



**ASIIN Seal**

## **Accreditation Report**

**Bachelor's Degree Programmes**

***Mathematics***

***Physics***

Provided by

**Universitas Tanjungpura, Indonesia**

Version: 26 June 2026

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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> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------|
| Program Studi Matematika                                                                                                                                                                                                                                           | Bachelor Programme in Mathematics (BPM)    | ASIIN                           | Very Good (BAN-PT Decision No. 4193/SK/BAN PT/Ak.KP/S/X /2023, 2022 - 2027) | 12                                              |
| Program Studi Fisika                                                                                                                                                                                                                                               | Bachelor Programme in Physics (BPP)        | ASIIN                           | Good (LAMSAMA Decision No 035/SK/LAMS AMA/Akred/S /V/2023, 2023 - 2028)     | 13                                              |
| <b>Date of the contract:</b> 24.04.2025<br><b>Submission of the final version of the self-assessment report:</b> 30.09.2025<br><b>Date of the audit (online):</b> 28.01. – 29.01.2026                                                                              |                                            |                                 |                                                                             |                                                 |
| <b>Expert panel:</b><br><br>Prof. Dr. Martin Buhmann, Justus-Liebig University Gießen<br><br>Prof. Dr. Rolf Haug, Leibniz University Hannover<br><br>Betty Handayani, PT. Epsilon Citra Informatika<br><br>Jihan Shafiyah ZT, Student Physics Brawijaya University |                                            |                                 |                                                                             |                                                 |
| <b>Representative of the ASIIN headquarter:</b><br><br>Dr. Natalia Vega                                                                                                                                                                                            |                                            |                                 |                                                                             |                                                 |

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

<sup>2</sup> TC: Technical Committee for the following subject areas: TC 12 – Mathematics; TC 13 – Physics.

|                                                                                                                                                                                                                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Responsible decision-making committee:</b><br><br>ASIIN Accreditation Commission                                                                                                                                                                                                                            |  |
| <b>Criteria used:</b><br><br>European Standards and Guidelines as of 15.05.2015<br><br>ASIIN General Criteria as of 28.03.2023<br><br>Subject-Specific Criteria of Technical Committee 12 – Mathematics as of 09.12.2016<br><br>Subject-Specific Criteria of Technical Committee 13 – Physics as of 20.03.2020 |  |

## B Accreditation Status

### Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 26.06.2026.

| Degree Programmes | ASIIN Seal                   | Validity                |
|-------------------|------------------------------|-------------------------|
| Ba Mathematics    | Accredited with requirements | 26.06.2026 - 17.10.2027 |
| Ba Physics        | Accredited with requirements | 26.06.2026 - 17.10.2027 |

### Fulfilment of the Accreditation Criteria

| ASIIN General Criteria / Subject-Specific Criteria                           | Ba Mathematics                    | Ba Physics                            |
|------------------------------------------------------------------------------|-----------------------------------|---------------------------------------|
| <b>1 Degree programme: Concept, Content &amp; Implementation</b>             |                                   |                                       |
| <i>1.1 Objectives and learning outcomes (intended qualification profile)</i> | Fulfilled                         | Fulfilled                             |
| <i>1.2 Title of the degree programme</i>                                     | Fulfilled                         | Fulfilled                             |
| <i>1.3 Curriculum</i>                                                        | Fulfilled                         | <b>Not fulfilled</b><br><b>A3</b>     |
| <i>1.4 Admission requirements</i>                                            | Fulfilled                         | Fulfilled                             |
| <i>1.5 Workload and credits</i>                                              | <b>Not fulfilled</b><br><b>A1</b> | <b>Not fulfilled</b><br><b>A1, A4</b> |
| <i>1.6 Didactics and teaching methodology</i>                                | Fulfilled                         | Fulfilled                             |
| <b>2 Exams: System, Concept and Organisation</b>                             |                                   |                                       |
| <i>2 Exams: System, Concept and Organisation</i>                             | Fulfilled                         | Fulfilled                             |

| ASIIN General Criteria / Subject-Specific Criteria              | Ba Mathematics                    | Ba Physics                        |
|-----------------------------------------------------------------|-----------------------------------|-----------------------------------|
| <b>3 Resources</b>                                              |                                   |                                   |
| <i>3.1 Staff and staff development</i>                          | Fulfilled                         | Fulfilled                         |
| <i>3.2 Student support and student services</i>                 | Fulfilled                         | Fulfilled                         |
| <i>3.2 Funds and equipment</i>                                  | Fulfilled                         | Fulfilled                         |
| <b>4 Transparency and Documentation</b>                         |                                   |                                   |
| <i>4.1 Module descriptions</i>                                  | Fulfilled                         | <b>Not fulfilled</b><br><b>A3</b> |
| <i>4.2 Diploma and Diploma Supplement</i>                       | <b>Not fulfilled</b><br><b>A2</b> | <b>Not fulfilled</b><br><b>A2</b> |
| <i>4.3 Relevant rules</i>                                       | Fulfilled                         | Fulfilled                         |
| <b>5 Quality Management: Quality Assessment and Development</b> |                                   |                                   |
| <i>5 Quality Management: Quality Assessment and Development</i> | Fulfilled                         | Fulfilled                         |

## Requirements

### For all degree programmes

- A 1. (ASIIN 1.5) Ensure that the expected workload and credit allocation for the internship are consistent with its duration and be communicated transparently to students.
- A 2. (ASIIN 4.2) Ensure that the Diploma Supplement provides statistical data on the distribution of final grades, as set out in the ECTS Users' Guide.

### For the Bachelor's Programme Physics

- A 3. (ASIIN 1.3, 4.1) The module descriptions need to be reviewed and updated. All compulsory and electives need to be included in the module descriptions. The module handbook needs to make clear in which compulsory modules fundamentals of molecular physics are taught.

- A 4. (ASIIN 1.5) Monitor the programme's average graduation time and remove structural barriers that lead to exceeded study periods.

## **Accreditation History**

The programmes have not been previously accredited by ASIIN.

## C Characteristics of the Degree Programmes

| a) Name                                    | Final degree<br>(original/English translation)               | b) Areas of<br>Specialization | c) Corresponding<br>level of the<br>EQF <sup>3</sup> | d)<br>Mode of<br>Study | e)<br>Double/Joint<br>Degree | f)<br>Duration | g) Credit<br>points/unit    | h) Intake<br>rhythm &<br>First<br>time of<br>offer |
|--------------------------------------------|--------------------------------------------------------------|-------------------------------|------------------------------------------------------|------------------------|------------------------------|----------------|-----------------------------|----------------------------------------------------|
| Bachelor<br>Programme<br>in<br>Mathematics | Sarjana<br>Matematika -<br>S.Mat/ Bachelor<br>of Mathematics | -                             | 6                                                    | Full<br>time           | no                           | 8<br>Semester  | 144 SKS<br>(240,48<br>ECTS) | 2002                                               |
| Bachelor<br>Programme<br>in Physics        | Sarjana Sains -<br>S.Si./Bachelor of<br>Sciences             | -                             | 6                                                    | Full<br>time           | no                           | 8<br>Semester  | 145 SKS<br>(242,15<br>ECTS) | 2002                                               |

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

### Introduction

Universitas Tanjungpura (UNTAN) is one of the oldest and most important public universities in West Kalimantan. It was founded on 20 May 1959 as a private university named Universitas Daya Nasional and had two faculties: Fakultas Hukum (Law) and Fakultas Tata Niaga (Commerce).

On 16 May 1963, Universitas Daya Nasional was nationalised and became a state university under the name Universitas Negeri Pontianak (UNEP). By 1967, the name was changed again to Universitas Tanjungpura by Presidential Decree. The name Tanjungpura honours the historic Kerajaan Tanjungpura (Tanjungpura Kingdom) — a pre-colonial polity that once existed in the region and symbolises cultural heritage and continuity.

The university now comprises nine faculties (Law, Economics and Business, Agriculture, Engineering, Medicine, Social and Political Sciences, Forestry, Mathematics & Natural Sciences, and Teacher Education) and plays a significant role in education, research, and community service in West Kalimantan.

Universitas Tanjungpura has a large student body, with currently estimates of around 30,000 + active students enrolled across its programmes. The university employs approximately 900–1,000 academic staff/lecturers across the faculties.

The Faculty of Mathematics and Natural Sciences (FMIPA) at Universitas Tanjungpura (UNTAN) offers a range of undergraduate and graduate programs in the natural sciences, including Mathematics and Physics. FMIPA is known for its strong academic foundation, active collaborations, and commitment to research and scientific development. FMIPA maintains more than 50 partnerships with national and international institutions, supporting student exchanges, research collaborations, internships, and community development activities. This makes FMIPA one of the university's most dynamic and externally connected faculties

### Summary

The expert panel concluded that the Bachelor's programmes in Physics and Mathematics are overall of excellent quality, with high satisfaction among students, lecturers, and employers. The programmes benefit from strong academic support, well-organized industry and alumni cooperation, modern Physics laboratory equipment, and valuable learning resources such as the American Corner.

