graduates of UNY as lacking confidence in their skills. They state that the alumni never disappoint and have a solid set of skills in either physics, statistics or teaching, but they agree that they could do better in communication and soft skills. The assessors hear this criticism and want to suggest to the university to improve the students' communication and presentation skills by diversifying the teaching methods throughout the study programmes and individual modules.

Another point of discussion during the audit is the usage of English in class. Students say that an inhibition for them to go abroad is the lack of English in the study programme. There are textbooks in English in all three programmes, but courses in Ba Physics, e.g., are offered exclusively in Bahasa Indonesia. In the Ba Statistics, there are two courses offered in English. The students may come into contact with English when guest lecturers are present. While the students' opinions on the question of English in the curriculum differ, the alumni are very firm on the necessity of English in the field. Due to internationalisation, more and more communications and data are in English and the university should mirror that as a requirement of the job market. The industrial representatives agree, stating that English in an important factor of employing. For the Ba Physics Education the industrial representatives describe that by now there are physics courses in English in high schools and sufficient knowledge of English would greatly help graduates with employment. Here, too, the assessors agree. Since internationalisation is advancing greatly it reshapes the job market and, with it, the expectations towards the university. More English in the field of study would help them greatly, all the while preparing both graduates and the study programmes for incoming and outgoing student mobility.

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

Regarding the curriculum, the assessors notice a lack of theoretical physics modules in the Ba Physics. In their statement, UNY writes that theoretical physics aspects are covered comprehensively in different modules, e.g. Atomic Physics, Special Relativity, and Statistical Physics. While the assessors have no doubt about the appropriate contents within the modules, they want to point out the issue being the very partition of theoretical content into different modules. A more concise examination of theoretical physics in the form of a distinct would prove worthwhile according to the experts; Still, the assessors do not consider this change a necessity for the functioning of the study programme.

The university agrees that the interest in student mobility programmes is still low in the three study programmes under review here. There are plans to improve this situation, e.g. by improving the English language skills of the students, and by extending cooperations with universities abroad. The assessors welcome the openness to enhance the mobility programmes.

Regarding the different pathways of admission, the university has handed in statistics (cf. Chapter E) outlining the GPA of students by admission pathway. The results thus far are inconclusive and do not, as was suspected by the assessors, reflect a lower educational

performance by students who were admitted via the independent pathway. The assessors recommend that the statistics be continued to verify that the current proportions of student admissions from different pathways are effective.

In terms of student workload the university states that workload is routinely monitored every year through student surveys. Moreover, the programme coordinators have already notified lecturers whose courses were rated as having higher-than-average workloads to find ways to alleviate the workload. The assessors look forward to the changes.

The university states that soft-skill development for the students has been implemented on all levels of the university. They show evidence of a university-wide workshop in which interested students can work on their soft skills. The assessors appreciate these actions taken and hope that the development of these trainings will also show in the didactics and examination on a course level. Similarly, the university has identified English as an important factor in job opportunities and reacted to accommodate more English classes, e.g. by means of international courses by native speakers. The assessors look forward to these implementations.

Considering the statement of the university the assessors deem criterion 1 to be partially fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Module handbooks
- Study regulation
- Final assignment guide
- Academic calendar
- Student evaluation
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Final examinations happen at the end of every module in either written or oral form. Written exams are either paper-based or computer-based. The lecturer for each course may decide which form of assessment is appropriate and may choose both written and oral, keeping in mind the course learning outcomes. This means that, holistically, the curricula, their modules, the programme and course learning outcomes and the assessment type are harmonised. Final examinations are held according to a schedule which is publicly available via the academic calendar. A so-called “dead week” is a time between lectures and final exams which the students can use to learn and rest. The following assessment period lasts for two weeks in which all exams are performed. As per the guidelines, no more than two exams can follow on the same day, and no more than eight exams are to be written in one period. Student get the opportunity to take make-up or remedial exams.

Apart from the final exam, students undergo assessment in each course throughout the semester. This takes the form of a mid-term exam and various assessment methods, including quizzes and project work. As was said in 1.6, the students would benefit from more varied assessment forms, among them presentations. This way, there would be a more thorough focus on soft skills which are needed in the industry for all three study programmes.

All the programmes terminate with an obligatory bachelor’s thesis which is credited with 8 SKS in all three degree programmes. In it, the students are supposed to prove that they are able to work scientifically and independently on an EQF level 6. First, students write a draft which needs approval by the supervisor. After finishing the thesis they need to orally defend their thesis. The assessors find the rules regarding the final thesis to be transparent and binding.

The exams, too, are marked according to transparent and binding criteria. The weight of assessments throughout the semester are openly available in the module handbooks. Assessment criteria are available online on the department website. When students are dissatisfied with their grading they can submit a request to obtain an explanation of how the grade was determined.

There is a regular evaluation of examinations at a programme level so that the achievement of the learning outcomes can be measured. During the design of the course, teachers have discussions among themselves to determine assessment methods and the general plan of the lectures. If they find that changes are in order they may do so. They notify students of any changes in the first lesson of the semester and explain the whole study plan. When the study plan is implemented, the final exams are drafted by the teaching staff, the questions of which need to be approved by the programme coordinator.

All in all the assessment system is deemed to be sensible by the assessors apart from the restricted assessment forms. The students get to know early on which assessment they will be facing when, and can transparently check the assessments' weighing in the module handbooks. The quality management system for essays includes the teachers, the programme coordinators as well as student evaluations. This way they can continuously determine the feasibility of exams regarding student workload and time, as well as the content in regard to the achievement of the course and programme learning outcomes.

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

The university did not hand in a statement regarding criterion 2, based on the criticism of the experts also relates to criterion 1.6. The assessors, thus, consider this criterion to be not fulfilled.

3. Resources

Criterion 3.1 Staff and Staff Development

Evidence:

- Ratio of lecturers to students
- Staff handbook
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Up until 2022, the staff-student ratio is given as follows:

Year	BPE	BP	BSTAT
2020	1:12	1:13	1:14
2021	1:15	1:15	1:9
2022	1:12	1:14	1:11

1 Staff-student ratio in the three programmes from 2020-2022, where by BPE = Bachelor of Physics Education; BP = Bachelor of Physics; BSTAT = Bachelor of Statistics (taken from the self-assessment report, p. 18).