While both programmes demonstrate strong overall performance, the experts identified several opportunities for further development. These include ensuring that the admission procedure does not contain any potentially discriminatory criteria. The experts also pointed

to a number of formal matters to be addressed, including the updating of all Diploma Supplements to include GPA distribution and workload information, as well as the revision and update of the Physics programme module handbook.

For the Bachelor's programme in Physics, the experts recommend developing a strategy to reduce the average time to degree. They further encourage the institution to strengthen scientific English training, advance internationalization efforts, enhance research capacity, extend internship duration, and continue upgrading classroom and laboratory facilities. Additional programme-specific recommendations include improving computer access for Mathematics students and providing targeted competition-related training for Physics students interested in taking part in science competitions.

The university provides following profile for the Bachelor's programme Mathematics (BPM):

"The vision of the Bachelor Programme in Mathematics is "To establish itself as a leading study program in advancing environmentally conscious mathematics and its applications, aimed at producing adaptable outcomes."

"To realize the Vision of the Bachelor Programme in Mathematics, the faculty determined three missions that specify the faculty and university missions, namely:

1. Advancing innovative and creative mathematical sciences to support the progress and application of science and technology.
2. Applying fundamental mathematical principles independently or in collaboration with other disciplines through education, research, and community service to enhance competitive value, focusing on improving the welfare of the people of West Kalimantan.
3. Building partnerships with various stakeholders to strengthen the relevance of teaching, research, and community service initiatives.

In order to carry out the management of the Bachelor Programme in Mathematics by the vision and mission that has been set, the existence of the Bachelor Programme in Mathematics has the purpose to:

1. Producing graduates who have superior academic abilities in the field of mathematics through the learning process.
2. Producing quality scientific research and publications that can be used as a reference for developing mathematics and other disciplines.

3. Producing graduates who are experts in analytical mathematics and geometry, algebra and combinatorics, applied mathematics, statistics and computer science and can develop and apply them independently or together with other sciences.
4. Solving problems in people's lives through mathematical science, manifested by relevant, solution, and innovative service activities."

For the Bachelor's programme Physics (BPP), following profile is presented in the curriculum document:

"The vision of the Physics Study Programme is 'To become an excellent institution in the transformation, development and dissemination of physics and its applications with globally competitive outcomes."

### Mission

1. "To organize integrated higher education activities aimed at producing high-quality outcomes that are adaptive to the advancement of science and technology, while upholding national identity and values.
2. To conduct focused, sustainable, and environmentally conscious research activities that are oriented toward the development of local potentials in West Kalimantan in support of achieving graduate learning outcomes.
3. To carry out community service activities that contribute to the improvement of environmental quality and societal well-being.
4. To establish constructive partnerships with various stakeholders."

### Objectives

"The Vision and Mission of the Physics Study Program, Faculty of Mathematics and Natural Sciences, Universitas Tanjungpura, are further elaborated into the following strategic objectives:

1. To produce highly qualified human resources capable of developing and disseminating physics and its applications.
2. To produce competent and adaptive graduates who demonstrate sound scientific attitudes, and are well-prepared to enter the workforce or pursue further education, either in the field of physics or in other relevant disciplines.
3. To generate scientific information and scholarly products that are accessible to both the scientific community and the general public.
4. To integrate physics with other disciplines in order to address challenges, problems, and societal needs within tropical environments.

5. To establish constructive collaborations with various stakeholders, including the scientific community and professional organizations, business and industry sectors, research institutions, higher education networks, and government agencies.”

## D Expert Report for the ASIIN Seal

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

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
| <b>Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)</b> |
|---------------------------------------------------------------------------------------------------------------|

**Evidence:**

- Self-Assessment Report (SAR)
- Curriculum document for each programme
- Module descriptions for each programme
- Objective-Module Matrix
- Tracer Study report for each programme
- Website UNTAN: <https://www.untan.ac.id>
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

The university states that each programme makes available its Programme Learning Outcomes (PLOs) and Intended Learning Outcomes (ILOs) through documents of curriculum, websites, and promotional materials. The university also provides a learning objectives-module matrix. This matrix describes the modules in which students learn the competencies envisaged in the PLOs. It also describes the alignment between ILOs and ASIIN SSC.

For both programmes under review, Universitas Tanjungpura (UNTAN) has outlined the intended learning outcomes (ILO). The ILO encompasses competencies, knowledge and skills involving affective, cognitive and psychomotor aspects, to be evaluated through the implementation of learning activities in each course. Furthermore, graduate profiles are established for each study programme, along with its corresponding Programme Learning Outcomes (PLO), which cover several profiles: For Bachelor's programme Mathematics (BPM), researcher, academic, consultant, practitioner, and for Bachelor's programme Physics (BPP), researcher, practitioner, laboratory officer, science communicator.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Mathematics and Physics and to the Objective-Module Matrix provided by the university as a basis for judging whether the intended learning outcomes of the Bachelor's degree programme Mathematics (BPM) and the Bachelor's degree programme Physics (BPP), as defined by UNTAN, correspond with the competences as outlined by the SSC.

Graduates of the BPM programme should possess strong competencies in mathematics, be able to compete on the global stage and be prepared to assume a variety of professional roles.

Graduates of the BPP programme will have the theoretical and practical competence in physics required for this field. They will also be able to solve real-world problems through scientific reasoning and adhere to the relevant ethical and professional standards.

According to the results of the tracer studies for the programmes under review, the average waiting time to find employment is less than six months. A high percentage of BPM graduates are employed in roles that directly align with their academic background, with at least 61% of BPP graduates securing employment at the local level or engaging in informal entrepreneurship.

The programme coordinators explain that Physics graduates typically enter non-traditional fields for physics alumni, such as the private industrial sector and entrepreneurship. Meanwhile, a consistent proportion of graduates pursue a career in education. In the field of mathematics, the majority of employers are statistics institutions. Some students secure employment within the company where they completed their internship.

Fig.1 illustrates the ILOS development process:

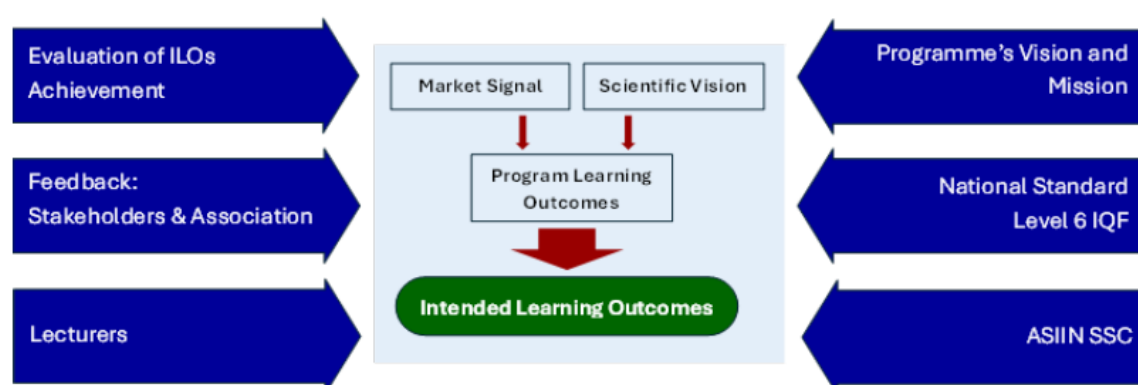


Figure 1: ILOS development process, Source: UNTAN Self-Assessment Report

The most recent review and update of the ILOs of the BPM and BPP was conducted in 2023. As stated by the university in the SAR, the development of the Intended Learning Outcomes (ILOs) for the BPM and BPP is based on collected feedback from lecturers, students, alumni,

and external stakeholders. The formulation process also considered labour market demands and the scientific orientation of each programme. Furthermore, ILOs established by the Indonesian Mathematics Society (IndoMS) for BPM and the Physical Society of Indonesia (PSI) for BPP were taken into consideration. These inputs were then aligned with the programmes' vision and mission, the level 6 descriptors of the Indonesian Qualifications Framework, the four competence categories outlined in the 2023 National Standard for Higher Education (SN-DIKTI 2023), and the ASIIN Subject-Specific Criteria (SSC).

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The descriptions of the qualification objectives for both programmes include the competences achieved and the possible career opportunities for graduates. The objectives and learning outcomes are made available to all stakeholders as they can be found on the university's website.

In summary, the expert group considers that the intended learning outcomes of the programmes are suitable for producing qualified graduates. Based on a learning objectives-module matrix describing the modules in which students learn the competences envisaged in the PLOs and the alignment between ILOs and ASIIN SSC, the experts conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification and correspond sufficiently with the ASIIN Subject-Specific-Criteria (SSC) of the Technical Committee 12 – Mathematics and of the Technical Committee 13 – Physics.

|                                                   |
|---------------------------------------------------|
| <b>Criterion 1.2 Name of the degree programme</b> |
|---------------------------------------------------|

**Evidence:**

- Self-Assessment Report (SAR)
- Diploma Supplement
- Graduation Certificates

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

UNTAN awards a Bachelor of Mathematics or Sarjana Matematika (S.Mat) and Bachelor of Science or Sarjana Sains (S.Si) to the graduates of the programmes under review.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

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

|                                 |
|---------------------------------|
| <b>Criterion 1.3 Curriculum</b> |
|---------------------------------|

**Evidence:**

- Self-Assessment Report
- Curriculum document for each programme
- Curriculum overview for each programme
- MBKM Handbook
- Module descriptions for each programme
- Objective-Module Matrix
- Internship Guidelines
- Statistics on students' mobility
- Website UNTAN: <https://www.untan.ac.id>
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

*Curriculum Structure and content*

Both programmes under review are full-time courses that lasts eight semesters. Upon completion, students will have earned 144 SKS (240.48 ECTS). The total credits are divided into three categories: compulsory, elective, and MBKM components. The compulsory modules also include general courses such as Pancasila, religion and ethics, civics education, Indonesian language. In addition, community service is carried out during the last year of study.

The Bachelor's programme in Mathematics (BPM) includes compulsory courses which cover core mathematics subjects (analysis, algebra, applied mathematics, statistics), and specific modules such as computational mathematics. The programme offers 72 SKS (120.24 ECTS) of elective modules, of which 44 SKS (73.48 ECTS) are available in odd semesters and 27 SKS (45.09 ECTS) in even semesters. Elective courses are available across different main areas of mathematics such as Analysis and Geometry (e.g. Introduction to Metric Spaces, Introduction to Topology), Algebra (e.g. Set Theory, Finite Group Theory, Linear Algebra Applications), Applied Mathematics (e.g. Dynamic Systems, Introduction to

Optimisation Theory), Statistics (e.g. Regression Analysis, Non-Parametric Statistics, Time Series Methods), Computer Science (e.g. Database, Comprehensive Mathematics). The programme also offers a range of informal study streams or optional specialisation areas, including Pure Mathematics, Applied Mathematics, Statistics and Data Science, and Computational Mathematics. Electives aligning with a stream can be selected in the fourth or fifth semester, once foundational courses have been completed. The choice is flexible, and electives from different clusters may be combined as required.

The Bachelor's programme in Physics (BPP) covers compulsory courses on core physics subjects (mechanics, quantum physics, electromagnetism and thermodynamics), programme-specific modules (e.g. computational physics), and supporting science, technology, engineering and mathematics (STEM) disciplines. The sequencing of modules ensures vertical and horizontal integration based on prerequisite structures and thematic progression. The BPP offers a selection of elective modules totalling 47 SKS (78.49 ECTS) in odd semesters and 39 SKS (65.13 ECTS) in even semesters, supporting academic flexibility and personalised learning pathways. From the fifth semester onwards, students may take up to 19 SKS (31.73 ECTS) from the available elective modules. In addition, students may also fulfil their elective credit requirements by enrolling in MBKM-recognised modules, up to a maximum of 40 SKS (66.8 ECTS), subject to approval by their academic advisor and alignment with the PLOs. The elective offerings represent the primary academic streams available in the BPP programme. These include the specialisation topics of Physics of Functional Materials, Physics of Environment, Medical and Energy, Physics of Instrumentation and Metrology, and Computational Physics and Intelligent Systems. From fifth semester onwards, students typically select a particular academic path by choosing a specific set of elective modules. They are guided by their academic interests and their intended thesis topic.

The experts clarify during the discussion on-site the specific content of modules of the BPM such as “Mathematical Rivalry” and “Capita Selecta”. The programme coordinators explain that Capita Selecta covers new topics in mathematics. Mathematical Rivalry prepare students for mathematics competitions.

The experts also ask about the procedure and support for students to choose among the elective courses offered. The programme coordinators state that BPM students are permitted to select electives from the third semester onwards according to their individual interests and their intended thesis topic, while in BPP, from the fifth until seventh semester is free to select electives and participate of the MBKM offers. In both cases, academic advisors give students advice for the selection of the electives. The students interviewed confirm this and are satisfied with the advisory system provided.

With regard to BPP, the experts seek to clarify whether the module Modern Physics includes contents to molecular physics, as this cannot be inferred from the module descriptions (which end with the Hydrogen line spectrum and Bohr's model). As stated by the programme coordinators fundamental aspects of molecular physics are covered by the course on Modern Physics. Likely, during the meeting with the teaching staff, the lecturer responsible for the module Modern Physics confirmed that fundamentals on molecular physics are included and approximately two weeks are dedicated for this content at the end of the course. Apparently, the information is missed or not clear in the English version of the content descriptions of the module.

Furthermore, both programmes offer optional internships as part of the MBKM-recognised modules or electives. These are typically scheduled in sixth or seventh semester and are designed to familiarise students with professional environments relevant to their academic background. As stated in the SAR, internships generally last up to four months and are hosted by partner organisations, including research institutions, private companies and governmental agencies with which the University or Faculty has formal cooperation agreements in place. Students are assigned an academic supervisor from the respective programme and a field supervisor from the external institution hosting the internship, who collectively monitor and guide the students' progress throughout the internship. Assessment is based on a written internship report, a presentation of the outcomes, and an evaluation by the field supervisor, all conducted using predefined rubrics.

Although the university maintains that internships generally last up to four months, the experts learn that some agreements with companies are for a shorter duration. The industry partners confirm this during the on-site visit. Some organisations offer internships for a period of four months, while others offer shorter internships of one month only which the experts found to be surprisingly short. The programme coordinators clarify that, within the framework of the MBKM programme, the internship is optional for the BPP. During the semester designated for the MBKM 20 ECTS, students have the option to select from a range of alternatives, comprising multiple offers totalling 20 ECTS for one semester, inclusive of an internship placement. In the MBKM system, the internship is typically four months in duration and is completed over the course of one semester. In the BPM, the internship is included in the curriculum in the fourth year of study. The total workload of the BPM internship, which is included in the curriculum, is 136 hours per semester. It is explained that, as a general rule, the internship is equivalent to 2 SKS (3 ECTS).

The faculty emphasises that they provide support to students to find the right internship placement. The industry partners recognise the positive collaboration with UNTAN and express satisfaction with the competencies and knowledge of the interns. Furthermore, the

students conveyed their satisfaction with the internship offers and the support provided by the faculty and teachers.

In general, the students express satisfaction with the structure and content of the courses, the support provided, and the variety of elective courses on offer.

#### Periodic Review of the Curriculum

The curriculum is subject to periodic review, at least every four years. The learning process is regularly and systematically monitored and evaluated. Furthermore, the learning process is evaluated through internal quality audits (AMI), which are conducted by audit teams under the coordination of the Office of Quality Assurance and Learning Development.

Curriculum mapping is a regular process that ensures that the modules are aligned with the ILO. Should a module be found to be outdated or misaligned with the programme's competence profile, based on feedback from stakeholders, tracer studies, or academic reviews, it will be revised or replaced through a formal process involving the Curriculum Development Team and approval by the Faculty Academic Senate.

In recent years, curriculum adjustments have been made to ensure a more robust alignment between the curriculum and the students' intended competence profile. These adjustments were based on both internal evaluations and external considerations, reflecting the programme's commitment to continuous improvement.

Both programmes under review are currently implementing the 2020 curricula, which underwent minor revisions in 2023 to strengthen the application of OBE principles.

#### **In their summative evaluation of the curriculum, the ASIIN expert team comes to the following conclusions:**

The curricula of both programmes under review are generally well structured. They consist of compulsory foundation courses in the first semesters. The electives offered provide opportunities for individual focus and study. In addition, students and graduates appear to be very satisfied with their respective programmes and feel well prepared for their future careers. The experts also are of the opinion that the curriculum is regularly reviewed and that suggestions and input from stakeholders are used as important considerations in the curriculum review process. Furthermore, the experts agree that UNTAN adequately promotes national and international student mobility.

In accordance with the requirements for Bachelor's Degree programmes outlined in ASIIN-Subject-Specific Criteria of the Technical Committee 13 (p. 3), graduates of Bachelor's degree programmes in physics are familiar with the fundamentals of quantum, atomic and molecular, nuclear, elementary particle and solid state physics. However, an examination

of the module handbook of **BPP** reveals that fundamental aspects of molecular physics are not covered by existing modules. Therefore, the experts conclude that the module descriptions of **BPP** needs to make clear in which compulsory modules fundamentals of molecular physics are taught (see below **Criterion 4.1**).