According to the ministry, university should strive toward a ratio of 1:20, which the study programmes have surpassed consistently. The teaching staff must hold a Master's degree in the least to be considered a lecturer. The following tables show the current make-up of the teaching body for the three degree programmes:

Qualification	BPE	BP	BSTAT
Doctor	10	10	11
On-going Doctor	2	5	5
Master	3	4	6
Total	15	19	22

2 Qualifications of lecturers by degree, taken from the self-assessment report, p.19.

Academic Ranks	BPE	BP	BSTAT
Professor	3	2	4
Associate Professor	3	1	3
Assistant Professor	5	11	12
Instructor	4	5	3
Total	15	19	22

3 Qualifications of lecturers by academic rank, taken from the self-assessment report, p.19

As can be deduced from the tables most of the teaching staff of the three programmes hold doctor's degree or are actively pursuing one. The university strives toward more education within the teaching body so there are efforts to disseminate scholarship schemes, accelerated advanced learning programmes, and study completion assistance programmes. Depending on the study programme, there are two to four full professors. Most of the staff are, however, instructors or assistant professors. In addition to teaching staff, the administration is also supported by administrative staff, technicians, and laboratory staff at the study programme, faculty, and university levels. According to the assessors, the composition, professional orientation and qualification of the teaching staff are suitable for successfully delivering the degree programme.

In Indonesia, lecturers have to fulfil three duties each semester, i.e. teaching, research and community service. In this tridharma system lecturers gain credit points in accordance with the time they spend performing these duties. Teaching has the most heavy required amount of credits. Despite the good line-up and low staff-student ratio, the teachers during the audit concede that the teaching workload is particularly high. A reason for that might be the constant time consumed by the continuous assessment. The assessors take the lecturers' evaluation seriously and suggest to the university that, just with the students, the actual workload of the teaching staff should be verified.

UNY regularly invites visiting professors, usually one per year per study programme. Visiting professors are supposed to help students to get used to international education.

UNY has several incentives to support lecturers to do research either alone or in groups. This way, they are assisted in writing articles or taking part in international conferences. In the Ba Physics Education there is a research group on media and physics learning resources, on how to assess and evaluate physics education, and how to model and design physics curricula. The Ba Physics offers several research groups on, e.g. colloidal, atomic and nuclear physics, as well as geophysics and instrumentation and signals. The Ba Statistics does research in the realm of education and social sciences, economics and business as well as applied statistics.

Criterion 3.2 Funds and equipment

Evidence:

- Memoranda of understanding
- Tour of the facilities
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:

Founding at UNY comes from two sources, namely the State Revenue and Expenditure Budget, and non-tax revenue. The former consist of routine and development budgets and educational operational costs assistance. The non-tax revenue consists of donations, income from cooperation and services, UNY business profits, facility rental profits, and other profits from other income-producing units. At the beginning of each budget year the faculties hold annual activity and budgeting plans in order to plan the fiscal year. In the three study programmes, the coordinators submit budget proposals. During the audit, the staff responsible for the financial planning can demonstrate to the assessors that the money income of the university is steady and the budgeting processes between university, faculty and department are transparent.

Regarding infrastructure, the programme heads give the assessors a tour of the facilities. The assessors inspect classrooms and lecture halls of the facilities and can assure that the capacity and equipment is fully sufficient for the student body of the three programmes. The university has a library which students can use to work alone or in groups, as well as a computer centre. The university presents the laboratories that are particularly of interest for the Ba Physics and Ba Physics Education. The laboratories generally make an older impression. This holds true for the furniture as well as the equipment and devices that are

demonstrated during the audit. On the one hand, particularly regarding the Ba Physics Education, contact with older equipment is a positive matter because it may well reflect the status of the ones present in high schools where graduates will work in the future. On the other hand, as a university that strives towards participation in the international higher-education community it is sensible to invest in new equipment. The lab workers mention during the audit that funding for procuring equipment for the laboratories is not easy. While not an urgent request by the assessors, they want to suggest increasing the funding of the laboratories. Amidst the older equipment the university has already procured several devices recently, among them an atomic absorption spectrophotometer, a particle size analyser, an X-ray diffractometer, a UVV spectrophotometer and an FTIR spectrometer, which are used for research of staff and students. For the Ba Statistics there is a statistics laboratory available. It features sufficient space for students to work on computers that run necessary programming and data visualisation software. The general amount of equipment and the space in the labs is sufficient for all degree programmes under review. They allow the students to handle either individually or in small groups all important equipment and devices that is necessary for the course of study.

Apart from learning facilities, UNY offers several opportunities for students to engage in extracurricular activities. There is a student organisation building where student groups may meet. There are sports facilities around campus that contain courts for games, a fitness centre and a swimming pool. Lastly, UNY has its own clinic with health professionals providing both physical examinations and mental health counselling. The assessors are impressed with the extracurricular and medical services that UNY provides to its students. The students, too, enjoy the time at campus due to the various activities and offers.

UNY states that the university has over 300 cooperations with other universities and industrial partners, both domestic and international, that are marked by memoranda of understanding. In their self-assessment report they list as beneficial for these partnerships the publication of articles of national and international reputation, well-organised exchange of lecturers and VPs, as well as students participating in the credit transfer programme. During the audit the industrial partners present were mostly government agencies in cooperation with either of the three study programmes under review here. While the partnership with government agencies is important and necessary in all three degree programmes the assessors worry about a lack of agreement with private enterprises. The expert team states that the private sector can be an important employer, particularly for graduates of the Ba Physics and Ba Statistics, but the private sector remains underrepresented. This also means that the changes in the labour market and innovations thereof might remain undiscovered if the private sector is not sufficiently consulted during the review of the curriculum. This is

why the assessors want to suggest to UNY to expand its cooperation with industrial partners of the private sector.

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

Regarding the workload of lecturers the university states that it has been adjusted to the minimum requirements according to the national lecturer's workload of 12 credits total. The university makes use of learning management systems to reduce administrative work. The experts look forward to the lecturers' verdict to make a final assessment.

In terms of lab equipment, the university brings forth that the Indonesian Ministry of Research and Technology has allocated approx. 64,000,000,000 IDR to the university, most of which was used to improve the facilities. Furthermore, the university wants to enhance the cooperation with non-government partners. The assessors appreciate these processes.

Considering the statement, the assessors deem criterion 3 to be partially fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Module handbooks
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:

Module handbooks for the study programmes Ba Physics and Ba Physics Education are available online and contain all courses of each study programme. The module handbooks contain the name of a module, the semester in which it is regularly taught, as well as the names of the module coordinators and lecturers. Further information includes the language of instruction and the classification as either compulsory or elective. The teaching format is itemised as well as the workload and its conversion to Indonesian credits (SKS). Next to the course learning outcomes, the handbook further includes the expected

achievements, assessment methodology and weighing. Lastly, it lists recommended literature for each course. Since the handbooks are reviewed every semester the last date of an amendment is always the start of the semester in question.

During the audit, the assessors can confirm that the module handbook for the Ba Statistics, too, contains all relevant information as do the other study programmes. They examine the module handbooks as well as the much more detailed semester study plan and find everything to be listed as expected. However, on the department website, the module handbook cannot be accessed without permission. For transparency reasons the module handbooks need to be accessible to all interested parties, including prospective students.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Exemplary diploma
- Exemplary diploma supplement
- Exemplary grade transcript
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
Graduates of the three study programmes will receive a diploma, a grade transcript and diploma supplement, and, additionally for students of the Ba Physics Education, a teaching certificate. The diploma supplement and grade transcript are in Bahasa Indonesia and English and contain all modules taken by the individual student, the credits given as well as the grade and weighted grade. The documents break down the grading scale and list the learning outcomes of the respective programme. Lastly, there follows an overview of the Indonesian education system.

During the on-site visit the assessors examine the exemplary documents and can confirm that they contain all necessary data.

Criterion 4.3 Relevant Rules

Evidence:

- Academic regulation
- Ethics and rules for student association: https://unyku.id/student_ethic

- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
The university has set forth rules and regulations for all groups within UNY. Rules are accessible online. During the audit the students and lecturers confirm that they know about the guides and regulations and that they know where to find them.

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

During the audit, the module handbooks were not to be found on the website for all study programmes. With their statement the university corrected this oversight, making this criterion be wholly fulfilled according to the experts.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Internal quality assurance system
- Website of the university https://unyku.id/PeraturanSPMI
- Student evaluations
- Self-assessment report
- Discussion during the audit

Preliminary assessment and analysis of the experts:
As mentioned throughout the report the quality assessment at UNY is described by the assessors as a robust system. The university has an internal quality assurance system which covers guides for managers of all levels of the university. It describes quality management in regard to lecturers, students and employees, as well as standards of stakeholders. Quality standards, policy and procedures are available online.

Internal quality assessment of the degree programme is carried out through internal audits and evaluations. The internal audit is conducted every year by UNY's internal auditors. In

addition, monitoring and evaluating of all courses is carried out through a survey of university service satisfaction through the online platform, which involves students, lecturers, and academic staff. The students, for example, give their feedback on each course by filling out the questionnaire online. Giving feedback on the classes is compulsory for the students; otherwise they cannot access their grades for the course on the e-learning platform. The course evaluations are held during the final exam week and a compilation of the students' feedback is sent to the respective lecturer. During the audit the students state that they do not receive any feedback on the lecturer evaluation. The assessors think it important to inform the students of the effects of their feedback. Students state during the on-site visit that they can always voice criticism or concerns directly to their lecturers, their head of faculty or the dean and feel that they are taken seriously. The assessors would appreciate if this translates to the surveys as well.

As can be seen from this report student opinion is taken seriously in the internal quality assurance process and, on a programme level, they are well involved as stakeholders. There is a student association that functions as a communication channel between students and administrators of the three study programmes. During the audit it turns out that the student body is not at all represented on a university level. The assessors find their participation in matters on this organisational level to be very important which is why they want the university to consider the introduction of students on all levels of the university.

In summary, the assessors describe the quality assessment as a sound process that runs smoothly and takes feedback from various stakeholders seriously. The integration of student as stakeholders is hampered in the process of student evaluation and on the representation on a university level. Otherwise, the assessors deem the quality assurance to be complete.

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

The feedback loop of the student survey is closed according to the university. They point towards published report of the quality assurance unit in which the feedback is discussed. The assessors welcome the transparency; However, they deem this approach to be barely in favour of the students. According to them, a more direct feedback by the lecturers, i.e., on a course level, would be much more fruitful.

The university states, that there are student organisations at every level of the university. According to the experts the student representation still remains small and rather theoretical. They are of the opinion that student participation, especially at the university level, should be increased.

Taking into account the statement of the university, the assessors consider criterion 5 to be not 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:

No additional documents needed.

E Comment of the Higher Education Institution (03.09.2024)

The following quotes the comment of UNY:

No	Criteria	PIC	Results	Responses/Answers
1.	**The Degree Programme: Concept, Content, & Implementation**			
	a. Criterion 1.1. Objectives and Learning Outcomes of a Degree Programme		OK	
	b. Criterion 1.2. Name of the Degree Programme		OK	
	c. Criterion 1.3. Curriculum	1. 2. dst	Specifically for BA Physics, although the programme is good and module changes are not particularly necessary, the assessors noted a lack of theoretical physics modules, such as the Schrö-Dinger equation or difference. They suggested that the existing module content be modified to	We will modify the module content to cover theoretical physics aspects comprehensively. The first step we will take is to review the Module Handbook to identify parts that can be integrated with theoretical concepts without adding significant burden to students. We will also coordinate with lecturers to use an efficient physics learning approach so that students can understand theoretical physics material well without feeling burdened. The Schrö-Dinger equation is already included in the Quantum Physics course. (https://docs.google.com/document/d/105qp8YBf1SzmzJoMU3k2Nu_UirSrryEZkzzQvzfP2Lg/edit?usp=sharing). We inform you that theoretical physics content has been covered in the following courses.