With regard to the internship, the experts understand that there are not many nationally scaled companies and types / fields of industries operating in West Kalimantan besides government agencies and a few local companies. However, they suggest that internships' duration should be transparently communicated. In addition, the workload and credits need to be in accordance with the real workload of the internship (see below **Criterion 1.5**)

### International Mobility

UNTAN facilitates semester-based outbound mobility through International Credit Transfer programmes funded by the Directorate General of Higher Education and 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 new policy of the Indonesian government actively supports any activities outside of the university by releasing a regulation on the Merdeka Belajar-Kampus Merdeka (MBKM), which requires the university to promote students who want to spent part of their Bachelor's programme outside UNTAN. UNTAN recognizes the courses taken by the students outside UNTAN, based on the comparability of the intended learning outcomes. The experts consider this regulation sufficient. Students' international academic mobility is supported by the Indonesian Government. For example, through Indonesian International Students Mobility Awards (IISMA), a scholarship programme from the Ministry of Education, Culture, Research and Technology.

The International Affairs Office of UNTAN 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 UNTAN, such as helping with housing, visa issues, and other practical matters.

The university has signed cooperation agreements with several higher education institutions and industry partners to support student mobility, research collaboration, and off-campus learning opportunities. These agreements serve as the institutional foundation for mobility activities under the MBKM scheme.

UNTAN currently runs a summer school in collaboration with a German university and has established partnerships with companies in Japan. In addition, they collaborate with a Swedish university to deliver online international courses. The Erasmus+ programme facilitates study at universities in France, for example. The Rectorate highlights that UNTAN is exploring the possibility of expanding these partnerships into more structured academic collaborations and with more international universities in countries such as Singapore, Malaysia and Thailand.

The rectorate also highlights the American corner, a partnership between UNTAN and the Public Affairs Section of the U.S. Embassy in Indonesia. It runs frequent English teaching and learning programs such as grammar classes, conversation/discussion clubs, movie screenings, games, and competitions. The American Corner offers 500 programmes and its E-Library has three million items to support English language learning.

The BPM and BPP both support student mobility by implementing the MBKM policy. The programmes offer up to 40 SKS (67.2 ECTS) for MBKM participation. UNTAN has an exchange programme with the University of Brunei Darussalam, which allows students to attend lectures at the University of Brunei Darussalam for one semester. Participants in this programme are granted scholarships by the Government of the Republic of Indonesia. According to the statistics on mobility provided by the UNTAN, the number of students in BPP and BPM who spend some time abroad remains relatively low, despite the high level of interest among students. Each year, a number of students participate in the MBKM programme. However, all of these stays, with the exception of those involving an exchange with Brunei, take place in Indonesia. These stays are conducted in the context of teaching at educational institutions, projects in villages, or short-term stays at other universities.

During the discussion with the experts, the students confirmed that there are some opportunities for international academic mobility, and that the credits acquired abroad are recognised at UNTAN. However, they wish more student mobility programmes and more support with preparation to study abroad, especially regarding English practice. It is suggested that the courses should include more English in order to improve students' speaking skills.

**In their summative evaluation of the mobility, the ASIIN expert team comes to the following conclusions:**

The experts acknowledge the efforts made by UNTAN to encourage international mobility and expand the cooperation with international institutions. They highlight that the American Corner is an excellent initiative that provides complimentary books to students and teachers, as well as an opportunity to work collaboratively and practise English. However, there is still potential for improvement with regard to international academic

mobility. Therefore, the experts recommend that the internationalisation strategy be enhanced by providing stronger support for student international mobility and facilitating and initializing more international exchange with foreign institutions. Following the students' feedback, the experts believe that there should be more extensive teaching in English in the courses and that training in English, with particular emphasis on technical mathematics and physics terminology, should be further expanded.

|                                             |
|---------------------------------------------|
| <b>Criterion 1.4 Admission requirements</b> |
|---------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Admission Guidelines UNTAN
- Admission Rate Statistics
- Website UNTAN: <https://www.untan.ac.id>
- Discussions during the audit

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

As stated in the SAR, admission procedures and policies for new students follow the national regulations in Indonesia, specifically Regulation No. 48 of 2022 issued by the Minister of Education, Culture, Research, and Technology. The process is based on regulations that are issued by the Rector every year, which determine the selection pathways, assessment mechanisms, available study places, and registration processes. The requirements, schedule, registration venue, and selection test are announced on UNTAN's webpage and thus accessible for all stakeholders.

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

1. National Entrance Selection of State Universities (Seleksi Nasional Berdasarkan Prestasi, SNBP), a national admission system, which is based on the academic performance during the high school.
2. Joint Entrance Selection of State Universities (Seleksi Nasional Berbasis Tes, SNBT). This nationwide computer-based written test (UTBK) 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), which may be supplemented with other criteria according to the regulations set by the different

universities (Academic State Universities, Vocational State Universities, or State Islamic Universities).

3. Institution Independent Selection (Seleksi Jalur Mandiri, SJM) UNTAN conducts this scheme. It offers an additional opportunity for students who are unsuccessful in the SNBP or SNBT processes. The selection criteria are based on internal university policies and may involve additional assessments. The SJM scheme follows the Rector's Decree Number 1816/UN22/TM.00/2024, issued on 2 May 2024.

The SNBP and SNBT schemes are fully prepared by the Indonesian Committee for National Selection of Prospective Students Admission (Seleksi Nasional Penerimaan Mahasiswa Baru, SNPMB), while the institution fully regulates the SJM scheme. Each state university sets the minimum quota for the SNBP pathway at 20%, the SNBT pathway at 40%, and the SJM pathway at 40%. All information about the requirements, how to register, the stages of the registration process, exam schedules, and announcement of selection results are managed by this agency. Provisions regarding the selection mechanism for new student admissions can be accessed via the UNTAN homepage which can be accessed by all prospective students both domestically and abroad. Apart from information regarding entrance selection, the website also provides information about service standards and mechanisms for carrying out lecture activities as outlined in academic guidelines.

International students can apply for admission through a separate mechanism regulated by the university. Foreign applicants may be prospective new entrants or students transferring from international institutions. Requirements include the submission of recognised academic qualifications, proof of language proficiency (if required), and fulfilment of visa and immigration regulations.

The recognition of externally acquired academic qualifications is governed by national regulations. Universities are required to carry out a formal credit equivalency check. This is verified by the Ministry's official recognition system for qualifications from foreign institutions. The recognition process involves careful consideration of curriculum compatibility, the total study load, and the academic standing of the student.

According to UNTAN's admission guidelines (Section VIII), applicants with colour blindness are not admitted to certain degree programs. However, the experts have noted that the degree programs in question—with the exception of the medical program—are not specified in detail. Therefore, it is unclear whether this also applies to the programmes under review.

Based on the admission rate statistics (see Fig. 2 and 3), since 2020, the admission rate for BPM is stable despite fluctuations, while in BPP, this shows high volatility:

### ***Bachelor Programme in Mathematics***

| Year <sup>1</sup> | Applicants | Available Seats | Admitted Students | Admission Rate (%) <sup>2</sup> |
|-------------------|------------|-----------------|-------------------|---------------------------------|
| 2020              | 234        | 70              | 68                | 97.14%                          |
| 2021              | 261        | 70              | 68                | 97.14%                          |
| 2022              | 203        | 70              | 59                | 84.29%                          |
| 2023              | 128        | 70              | 56                | 80%                             |
| 2024              | 127        | 70              | 60                | 85.71%                          |

Figure 2: Admission Rate BPM, Source: Appendix 12.1 Statistics on Admission Rate

### ***Bachelor Programme in Physics***

| Year | Applicants | Available Seats | Admitted Students | Admission Rate (%) |
|------|------------|-----------------|-------------------|--------------------|
| 2020 | 71         | 70              | 29                | 41.4 %             |
| 2021 | 160        | 70              | 43                | 61.4 %             |
| 2022 | 101        | 70              | 45                | 64.3%              |
| 2023 | 31         | 70              | 13                | 18.6%              |
| 2024 | 52         | 70              | 24                | 34.3 %             |

Figure 3: Admission Rate BPM, Source: Appendix 12.1 Statistics on Admission Rate

The experts request clarification regarding the reasons for the decrease in the number of applications and admissions to the Physics programme. The programme coordinators report that the number of applicants has decreased since the pandemic. It is likely that this is related to the changes that have been made to the senior high school curriculum. Physics is no longer a mandatory subject, but it is available as an elective at the end of the school. Therefore, it is likely that students lack interest in physics, as they are not yet familiar with the subject. The head of the programme highlights that the strategy to increase the number of applicants involves promoting the programme more widely through school visits to explain what physics is. Furthermore, a special programme in Kalimantan Barat is in place that involves the study of physics on a bi-monthly basis on national television. The objective of this initiative is to motivate and increase the interest of young people in the subject. The experts understand the situation and believe that the strategy is adequate.

In addition, the experts learn that applicants for Bachelor's programmes at Indonesian state universities must generally be no older than 25 years on 1 July of the admission year. In SNBP, no gap year after school is allowed and, in SNBT, effectively up to 2 years after school. If the application is made via Independent Selection (SJM Mandiri) or at private universities, rules can be more flexible, but it's not guaranteed—some institutions may still impose limits such as age cap or years since graduation.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The admission rules are published on the university's website and provide potential students with detailed information on the requirements and steps necessary to apply for

admission to the programmes. The experts recognise the university's policy of treating all individuals equally. However, the experts conclude that students must not be excluded on the basis of colour blindness. In addition, they conclude that the Bachelor's admissions eligibility criteria (age cap and/or limitation to recent graduation cohorts) create systematic barriers for qualified applicants, particularly non-traditional learners, and is not demonstrably necessary to protect academic standards. The experts recommend implementing equivalent alternative pathways for excluded applicants and document objective justification, proportionality, and monitoring. The programmes under review should ensure equitable access to study by eliminating admissions exclusions based solely on age and/or time since secondary-school graduation. Where external national selection rules impose such limits, an equivalent alternative entry route (e.g., mature-entry assessment and/or bridging pathway) that enables qualified applicants outside the capped cohort to compete fairly for admission should be introduced. Any remaining age/time restriction must be supported by objective justification and proportionality evidence. Admissions and student-success outcomes should be monitored by age group and entry route as part of continuous improvement.

|                                           |
|-------------------------------------------|
| <b>Criterion 1.5 Workload and credits</b> |
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**Evidence:**

- Self-Assessment Report
- Curriculum document for each programme
- Curriculum overview for each programme
- Academic Guidelines
- Module descriptions for each programme
- Guidelines for Calculating European Credit Transfer and Accumulation System Conversion (ECTS) Student Study Load
- Statistics on Academic Success
- Samples EDOM (Student Evaluation of Lecturer) UNTAN
- Website UNTAN: <https://www.untan.ac.id>
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

Based on the National Standards for Higher Education of Indonesia (SNPT), both programmes under review use a credit point system called Satuan Kredit Semester (SKS). UNTAN use a credit system based on student workload.

For regular classes, 1 SKS of academic load for the undergraduate programme is equivalent to 3 academic hours, which equals 160 minutes. This includes:

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

For lab work, final project, fieldwork, community service and other similar activities, 1 SKS is equivalent to 170 minutes a week of student's activities.

The maximum number of SKS that can be taken by students is determined by their GPA from the previous semester. In the first academic year, students are expected to undertake a fixed study load of 20 SKS per semester. Students who successfully complete the first year with a semester GPA above 3.00 and maintain academic integrity are eligible to enrol in up to 24 SKS per semester.

According to the Self-Assessment Report, UNTAN uses a fixed conversion factor of 1.67 between SKS and ECTS points. The reasoning behind this calculation is that one SKS equals 170 minutes (2.83 hours). As the semester lasts for 16 weeks  $2.83 \times 16 = 45.28$  hours per semester. As UNTAN calculates 27 hours of students' workload for one ECTS point, this total workload is then divided by 27 to get the conversion factor:  $45.28 / 27 = 1.67$ .

The total workload of 144 SKS (240.48 ECTS) for both programmes under review is structured to be completed within eight semesters. Each semester comprises 16 weeks of learning, including midterm and final examinations, with two semesters constituting one academic year. The average length of studies for both undergraduate programmes under review is depicted in Fig. 4 and 5:

***Bachelor Programme in Mathematics***

| Cohort Year | Total Enrolled | Graduated on Time<br>(8 Semester) | Graduated Late<br>(> 8 Semester) | Still Enrolled | Dropped Out |
|-------------|----------------|-----------------------------------|----------------------------------|----------------|-------------|
| 2015-2016   | 64             | 9                                 | 32                               | 0              | 23          |
| 2016-2017   | 60             | 10                                | 34                               | 0              | 16          |
| 2017-2018   | 63             | 4                                 | 39                               | 0              | 20          |
| 2018-2019   | 79             | 8                                 | 40                               | 0              | 31          |
| 2019-2020   | 66             | 5                                 | 42                               | 8              | 11          |
| 2020-2021   | 68             | 9                                 | 34                               | 20             | 5           |
| 2021-2022   | 68             | 21                                | 0                                | 42             | 5           |
| 2022-2023   | 59             | 0                                 | 0                                | 55             | 4           |
| 2023-2024   | 56             | 0                                 | 0                                | 48             | 8           |
| 2024-2025   | 60             | 0                                 | 0                                | 59             | 1           |

Figure 4: Graduation time BPM, Source: Appendix 16.1 Statistics on Academic Success

***Bachelor Programme in Physics***

| Cohort Year | Total Enrolled | Graduated on Time<br>(8 Semester) | Graduated Late<br>(> 8 Semester) | Still Enrolled | Dropped Out |
|-------------|----------------|-----------------------------------|----------------------------------|----------------|-------------|
| 2015-2016   | 52             | 3                                 | 21                               | 0              | 28          |
| 2016-2017   | 56             | 1                                 | 29                               | 0              | 26          |
| 2017-2018   | 60             | 1                                 | 31                               | 0              | 28          |
| 2018-2019   | 68             | 8                                 | 24                               | 0              | 36          |
| 2019-2020   | 51             | 10                                | 25                               | 2              | 14          |
| 2020-2021   | 29             | 14                                | 6                                | 6              | 3           |
| 2021-2022   | 43             | 10                                | 0                                | 24             | 9           |
| 2022-2023   | 45             | 0                                 | 0                                | 35             | 15          |
| 2023-2024   | 13             | 0                                 | 0                                | 12             | 1           |
| 2024-2025   | 24             | 0                                 | 0                                | 21             | 3           |

Figure 5: Graduation time BPP, Source: Appendix 16.1 Statistics on Academic Success

On average, students complete the BPM course in nine semesters, as stated by the university. In comparison, students on the BPP course typically require an average of 11 semesters to complete the course.

With regard to the time students need to graduate from the programmes, experts seek to understand the reasons for the long time for graduation required in BPP. The programme coordinators clarify that, as the teaching evaluations have shown, students may find it challenging to successfully complete some courses in the previous curriculum, especially two courses in the same semester, such as quantum physics and modern physics, simultaneously. In such cases, students are required to retake the courses, resulting in a more extensive course length. In order to improve the situation, the previous curriculum was reviewed, and these issues were given full consideration. All students will be transitioning to the new curriculum.

As described above (see **Criterion 1.3**), according to the information in the SAR, internships generally last up to four months. However, it has been noted by the experts that some agreements with companies are for a shorter duration. The industry partners confirm this during the on-site visit. Some organisations offer internships for a period of four months,

while others offer shorter internships of one month. The programme coordinators clarify that, within the framework of the MBKM programme, the internship is optional for the BPP. During the semester designated for the MBKM 20 ECTS, students have the option to select from a range of alternatives, comprising multiple offers totalling 20 ECTS for one semester, inclusive of an internship placement. In the MBKM system, the internship is typically four months in duration and is completed over the course of one semester. In the BPM, the internship is included in the curriculum in the fourth year of study. The total workload of the BPM internship, which is included in the curriculum, is 136 hours per semester. It is explained that, as a general rule, the internship is equivalent to 2 SKS (3 ECTS).

The students interviewed generally feel that the workload is manageable, that they have sufficient time for leisure and hobbies, and that the expectations are realistic.

As stated by the university, at the end of each semester, feedback is collected in order to evaluate whether the projected workload aligns with students' experiences. The samples of the teaching questionnaires provided include some questions regarding workload. The aggregated results are used to identify any mismatch between expected and actual workload. Students confirm that the evaluation of the modules contain some questions regarding workload. In addition, the student workload is regularly reviewed through the AMI as part of the internal quality assurance system. An inter-semester programme is also provided to mitigate workload buildup due to students failing to pass some modules during the regular semester. This programme allows students to remedy their failures in some modules in a condensed format during the academic break.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

UNTAN applies a credit system that is explicitly based on student workload. The panel finds that the workload expectations are transparently communicated through the credit allocation and course planning, and they are considered realistic, as confirmed by student feedback. The panel also notes that workload is monitored regularly through programme review mechanisms and study progression data.