No	Criteria	PIC	Results	Responses/Answers
			cover theoretical physics more comprehensively, without introducing additional workload for students.	1. Fisika Atom (Atomic Physics) 2. Relativitas Khusus (Special Relativity) 3. Mekanika Kuantum (Quantum Mechanics) 4. Fisika Nuklir (Nuclear Physics) 5. Fisika Statistik (Statistical Physics) 6. Fisika Kuantum (Quantum Physics) 7. Electromagnetism 8. Thermodynamics 9. Mechanics 10. Etc. The module for these courses can be seen at the following link. https://drive.google.com/drive/folders/1h-U3AeQg8gNoPDWiKwgK89gKY0Tc6wU4 or it can also be accessed on the study program website: https://fisika.fmipa.uny.ac.id/id/module-handbook
	d.		The assessors understand the identified mobility issues (low student participation despite the many opportunities offered by UNY) and would like to suggest that UNY increase the promotion of student mobility programs. In addition, UNY is advised to increase international cooperation and scholarships because the number is still small.	The improvement of mobility programs has been attempted by socializing mobility programs including the Indonesia International Student Mobility Award (IISMA) funded by the Ministry. However, the interest and motivation of students to participate in the program is still lacking. Improvement efforts that will be made are improving English language skills, as well as exploring cooperation with universities abroad, for example the Visiting Professor program, Summer Course, Indonesian Schools Abroad Internship (*Magang Sekolah Indonesia Luar Negeri*).
	e. Criterion 1.4. Admis-	1. 2.	The quota for each selection pathway is given by the university in its Standard Operating Procedures in	This suggestion is very good, and will be done for the evaluation of the selection results every year.

<table>
<tr><th>No</th><th>Criteria</th><th>PIC</th><th>Results</th><th>Responses/Answers</th></tr>
<tr><td></td><td>sion Re-quirements</td><td>dst</td><td>2022 as follows: a minimum of 20% from SNBP, 40% or more from SNBT and a maximum of 30% from independent selection. During the audit, the program coordinators stated that the current acceptance rate for independent selection is 50%. The assessors are concerned that because the testing is conducted without a standardized difficulty level, the testing method and the high acceptance rate of this group may affect the overall performance of students. The program coordinators do not have statistics on the individual performance of students from various admission pathways.

UNY is encouraged to make statistical analyses based on data on student performance from each entry pathway, and draw conclusions from these statistical reports.</td><td>The performance of the graduates based on three admission pathways (SNBP, SNBT, and Independent pathway through UTBK Score, awards and Academic Achievement)for the last 3 years has been analyzed and yield to the following results:

In Statistics Study Programme, the average GPA for the SNBP is higher than the other pathways, followed by students who passed the SNBT test. The lowest GPA was for students who were admitted from the independent pathway.

<table>
<tr><th>No.</th><th>Jalur masuk</th><th colspan="9">Rata-rata IPK, total lulusan sampai Agustus 2024</th></tr>
<tr><td></td><td></td><td colspan="3">Angkatan 2018</td><td colspan="3">Angkatan 2019</td><td colspan="3">Angkatan 2020</td></tr>
<tr><td></td><td></td><td>N cohort</td><td>N Graduates</td><td>GPA</td><td>N cohort</td><td>N Graduates</td><td>GPA</td><td>N cohort</td><td>N Graduates</td><td>GPA</td></tr>
<tr><td>1.</td><td>SNBT</td><td>3</td><td>13</td><td>3,46</td><td>4</td><td>9</td><td>3,61</td><td>9</td><td>6</td><td>3,80</td></tr>
<tr><td>2.</td><td>SNBP</td><td>4</td><td>9</td><td>3,55</td><td>3</td><td>9</td><td>3,63</td><td>4</td><td>9</td><td>3,76</td></tr>
<tr><td>3.</td><td>Independent selection: Based on national exam score</td><td></td><td>1</td><td>3,27</td><td>1</td><td>1</td><td>3,77</td><td>2</td><td>1</td><td>3,73</td></tr>
<tr><td>4.</td><td>Independent selection: Based on achievement awards</td><td></td><td></td><td></td><td></td><td>3</td><td>3,71</td><td></td><td>1</td><td>3,75</td></tr>
<tr><td>5.</td><td>Independent selection: Based on academic achievement</td><td></td><td>3</td><td>3,39</td><td>2</td><td>2</td><td>3,69</td><td>7</td><td>3</td><td>3,70</td></tr>
<tr><td>6.</td><td>Independent selection: Based on Computer based test at UNY</td><td>4</td><td>4</td><td>3,35</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>7.</td><td>Independent selection: Based on Computer based test at students' hometown</td><td></td><td></td><td></td><td></td><td></td><td></td><td>3</td><td>3</td><td>3,78</td></tr>
<tr><td>8.</td><td>Partnership programme</td><td></td><td></td><td></td><td>1</td><td>3</td><td>3,58</td><td></td><td></td><td></td></tr>
</table>
N cohort: number of students who register

In Physics Study Programme, the average GPA for the SNBT pathway is higher than other pathways, followed by students who passed the SNBP test and the lowest GPA was for students who entered the study program from the independent pathway.</td></tr>
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<table>
<tr><td rowspan="3">No.</td><td rowspan="3">Pathway</td><td colspan="9">GPA Average of the graduates by August 2024</td></tr>
<tr><td colspan="3">2018</td><td colspan="3">2019</td><td colspan="3">2020</td></tr>
<tr><td>N cohort</td><td>N graduates</td><td>GPA</td><td>N cohort</td><td>N Graduates</td><td>GPA</td><td>N cohort</td><td>N Graduates</td><td>GPA</td></tr>
<tr><td>1.</td><td>SNBT</td><td>10</td><td>18</td><td>3,53</td><td>6</td><td>20</td><td>3,70</td><td>14</td><td>17</td><td>3,71</td></tr>
<tr><td>2.</td><td>SNBP</td><td>3</td><td>23</td><td>3,52</td><td></td><td>24</td><td>3,61</td><td>5</td><td>18</td><td>3,71</td></tr>
<tr><td>3.</td><td>Independent selection: Based on national exam score</td><td>1</td><td>5</td><td>3,38</td><td></td><td>3</td><td>3,68</td><td>4</td><td>2</td><td>3,68</td></tr>
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<tr><td>5.</td><td>Independent selection: Based on academic achievement</td><td>1</td><td>1</td><td>3,50</td><td>2</td><td>8</td><td>3,54</td><td>6</td><td>6</td><td>3,70</td></tr>
<tr><td>6.</td><td>Independent selection: Based on Computer based test at UNY</td><td>3</td><td>11</td><td>3,55</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>8.</td><td>Partnership programme</td><td></td><td></td><td></td><td></td><td>2</td><td>3,60</td><td></td><td></td><td></td></tr>
</table>
N cohort: number of students who register

In Physics Education Study Programme,the average GPA for the independent pathway is higher than the average GPA for students entering from the SNBT and SNBP pathways. This is different compared to Physics and Statistics Study Programmes where the SNBP and SNBT pathways are higher to students accepted from the independent pathway.
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<table>
<tr><th>No</th><th>Criteria</th><th>PIC</th><th>Results</th><th>Responses/Answers</th></tr>
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<tr><td>4.</td><td>Independent selection: Based on achievement awards</td><td></td><td></td><td></td><td>1</td><td>3</td><td>3,60</td><td></td><td>1</td><td>3,80</td></tr>
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</table>
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</td></tr>
<tr><td></td><td>f. Criterion 1.5 Work-load and Credits</td><td>1.
2.

dst</td><td>Many students say that the first 2 years of college are very hard. Therefore, study programs are encouraged to verify the workload currently being implemented because perhaps the measurement is done by underestimating the effectiveness of student work.</td><td>The time allocation required for face-to-face meetings per 1 (one) credit unit is as follows.
a. Learning in the form of lectures, responses, or tutorials.
1) 50 minutes of face-to-face learning process.
2) 60 minutes of structured learning tasks, and
3) 60 minutes of independent learning assignments
b. Learning in the form of seminars or other similar forms consists of:.
1) Face to face activities 100 (one hundred) minutes, and
2) Independent activity 70 (seventy) minutes.

Workload verification is carried out routinely every year through a survey of all students. The results of the excessive workload survey have been submitted to the lecturers in charge of the courses so that they can complete the tasks/activities according to the course workload listed in the module handbook..

These three study programs have reviewed the semester learning plan/lesson plan every year to adjust the right</td></tr>
</table>

No	Criteria	PIC	Results	Responses/Answers
				learning strategy and adjust the time allocation and quantity of assignments. These three study programs (Physics Education, Physics, Statistics) will evaluate the curriculum, especially the course load for each semester in early 2025. Currently, the curriculum revision guide is being prepared by the curriculum development team at the university level.
	g. Criterion 1.6 Didactic and Teaching Methodology	1. 2. dst	From the SWOT analysis it is shown that some lecturers still use traditional methods which have an impact on the quality of students.	The university has held learning trainings to improve lecturer competency at least once a year. In addition, lecturers also get the opportunity to participate in trainings organized by external parties. https://penjamu.fmipa.uny.ac.id/id/artikel/peningkatan-mutu-dosen-fmipa-melalui-pelatihan-dan-uji-sertifikasi-kompetensi-lsp-penulis Implementation of lectures with team teaching, partnerships between senior lecturers and junior lecturers to support new technologies in lectures.
			The results of the interviews with partners also showed that graduates lacked confidence in their own abilities. Although still satisfactory, they have the potential to have more skills in communication and soft skills. Universities are encouraged to improve students' communication and presentation skills with more varied learning methods.	Soft skill development has been implemented at the study program level (in lectures such as teamwork, presentations, etc.), at the faculty level, and also at the university level. https://www.uny.ac.id/id/taxonomy/term/433
			Partners also stated that English language skills are one of the necessary factors. Therefore, universities are encouraged to increase the use of English in the teaching and learning process. This also needs to be prepared to increase student mobility.	Optimizing lecturers who have active English language skills to use English in learning. For lecturers who have passive English language skills, they can optimize the use of English language references and teaching materials. Specifically for the Physics Education study program, in the future courses related to teaching Physics in English will be added. This course equips students with the ability to teach Physics in English. The study program has encouraged lecturers to use English-language teaching materials even though the language of instruction is Indonesian. Increasing the number of Visiting Professors from native English countries.

No	Criteria	PIC	Results	Responses/Answers
				Student debates are also conducted in English to support English skills. International seminars are also organized by the faculty where there are native English speakers.
2.	**Exams: Systems, Concept and Organisation**			
	a. Criterion 2 Exams: Systems, Concept and Organisation		OK	
3.	**Resources**			
	a. Criterion 3.1 Staff and Staff Development	1. 2. dst	● Looking at the tridharma as the main task of lecturers, although structurally the ratio of lecturers: students is sufficient, the interview showed that the teaching workload is very high. This happens because of the ongoing tasks. The assessor suggested re-verifying the workload of lecturers, especially related to teaching and learning activities.	● The lecturer's workload has been adjusted to the minimum requirements according to the national lecturer's workload, namely the number of elements of education and research implementation is at least 9 credits, and the number of elements of service and support is at least 3 credits. The range of lecturer workload is a maximum of 16 credits. ● Learning management systems have been used to reduce the administrative burden on lecturers so that learning can be more efficient. ● Attendance system in Siakad.
	b. Criterion 3.2 Funds and equipment	1. 2. ds t	The lab looks old. Although the reason is quite reasonable by preparing the equipment they will use in high school, but for the international college community, it is expected to continue investing in new equipment so that	● UNY received an allocation of Rp. 64,188,004,000.00 from the Ministry of Research and Technology for the revitalization program for legal entity higher education institutions in 2024, most of which was used to improve facilities (91%). ● In relation to cooperation, we currently work more with the government sector because of the suitability of research needs or study program expertise. However, we acknowledge that this has led to a lack of involvement with the private sector. Therefore, to expand cooperation with the private sector, we have

No	Criteria	PIC	Results	Responses/Answers
			● UNY is advised to continue increasing funding for laboratories. ● In the audit, many partners are from government agencies. Although the cooperation of study programs with government agencies is quite important, the assessors are concerned about the lack of cooperation with the private sector. The expert team stated that the private sector could be an important partner, especially for graduates of the Physics and Statistics study programs, but participation from the private sector is very lacking. This means that changes in market needs and innovation are difficult to find if the private sector is not enough to participate in the curriculum review. For this reason, the assessors suggest that UNY expand cooperation with industrial partners of the private sector.	planned to expand partnerships with the private sector by: (1) identifying various private sectors that are relevant to graduate competencies, (2) sending students to private companies or institutions for internships and research, (3) involving the private sector in teaching practice programs, (4) involving representatives from the private sector in reviewing study program curricula.
4.	**Transparancy and Documentation**			
	a. Criterion 4.1 Module	1. 2.	● The Module Handbook has been provided well. However,	● The handbook module can be accessed on the study program website by all parties, including prospective students.