For the BPP programme, the panel acknowledges that programme management recognises the extended average time-to-degree and has already introduced measures to address it. However, the panel considers it essential to implement a structured monitoring strategy with clear indicators and a defined review cycle to demonstrate sustained reductions in study duration.

For both programmes under review, BPM and BPP, the duration and workload expectations for internships need to be communicated more explicitly. Internship credits (SKS, and ECTS equivalence where applicable) must be demonstrably aligned with the actual student workload, including supervision, reporting, and assessment requirements. UNTAN needs to ensure that credits awarded for the internship consistently reflect verified workload.

|                                                        |
|--------------------------------------------------------|
| <b>Criterion 1.6 Didactic and Teaching Methodology</b> |
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**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Guidelines Use of Generative Artificial Intelligence at UNTAN
- Module descriptions for each programme
- MBKM Handbook
- Objective-Module Matrix
- Website UNTAN: <https://www.untan.ac.id>
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

Various teaching and didactic methods are implemented in the programmes under review such as interactive learning, experiment-based learning, case-based learning and project-based learning.

Students are gradually introduced to independent scientific work through a structured sequence of modules designed to equip them with the skills to identify research problems and apply appropriate methods to address them.

From fifth semester onwards, BPM and BPP students can choose from various elective modules to strengthen research skills and domain-specific knowledge. In BPM, these electives incorporate project-based and research-oriented assignments. For BPP, the programme coordinators explain to the experts that lab work is included in almost each course and most elective courses integrate also lab work. In addition, the MBKM scheme and guided independent study options further promote flexible, cross-disciplinary learning. Moreover, students gain practical experience through the internship and KKN activities (Student Community Service).

The experts also discuss with the teaching staff how is the use of AI tools by students

treated by the university and how they do handle the use of AI in their courses. The lecturers state that it is allowed to use AI in the courses according to the guidelines of the University. They support and explain students how to use AI appropriately. In addition, UNTAN organized a join workshop regarding AI supported. This guideline was formulated to ensure that AI tools, particularly generative AI, are utilised responsibly and ethically in line with academic integrity principles. In addition, UNTAN also refers to the national guideline on generative AI issued by the Directorate of Learning and Student Affairs of the Ministry of Education, Culture, Research, and Technology, thereby aligning institutional practices with broader national standards.

Students express high levels of satisfaction with both the teaching methods employed and the learning management system used by the university. However, the BPP students would appreciate further training and tutoring from the faculty to prepare them for future competitions.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The teaching methods and instruments are considered suitable by the experts for supporting the students in the achievement of the intended learning outcomes. In addition, they confirm that the study concept of the undergraduate programmes under review comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. In light of student feedback, the review panel recommends that the Physics department strengthen support for BPP students wishing to participate in science competitions, for example through additional training, tutoring, or mentoring opportunities.

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

UNTAN acknowledge in its statement that molecular physics content was insufficiently described in the module description for BPP, although it was already taught briefly within the Modern Physics course. The BPP module handbook has been updated to explicitly include these topics. Additionally, a new compulsory course, Atomic and Molecular Physics, will be introduced in the 2026 curriculum to provide more comprehensive coverage. To provide evidence, UNTAN has submitted the updated sections of the module descriptions. The experts consider the described changes in the curriculum to be adequate and acknowledge the efforts taken by the programmes. However, as the new curriculum and module handbook will be implemented in August 2026, the requirements (A3) in this regard will be maintained.

With regard to admission requirements, the university responds to concerns about inclusiveness in admissions by emphasizing both non-discrimination and flexible access routes. First, regarding colour blindness, UNTAN clarifies that it is not an admission barrier for the BPM and BPP programmes, and normal colour vision is not required, as evidenced by the provided registration announcement document. Where colour perception is relevant (e.g. in laboratory work), the programmes will provide academic support, safety measures, and reasonable accommodations instead of excluding applicants, thereby maintaining both safety and equal opportunity. Second, in response to concerns about age limits and restrictions on recent graduates, the university has introduced the Recognition of Prior Learning (RPL) scheme, as demonstrated by the provided Rector Regulation No. 01 of 2025, Chapter III, Section Two, Article 5. This provides an alternative admission pathway for non-traditional applicants by recognising prior formal education (Type A) and work experience, training, professional certifications, or non-formal learning (Type B). Candidates are assessed through portfolio evaluation, competency recognition, and credit transfer, aligned with programme learning outcomes rather than age or graduation year. If needed, admitted students may take bridging or matriculation courses to ensure readiness, allowing broader access while upholding academic standards. The experts conclude that the mentioned alternative pathways are quite acceptable and certainly helpful. They suggest not to maintain this requirement.

In addition, BPM and BPP acknowledge that internationalisation and student mobility remain limited and need more structured development. In response, they have expanded regional collaborations, international programmes, and partnerships, while gaining experience in managing academic exchanges. They plan to further strengthen mobility through better promotion, student support, preparation, and expanded international partnerships. BPM and BPP have also started integrating English into selected courses through teaching, materials, and assignments to improve students' technical language skills. They will further strengthen this by introducing a dedicated Academic English course in 2026 and increasing the use of English-language references. Overall, they plan to expand bilingual and English-medium instruction as part of their internationalisation strategy. The experts welcome these plans. As this is an ongoing process, the recommendations will be maintained for long-term development.

Regarding the internships, BPM and BPP state that their internship system has been improved through updated guidelines covering duration, workload, credits, supervision, and assessment. They define a short internship (2 SKS, 30 days) and longer MBKM or independent internships (up to 20 SKS, minimum three months). To ensure consistency, student workload and credit allocation are verified through logbooks, reports, presentations, and supervisor evaluations. Monitoring and documentation have been

strengthened to ensure credits accurately reflect students' actual workload and learning activities. As evidence, the updated module descriptions for the internship in both programmes were provided. The experts welcome these changes. However, as the updated curriculum and module handbook will only be implemented in August 2026, the requirement (A1) will be maintained.

Moreover, BPP acknowledges that long study durations are mainly caused by delays in completing the undergraduate thesis, exacerbated by COVID-19 disruptions and lengthy administrative procedures. To address this, the programme has streamlined thesis processes since 2026 through simplified administration, revised evaluation methods, scheduled seminar and defence periods, and stronger academic monitoring. Early results show improved efficiency and a reduction in thesis completion time, with ongoing monitoring for further improvement. The experts acknowledge these explanations and measures. However, these measures are not yet sufficient, and their development should be monitored in the long term; therefore, the requirement will be maintained.

BPP has also strengthened support for student participation in science competitions by introducing structured mentoring and training programmes. These include coaching, academic guidance, and proposal support for competitions such as ON-MIPA and PKM, backed by faculty funding. As a result, competition preparation is now a regular, systematic activity aimed at improving student performance and competitiveness. The experts commend these measures and consider them to be appropriate and sufficient.

## 2. Exams: System, concept and organisation

|                                                            |
|------------------------------------------------------------|
| <b>Criterion 2 Exams: System, concept and organisation</b> |
|------------------------------------------------------------|

**Evidence:**

- Self-Assessment Report (SAR)
- Academic Guidelines
- Module descriptions
- UNTAN Academic Guidelines
- Handbook for the Preparation and Writing of the Undergraduate Thesis
- Rules for Disabilities
- Discussions during the audit

### Preliminary assessment and analysis of the experts:

As outlined in the SAR, the academic schedule is prepared and announced prior to the commencement of each semester. Written examinations in the BPM and BPP are conducted in accordance with the academic calendar. Mid-semester examinations are held over one week, while two weeks have been allocated for end-of-semester examinations.

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

Courses with grades A, B+, B, C+, C, D+ and D are declared passed, E grades are declared not passed. The exam score for one course is determined with a score from 0 (zero) to 100 (one hundred). Each of the grades carries a numeric value for the purpose of calculating a weighted average on a 4.00 scale. These values are indicated below:

| Numerical Range                 | Grade | Quality Letter | Quality Score | Ability Class              |
|---------------------------------|-------|----------------|---------------|----------------------------|
| $80 \leq \text{grade} \leq 100$ | A     |                | 4,0           | Excellent                  |
| $75 \leq \text{grade} < 80$     | B+    |                | 3,5           | Between Very Good and Good |
| $70 \leq \text{grade} < 75$     | B     |                | 3,0           | Good                       |
| $65 \leq \text{grade} < 70$     | C+    |                | 2,5           | Between Good and Enough    |
| $60 \leq \text{grade} < 65$     | C     |                | 2,0           | Enough                     |
| $55 \leq \text{grade} < 60$     | D+    |                | 1,5           | Between Enough and Less    |
| $50 \leq \text{grade} < 55$     | D     |                | 1,0           | Less                       |
| $0 \leq \text{grade} < 50$      | E     |                | 0,0           | Fail                       |

Figure 6: Standards for assessment, Source: Appendix 01.1 Academic Guidelines

Students who find themselves unable to attend exams due to illness, pregnancy or caring responsibilities may be eligible for academic compensation. FMIPA has established a formal policy and procedure for compensating disadvantages experienced by students with disabilities. This includes measures such as extended examination time, alternative assessment formats, assistive technologies, flexible attendance, and physical accessibility adjustments.