No	Criteria	PIC	Results	Responses/Answers
	Descriptions	dst	on the study program website, the module handbook cannot be accessed without permission. For transparency reasons, the module handbook needs to be easily accessible to all parties, including prospective students.	● BPE: https://pendidikan-fisika.fmipa.uny.ac.id/en/module-description ● BP: https://fisika.fmipa.uny.ac.id/en/module-handbook ● BStat: https://stat.fmipa.uny.ac.id/en/node/433
	b. Criterion 4.2 Diploma and Diploma Supplements	c.	OK	
	d. Criterion 4.3 Relevant Rules	e.	OK	
5.	**Quality management: quality assessment and development**			
	a. Criterion 5 Quality management: quality assessment and development	1. 2. dst	● The survey and feedback system is well established. In the audit, students stated that they can provide feedback directly to the relevant parties. However, students did not feel the results of the feedback, especially in the evaluation of lecturers. The assessor suggested that students should be informed especially about the	● While student feedback is indeed sent to the respective lecturer, it is also forwarded to the study program coordinator. The feedback is discussed at both the department and faculty levels during management review meetings (*Rapat Tinjauan Manajemen*/RTM). To ensure transparency, students can access the reports from these meetings on the faculty's quality assurance unit website https://penjamu.fmipa.uny.ac.id/id/laporan-berkala under the '*Laporan E-Monev*' section. For example, the report for 2023 can be viewed here: https://drive.google.com/file/d/19LhLgwWlbdMzKlyThrK9fMWfhopAEppW/view. ● Student participation at every level has been realized through student organizations starting from the department level called the Department's Student Association (*Himpunan Mahasiswa*/*HIMA*), for the faculty

No	Criteria	PIC	Results	Responses/Answers
			effects of their survey results. ● Although the study program has a student association, the audit found that the student body is not represented at the university level. According to the assessors, student participation at the university level is very important, so they want the university to consider student recognition and participation at all levels in the university.	level there is a student organization, namely the FNIS Student Executive Board (*Badan Eksekutif Mahasiswa*/*BEM*). In addition, there is Student's Organization (*Organisasi Mahasiswa*/*ORMAWA*) in FNIS in the fields of reasoning, art, and religion. At the university level there is the University Student Excecutive Board. Part of the program created by student organizations is student discussions related to learning. In addition, in Government Regulation No. 35 of 2022 concerning Universitas Negeri Yogyakarta becoming a Legal Entity University, Article 30 Paragraph 1 concerning members of the Board of Trustees (*Majelis Wali Amanat*/*MWA*) consisting of 17 people and 1 of them is a representative of students in point J of the regulation as a form of student participation at the university level in determining and establishing policies (https://drive.google.com/file/d/1gZFvrs4ai54x2ZGvlj8SAxuHToYJWgta/view) .

F Summary: Expert recommendations (05.09.2024)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label
Ba Physics	With requirements for one year	30.09.2029	–
Ba Physics Education	With requirements for one year	30.09.2029	–
Ba Statistics	With requirements for one year	30.09.2029	–

Requirements

For all programmes

A 1. (ASIIN 1.5, 3.1) Verify the workload for staff and students and monitor it more precisely.

A 2. (ASIIN 1.6, 2) Improve the students' communication and presentation skills, in both Indonesian and English.

A 3. (ASIIN 5) Students have to be informed about the results of the student surveys for each course. The feedback loop must be closed.

A 4. (ASIIN 5) The student body needs to be represented at the university level.

Recommendations

For all programmes

E 1. (ASIIN 1.3) It is recommended to increase the promotion of student mobility. International cooperation and scholarships, therefore, should be increased.

E 2. (ASIIN 1.4) It is recommended to verify that the quota of each admission channel does not negatively influence the quality of the student body.

E 3. (ASIIN 3.2) It is recommended to modernize the equipment.

E 4. (ASIIN 3.2) It is recommended to expand cooperation with the industrial partners to the private sector.

For the Bachelor's study programme "Physics"

E 5. (ASIIN 1.3) It is recommended to modify the content of existing courses to cover theoretical physics.

G Comment of the Technical Committees

Technical Committee 12 – Mathematics (09.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The expert committee discusses the requirements and recommendations proposed by the expert group. In particular, requirement A4 is discussed. Here, the expert committee is of the opinion that the university cannot be required to have students represented in committees at university level. However, since it makes a lot of sense for students to be directly involved in the further development of the degree programs, it is proposed to convert it into a newly formulated recommendation E5. Otherwise, the expert committee agrees with the expert group's assessment.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label
Ba Physics	With requirements for one year	30.09.2029	–
Ba Physics Education	With requirements for one year	30.09.2029	–
Ba Statistics	With requirements for one year	30.09.2029	–

Requirements

For all programmes

A 1. (ASIIN 1.5, 3.1) Verify the workload for staff and students and monitor it more precisely.

A 2. (ASIIN 1.6, 2) Improve the students' communication and presentation skills, in both Indonesian and English.

A 3. (ASIIN 5) Students have to be informed about the results of the student surveys for each course. The feedback loop must be closed.

Recommendations

For all programmes

E 1. (ASIIN 1.3) It is recommended to increase the promotion of student mobility. International cooperation and scholarships, therefore, should be increased.

E 2. (ASIIN 1.4) It is recommended to verify that the quota of each admission channel does not negatively influence the quality of the student body.

E 3. (ASIIN 3.2) It is recommended to modernize the equipment.

E 4. (ASIIN 3.2) It is recommended to expand cooperation with the industrial partners to the private sector.

E 5. (ASIIN 5) It is recommended to ensure that students' representatives are members of the relevant boards at programme level in order to involve them directly in further improving the degree programmes.

For the Bachelor's study programme "Physics"

E 6. (ASIIN 1.3) It is recommended to modify the content of existing courses to cover theoretical physics.

Technical Committee 13 – Physics (16.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure, particularly A1. Mr. Trefzger explains that this requirement does not only refer to the workload of the teaching staff, but also to their professional development, as most of them have a Master's degree. The TC also considers that the student's and teachings staff's workload should be treated separately and that a concept for the professional development should be provided. Therefore, an additional requirement A2 is proposed. In addition, the meaning and wording of A5, E3 and E5 are clarified and for A 4 is recommended using the standard wording.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label
Ba Physics	With requirements for one year	30.09.2029	–
Ba Physics Education	With requirements for one year	30.09.2029	–
Ba Statistics	With requirements for one year	30.09.2029	–

Requirements

For all programmes

A 1. (ASIIN 1.5) Verify the workload for students and monitor it more precisely.