Following each assessment, students are entitled to receive feedback on their assignments and exams. Those who are not satisfied with their results may request a review of their assessment records with the lecturer. In the event of a student not passing, they will be offered the opportunity to undertake remedial work, which may include additional structured assignments and make-up examinations.

Another activity conducted outside the institution is the Community Service/Kuliah Kerja Mahasiswa (KKM), which carries a study load of 2 SKS, and the MBKM programme. The assessment of Community Service (KKM) and Independent Learning (MBKM) is based on field activities involving external parties' assessment and internal academic supervisors.

Students and lecturers confirm in discussions that both sides are aware of the regulations. In discussions, students describe the organization of examinations as transparent and responsive to their needs.

### Thesis

The undergraduate thesis is a compulsory graduation requirement designed to assess students' ability to work independently on a task at the bachelor's degree level. To be eligible to proceed with their thesis, students must first have accumulated a minimum of 120 credits (SKS) at this institution and achieved a Grade Point Average (GPA) of 2.00 or higher. In addition, they are required to successfully complete all necessary administrative procedures, including proposal seminars, obtaining clearance letters and demonstrating English language proficiency.

Two supervisors are assigned and responsible for overseeing the material, methods and techniques employed in scientific writing. Thesis projects carried out outside the university, for example in companies or research centres, are subject to academic supervision from internal supervisors from the study programme.

The assessment consists of the written thesis (evaluated for objectives, methodology, analysis, and conclusions) and the oral defence. The defence duration is up to 150 minutes with each examiner allotted 30 minutes. It results in a final grade based on the average of all assessments, with a minimum of a C required to pass. Regulations and guidelines on requirements, supervision, assessment, and defence are comprehensively set out in the Handbook for the Preparation and Writing of the Undergraduate Thesis.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The experts examine samples of examinations and final projects provided by the programmes under review. According to them, the documents show that the level of the students' academic performance and the content of the modules are sufficient for the programmes concerned. The final projects are of a very high standard and show that students are able to work independently. They also consider that the number and distribution of examinations ensure an appropriate workload and sufficient time for preparation.

### 3. Resources

|                                            |
|--------------------------------------------|
| <b>Criterion 3.1 Staff and Development</b> |
|--------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Staff Handbook for each programme
- Module descriptions for each programme
- Regulation on the Recruitment of Civil State Apparatus Personnel
- Website UNTAN: <https://www.untan.ac.id>
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

The BPM programme is supported by 14 permanent faculty members. Seven hold PhD degrees, and three are currently enrolled in doctoral programmes. In 2024, the student-to-staff ratio was 1:11 in the odd semester and 1:16 in the even semester. The BPP programme is delivered by nine lecturers, eleven assistant professors, and three associate professors. In 2024, the student-to-staff ratio was 1:12. Details of the academic qualifications of the teachers are described in the staff handbook, which is accessible via the programme's webpage.

In addition to the permanent academic staff members, visiting professors from international or Indonesian universities are regularly invited based on their academic qualifications, industry experience, and ability to contribute to programme's outcomes.

Lecturers engage in pedagogical training programmes, including the Enhancement of Basic Instructional Technique Skills (PEKERTI) for junior lecturers and the Applied Approach (AA) for both junior and senior lecturers. These programmes are facilitated by the Institute for Quality Assurance and Learning Development (LPMPP) at UNTAN, which also offers training in teaching methodology and instructional materials development. Academic career development is supported through a structured promotion system that enables lecturers to progress from Assistant Lecturer to Professor including mentorship, research collaboration, and performance-based evaluations.

UNTAN supports the advancement of lecturers' academic qualifications, particularly progression from Master's to doctoral level. Study leave may be granted for domestic or international postgraduate programmes, subject to relevance and institutional partnerships. During study leave, lecturers retain their employment status and are

expected to return upon completion to contribute to the ongoing development of the study programme.

Lecturers actively engage in research and development activities in their respective scientific fields. According to the Ministry regulations, each lecturer is required to conduct research and community service activities, with funding from sources such as the Directorate of Higher Education, the Ministry of Education and Culture, or through independent grants. In the SAR, it is emphasized that students are involved in these research projects, particularly in the context of the completion of their final theses. Research findings are also integrated into course content, case studies, and student assignments. The number of scientific publications per year has increased. The university rewards lecturers whose articles are published in highly regarded international journals.

During the discussions on-site, the experts discuss with UNTAN's management the reasons for the decreasing number of lecturers over the last few years and the strategy to deal with this tendency. The rectorate attributes the decline and semester-to-semester variation in lecturer numbers to national staffing regulations: faculties propose staffing needs, but the Ministry determines final allocations. Staffing also fluctuates with course offerings and mandatory course distribution. To address this, the rectorate outlines a five-year staffing plan based on programme needs and staff expertise, coordinated with national human-resources authorities.

The teaching staff report that UNTAN supports professional and didactic development through structured training. New lecturers attend introductory workshops (often within the first month) on active learning, teaching techniques, and handling student learning difficulties. The university also offers regular training aligned with internationally oriented teaching standards, as well as optional workshops on academic advising, proposal writing, soft skills, and scientific publication writing. For further qualification, the programme and university promote doctoral progression by sharing scholarship information, allowing preparation time, facilitating international supervision (including online meetings), supporting language development, and providing internal funding when external funding is unavailable.

The lecturers describe research time within the Tri Dharma framework as manageable with careful planning. They distribute teaching and supervision across the week, integrate research into teaching, and involve students in research—especially for final theses. The university provides research funding and senior mentorship, and lecturers aim for at least one national publication per year. Promotion follows a credit-based system with defined requirements, where credits accrue from teaching, publications, and community service.

Support for conferences and research projects primarily comes through research grants. The faculty coordinates conference participation, funds student attendance in some cases, and runs annual internal proposal reviews to strengthen applications for competitive grants. Staff note that current funding generally supports research and national publications, while international (e.g., indexed) publications often require additional resources. Lecturers express a need for expanded staff mobility programmes and, more generally, increased institutional support and opportunities for research mobility.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The composition and qualifications of the teaching staff are appropriate to ensure the effective delivery and long-term sustainability of both programmes under review. The University and Faculty provide adequate institutional support and offer a range of opportunities for professional, pedagogical, and academic development.

Nevertheless, the expert panel recommends that the University and Faculty adopt a more explicit and resourced strategy to strengthen the international experience and visibility of academic staff. This should include targeted measures to further advance internationalisation, such as enhanced support for English-medium teaching (including language development), expanded opportunities for international mobility of teaching staff, and more systematic exchange and collaboration with foreign institutions and visiting lecturers.

In addition, the panel recommends developing a coherent strategy to strengthen research capacity and international reputation. Key measures could include greater support for publishing in reputable international journals, increased participation in international conferences, improved access to research funding, and investments in research infrastructure (notably equipment for Physics laboratories). The strategy should also promote national and international research collaborations, including access to external research facilities where relevant.

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| <b>Criterion 3.2 Student Support and Student Services</b> |
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**Evidence:**

- Self-Assessment Report (SAR)
- Academic Guidelines
- Rules for Disabilities
- Satisfaction Survey Report on Lecturer Performance
- Guidelines of Disability students' services

- Discussions during the audit

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

As stated in the SAR, students have access to guidance and counselling, career development services, and scholarship opportunities to help alleviate financial burdens. The faculty also supports student organisations by providing funding and access to the necessary facilities. Support begins at admission with orientation activities for new students. In addition, a matriculation programme is offered to support a smooth transition from high school to university life. Throughout their studies, students receive academic support from faculty members serving as academic advisors (PAs), who assist with course selection, recommend learning resources, and help students address academic difficulties.

Additional academic support is available through tutoring and mentoring programmes, while counselling and psychological services address students' mental health and personal well-being. Students also benefit from access to digital platforms such as the learning management system (edLink) and comprehensive library resources.

Within the BPM and BPP programmes at UNTAN, faculty members and students identify several forms of academic support as particularly effective in promoting student success. One of the most impactful is individual academic advising, in which lecturers or advisors provide structured guidance on study planning, academic challenges, and career pathways. Another form of support is peer tutoring and study groups, which are often facilitated by senior students or teaching assistants. Supplemental instruction, such as remedial classes, is also offered outside regular class hours and focus on challenging topics like calculus, linear algebra, or mathematical logic.