A 2. (ASIIN 3.1) Establish a concept for the professional development of the teaching staff and for the reduction of the administrative workload.

A 3. (ASIIN 1.6, 2) Improve the students' communication and presentation skills, in both Indonesian and English.

A 4. (ASIIN 5) Close the feedback cycles and inform the students directly about the results of the course questionnaires

A 5. (ASIIN 5) The student body needs to be represented in the panels of the university.

Recommendations

For all programmes

E 1. (ASIIN 1.3) It is recommended to increase the promotion of student mobility. International cooperation and scholarships, therefore, should be increased.

E 2. (ASIIN 1.4) It is recommended to verify that the quota of each admission channel does not negatively influence the quality of the student body.

E 3. (ASIIN 3.2) It is recommended to modernize the equipment of the lab courses and for research.

E 4. (ASIIN 3.2) It is recommended to expand cooperation with the industrial partners to the private sector.

For the Bachelor's study programme "Physics"

E 5. (ASIIN 1.3) It is recommended to modify the content of existing courses to cover theoretical physics adequately.

H Decision of the Accreditation Commission (23.09.2024)

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

The Accreditation Commission discusses the procedure and generally follow the assessment of the experts. They agree to execute some editorial changes to make the requirements more comprehensible.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label
Ba Physics	With requirements for one year	30.09.2030	–
Ba Physics Education	With requirements for one year	30.09.2030	–
Ba Statistics	With requirements for one year	30.09.2030	–

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the workload for staff and students and monitor it more precisely.

A 2. (ASIIN 1.6, 2) Improve the students' communication and presentation skills, in both Indonesian and English.

A 3. (ASIIN 3.1) Establish a concept for the professional development of the teaching staff and for the reduction of the administrative workload.

A 4. (ASIIN 5) Close the feedback cycles and inform the students directly about the results of the course questionnaires.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to increase the promotion of student mobility. International cooperation and scholarships, therefore, should be increased.

E 2. (ASIIN 1.4) It is recommended to verify that the quota of each admission channel does not negatively influence the quality of the student body.

E 3. (ASIIN 3.2) It is recommended to modernize the equipment of the lab courses and for research.

E 4. (ASIIN 3.2) It is recommended to expand cooperation with the industrial partners to the private sector.

E 5. (ASIIN 5) It is recommended to ensure that student representatives are members of the relevant boards at programme level in order to involve them directly in further improving the degree programmes.

For the Bachelor's degree programme Physics

E 6. (ASIIN 1.3) It is recommended to modify the content of existing courses to cover theoretical physics adequately.

Appendix: Programme Learning Outcomes and Curricula

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Physics Education:

PLO-1:
To demonstrate professional ethics based on religious values and patriotism

PLO-2:
To demonstrate professional ethics based on academic values and scientific attitude

PLO-3:
To master the concepts, laws, principles, and theories of classical and modern physics, and their analytical methods

PLO-4:
To master pedagogical skills in the physics learning process

PLO-5:
To apply physics education research methodology, theory, curriculum, media and assessment to the physics learning

PLO-6:
To develop teaching materials in the fields of curriculum, media, and physics education assessment according to TPACK framework and local wisdom

PLO-7:
To publish the results of physics education research at least at the national level

PLO-8:
To demonstrate critical and creative thinking skills, adaptability, communication, and leadership

PLO-9:
To solve problems in physics learning and physics laboratory management

The following **curriculum** is presented:

Semester 1	
MKU6201	Religion Education
MKU6207	Civic Education
MKU6212	Digital Transformation

FMI6201	Studies of Mathematics and Natural Sciences
FMI6202	Statistics
FSK6303	Multivariable Calculus for Physics
FSK6209	Physical Measurement and Analysis
FSK6309	Electrical Circuit Analysis
FSK6414	Mechanics
Semester 2	
MKU6208	Pancasila Education
MKU6209	Bahasa Indonesia
MKU6211	English
FSK6304	Differential Equations for Physics
FSK6411	Analog Electronics
FSK6215	Analytical Mechanics
FSK6316	Vibrations and Waves
FSK6317	Thermodynamics
Semester 3	
MKU6213	Creativity, Innovation, and Entrepreneurship
MKU6216	Social Literacy and Humanity
FSK6305	Linear Algebra for Physics
FSK6312	Digital System
FSK6218	Statistical Physics
FSK6419	Electromagnetics
FSK6222	Special Relativity
FSK6324	Quantum Physics
Semester 4	
FSK6407	Computational Physics
FSK6313	Sensor
FSK6321	Optics
FSK6225	Atomic Physics
FSK6226	Nuclear Physics
FSK6227	Solid State Physics
FSK6228	Basic Colloidal Physics
FSK6229	Fluid Mechanics
FSK6231	Advanced Experimental Physics
Semester 5	
FSK6330	Research Methodology in Physics
FSK6232	Physics Laboratory Assistance
	Students take 10 sks (credits) from these elective courses:*
FSK6340	Measurement System*

FSK6341	Microcontroller*
FSK6344	Antenna*
FSK6346	System and Signal*
FSK6247	Crystallography*
FSK6348	Semiconductor*
FSK6251	Nano Physics*
FSK6254	Chemical Physics*
FSK6255	Advanced Colloidal Physics*
FSK6256	Light Scattering Technology*
FSK6358	Liquid Crystal*
FSK6260	Laser*
FSK6362	Atomic and Molecular Spectroscopy*
FSK6364	Reactor Physics*
FSK6267	Radiobiology and Radiation Protection*
FSK6268	Earth and Space Physics*
FSK6270	Seismology*
FSK6272	Meteorology and Climatology*
FSK6274	Physics of Natural Hazards*
	*Minor (outside the programme)***
Semester 6	
	Students take 13 sks (credits) from these elective courses:*
FSK6342	Electronic Amplifier and Filter*
FSK6343	Automation*
FSK6345	Modulation*
FSK6249	Semiconductor Fabrication and Characterization*
FSK6250	Thin Film*
FSK6252	Nanomaterials Characterization*
FSK6353	Soft Condensed Matter*
FSK6257	Surfactant Technology*
FSK6359	Monte Carlo Methods in Physics*
FSK6261	Photonics*
FSK6363	Biomedical Physics*
FSK6265	Reactor Kinematics Experiment*
FSK6366	Radiation Physics*
FSK6269	Physical Geology*
FSK6371	Geophysical Survey Methods*
FSK6273	Astronomy*
FSK6297	Philosophy of Physics*
	*Minor (outside the programme)***

Semester 7	
PKL6603	Internship
MKU6614	Community Service
Semester 8	
FSK6801	Undergraduate Thesis

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Physics:

PLO-1:
To show personal characters based on social ethics and academic responsibility

PLO-2:
To master the concepts of classical and modern physics

PLO-3:
To use mathematical, computational, and experimental methods in understanding physical concepts

PLO-4:
To use operational knowledge of physics to carry out research in applied physics

PLO-5:
To analyse physical phenomena using mathematical, computational, and experimental methods to obtain mathematical or empirical models of the phenomena

PLO-6:
To use instrumentation skills to solve physical problems

PLO-7:
To communicate and disseminate knowledge and research in the field of physics

PLO-8:
To collaborate in scientific and social community

The following **curriculum** is presented:

Semester 1	
MKU6201	Religion Education
MKU6207	Civic Education
MKU6212	Digital Transformation
FMI6201	Studies of Mathematics and Natural Sciences
FMI6202	Statistics
FSK6303	Multivariable Calculus for Physics
FSK6209	Physical Measurement and Analysis
FSK6309	Electrical Circuit Analysis
FSK6414	Mechanics
Semester 2	
MKU6208	Pancasila Education
MKU6209	Bahasa Indonesia

MKU6211	English
FSK6304	Differential Equations for Physics
FSK6411	Analog Electronics
FSK6215	Analytical Mechanics
FSK6316	Vibrations and Waves
FSK6317	Thermodynamics
Semester 3	
MKU6213	Creativity, Innovation, and Entrepreneurship
MDK6021	Educational Science
MDK6202	Educational Psychology
FSK6305	Linear Algebra for Physics
FSK6312	Digital System
FSK6218	Statistical Physics
FSK6419	Electromagnetics
FSK6324	Quantum Physics
Semester 4	
MDK6203	Management of Education
MDK6204	Socioanthropology of Education
FSK6313	Sensor
FSK6321	Optics
FSK6225	Atomic Physics
FSK6226	Nuclear Physics
FSK6227	Solid State Physics
FSK6222	Special Relativity
FSK6229	Fluid Mechanics
FSK6231	Advanced Experimental Physics
Semester 5	
MKU6216	Social Literacy and Humanity
PFI6201	Curriculum and Instructional Physics
PFI6202	Strategy of Instructional Physics
PFI6203	Instructional Physics Media
PFI6204	Instructional Physics Assesment
	Students take 2 sks (credits) from the following elective courses:*
PFI6210	Computer Based Media
PFI6311	Audio Visual Media
PFI6213	Physics Teacher Professional Development
PFI6214	School Physics Study
PFI6217	Measurement Theory and Techniques in Education

	*Minor (outside the programme)***
Semester 6	
PFI6305	Research Methodology in Physics Education
PFI6206	Physics Laboratory Management
PEN6201	Microteaching
	Students take 3 sks (credits) from these elective courses:*
PFI6312	Photography
PFI6315	Study of Physics Education Research Results
PFI6216	Learning Strategy and Management
PFI6218	Item Response Theory
PFI6319	Educational Research Data Analysis
PFI6220	Capita Selecta in Physics Education
	*Minor (outside the programme)***
Semester 7	
PKL6603	Educational Practice
MKU6614	Community Service
Semester 8	
FSK6801	Undergraduate Thesis

According to the self-assessment report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Statistics:

PLO-1:
To demonstrate faith in God Almighty and uphold human values based on religion, morals, and ethics

PLO-2
To appreciate the diversity of cultures, religions, beliefs, and opinions and contribute to a life of society, nation, and state-based on Pancasila

PLO-3
To demonstrate a responsible attitude according to academic ethics and professional ethics

PLO-4:
To master the basic concepts of statistics, programming, and statistical science for solving problems in various fields and supporting further studies

PLO-5:
To master some of the latest statistical and data science methods as the basis for lifelong learning

PLO-6:
To collaborate and think logically for solving problems, making decisions, and implementing science and technology

PLO-7:
To master the mathematical foundation for developing thinking related to statistics and probability through exploration, logical reasoning, generalisation, abstraction, and formal proof

PLO-8:
To perform collection, processing, and management data appropriately and effectively

PLO-9:
To perform analysis, presentation, and interpretation of data with the help of software on solving problems in various fields

PLO-10:
To develop algorithms in programming languages for solving statistical problems

PLO-11:
To apply current data science methods for solving problems appropriately

PLO-12:
To deliver creative and innovative ideas related to the development and application of statistics in spoken and written form

The following **curriculum** is presented:

Semester 1	
MKU6201	Religion Education
MKU6207	Civic Education
MKU6211	English
MKU6212	Digital Transformation
FMI6202	Statistics
STA6301	Logic and Set
STA6302	Basic Calculus for Statistics
STA6303	Linear Algebra and Matrices
STA6204	History and Ethics of Statistics
Semester 2	
MKU6208	Pancasila Education
MKU6209	Bahasa Indonesia
MKU6213	Creativity, Innovation, and Entrepreneurship
STA6305	Data Analysis and Visualization
STA6306	Nonparametric Statistics
STA6307	Advanced Calculus for Statistics
STA6308	Regression Analysis
STA6309	Algorithm and Statistical Programming
Semester 3	
MKU6216	Social Literacy and Humanity
FMI6201	Studies of Mathematics and Natural Sciences
STA6310	Experimental Design
STA6311	Statistical Optimization
STA6312	Probability Theory
STA6313	Sampling and Survey Techniques
STA6314	Database for Statistics
STA6315	Time Series Analysis
Semester 4	
STA6316	Mathematical Statistics
STA6317	Categorical Data Analysis
STA6318	Statistical Computation
STA6319	Introduction to Multivariate Statistics
STA6320	Research Design
STA6325	Educational Statistics
Semester 5	

STA6321	Linear Model
STA6322	Multivariate Statistics
STA6323	Statistical Machine Learning
STA6324	Data Mining for Statistics
STA6326	Statistical Simulation
STA6327	Bayesian Statistics
	*Elective and Minor**
Semester 6	
STA6328	Artificial Neural Networks
	*Elective and Minor**
Semester 7	
PKL6603	Internship
MKU6614	Community Service
Semester 8	
FSK6801	Undergraduate Thesis