Career development is embedded in the programme through faculty-led workshops (including CV writing and mock interviews) and approximately two-month internships with external organisations. These activities are strengthened by industry partnerships that enable internships, guest lectures, and practice-oriented projects, complemented by university-wide job fairs and alumni mentoring/networking.

Student organisations further enhance career readiness by developing soft skills such as communication, leadership, teamwork, time management, critical thinking, and problem-solving. Continuous improvement of student support services is ensured through tracer studies and user surveys that monitor graduate outcomes and identify unmet needs, informing the refinement and expansion of support initiatives.

Support for students with disabilities or special needs is in place to facilitate an inclusive and accessible learning environment. Students encountering challenges such as pregnancy,

childcare responsibilities, or disabilities are eligible for adjustments, which may include additional time, alternate exam formats, or accessible testing venues.

According to the results of the students' satisfaction surveys, students are satisfied with their lecturers and the support they receive. During the on-site discussion, students confirm that they are content with the assistance offered by their teachers. Lecturers are attentive and supportive, providing advice during counselling sessions and at other times as required.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

Students feel well supported by the university and their lecturers and their needs and interests are taken seriously. Furthermore, the experts acknowledge the university's commitment to addressing students' feedback. The experts believe that this support system helps students achieve the intended learning outcomes, completing their studies successfully and without delay. Students are well informed about the services available to them. The experts consider the guidance and mentoring system to be adequate.

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| <b>Criterion 3.3 Funds and equipment</b> |
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**Evidence:**

- Self-Assessment Report (SAR)
- Budget allocation
- Cooperation Agreements
- Results satisfaction surveys
- Visitation of the facilities
- Discussions during the audit

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

In terms of financial resources, the university explains in the SAR that a "Plan for Government Expenditure and Revenue" is approved and followed up by the programme, which creates activity proposals and Terms of Reference. The accountability for these activities is compiled and analysed in a report prepared periodically at the end of each year.

The funds are allocated to several activities, among others: education, research, dedication, development of facilities, and human resource investments. The following table summarises the budget allocation of the Faculty of Mathematics and Natural Sciences based on the rector letter to the Dean of the Faculty in the last five years:

| Year | Budget Allocation                                                                                                                                                  | Source                                                                                                                   | Total Budget<br>(in IDR) | Total budget<br>(in EUR) |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| 2022 | Supporting facilities and infrastructure for education and office operations, education services, Support for learning operations, research and community services | Non-Tax State Revenue (PNBP) for Public Service Agencies (BLU).                                                          | 9.489.204.000            | 482,336.24               |
| 2023 | Supporting facilities and infrastructure for education and office operations, education services, Support for learning operations, research and community services | State University Operational Assistance Fund (BOPTN) and Non-Tax State Revenue (PNBP) for Public Service Agencies (BLU). | 13.788.468.000           | 700,867.83               |
| 2024 | Supporting facilities and infrastructure for education and office operations, education services, Support for learning operations, research and community services | State University Operational Assistance Fund (BOPTN) and Non-Tax State Revenue (PNBP) for Public Service Agencies (BLU). | 13.468.639.000           | 684,610.92               |
| 2025 | Supporting facilities and infrastructure for education and office operations, education services, Support for learning operations, research and community services | State University Operational Assistance Fund (BOPTN) and Non-Tax State Revenue (PNBP) for Public Service Agencies (BLU). | 17.864.046.000           | 908,029.46               |

Table 7: Budget Allocation FMIPA UNTAN

Programme coordinators report that students primarily use open-source software, with Python commonly applied throughout the programme and MATLAB introduced in the final year. The programme provides access to a computer laboratory with approximately 30 computers to support software-based learning and assignments.

Regarding access to mathematical literature and journals, students can use institutional subscriptions such as ScienceDirect, and Physics also reports access to Scopus and ScienceDirect. Where direct access is restricted, students typically obtain articles through their academic advisors/lecturers, who support them in retrieving required publications, and staff indicate that students generally do not experience significant difficulties in obtaining needed materials.

Student satisfaction with programme facilities and infrastructure is monitored through semester-based surveys. During the on-site discussions, students express a high level of

satisfaction with the campus, facilities, and learning environment. BPP students specifically report that the laboratories are clean and safe, and that equipment is of good quality and sufficient for practical work. In Mathematics, students consider the number of computers adequate, and they confirm that the available software meets their needs. They also note that laboratory technicians are available and provide timely support when technical issues arise.

At the same time, students indicate that high temperatures in some laboratories adversely affect working conditions and the quality of practical sessions. Lecturers confirm this concern and report that air-conditioning is not consistently functional in classrooms and labs.

The BPM and BPP programmes benefit from strong internal and external collaborations. Internally, cooperation among departments, administrative units, and support services is well established, supported by cross-departmental teaching and shared use of facilities that optimise resources. Externally, the programmes maintain active partnerships with national and international institutions, industry, and research organisations, enabling resource sharing and access to additional funding. There are collaboration agreements with the universities in Kalimantan and universities in Malaysia, Japan and China.

During the on-site visit, the experts inspect the university's facilities, library, computer rooms and laboratories. Lecture rooms are equipped with whiteboards, projectors, student seating, and sometimes interactive audio-visual tools. The library provides textbooks, scientific journals, e-books, digital databases, and lending services. It also offers quiet study areas, internet access, and librarian support for research and referencing. In addition, smart areas provide technology-enabled spaces for both individual and collaborative academic work.

The experts visit among others the Data Intelligence Lab, Mathematics Lab, and General Physics and Advanced Physics Labs, Instrumentational Physics, Geophysics, Computational Physics Laboratories. Each laboratory can accommodate approximately 40–50 students. Facilities include computers, Wi-Fi access, standard operating procedures (SOPs), and a laboratory logbook. All instruments are subject to regular validation and calibration. portable fire extinguishers are installed in all laboratories. In addition, designated containers are provided for the collection and neutralisation of hazardous and toxic waste. The experts were especially impressed by the equipment in most of the physics laboratories. Most of it was very new, up to date and seems to be quite unique to Kalimantan.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

UNTAN has secure funding and reliable financial planning. The infrastructure is adequate and the classrooms and rooms for self-learning and group work are adequate. The experts highlight that the equipment in the physics labs is new and adequate for teaching. However, they believe that more computers should be available in the mathematics labs. Furthermore, based on the students' and lecturers' feedback, the experts recommend ensuring reliable climate control in classrooms and laboratories (e.g., functioning air-conditioning and adequate ventilation) to provide an appropriate teaching and learning environment.

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

According to the statement, the University and Faculty have responded by systematically strengthening measures for academic staff internationalisation, including increased institutional support for international conferences, mobility programmes, collaborative research, and academic networking. They promote English-language competence through training, participation in international activities, and expanded use of English references and bilingual teaching. In addition, they are expanding international cooperation and exchanges (e.g. joint seminars, visiting lecturers, and partnerships, especially in ASEAN) and encouraging staff to engage in international publications, research collaborations, and professional associations, with the aim of building a more internationally connected and visible academic environment. In addition, the programmes under review have improved research capacity by expanding access to funding and upgrading laboratory infrastructure. Support for lecturers in applying for grants, preparing proposals, publishing, and engaging in collaborative research is also provided. At the same time, UNTAN is enhancing Physics laboratory equipment to better support teaching and research, aiming to increase productivity and academic visibility. The experts commend these measures. However, since these are only initial steps and the process is still ongoing, they recommend maintaining the recommendations regarding internationalisation and English language in light of future developments.

With regard to labs and equipment, BPM has improved access to computers by expanding lab facilities and providing additional access to over 100 computers across Faculty and University labs. UNTAN has also enhanced classroom and laboratory conditions by improving air-conditioning, ventilation, and maintenance to ensure a suitable learning environment. The experts commend these efforts and encourage the programmes to continue strengthening and further developing these aspects in the future.

## 4. Transparency and documentation

### Criterion 4.1 Module descriptions

**Evidence:**

- Self-Assessment Report
- Module descriptions for each programme
- Website Faculty of Mathematics and Natural Sciences: <https://mipa.UNTAN.ac.id/>
- Discussions during the audit

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

The module handbooks for both degree programmes under review are published on the university's websites and are thus accessible to the students as well as to all stakeholders in both Indonesian and English language.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The module descriptions are accessible and contain the required information for each module. It includes module name, responsible persons, language, relation to curriculum teaching methods, credit points awarded and workload (including contact hours and self-study time), module objectives/intended learning outcomes, content, form of examination, examination requirements, media employed, reading list and details explaining how the final grade is calculated.

Nevertheless, the experts note inconsistencies in the Physics programme's module handbook. In addition, module prerequisites are not always specified. They therefore conclude that the BPP module handbook should be reviewed and updated in line with the revised curriculum, including clear prerequisites for the relevant modules. All compulsory modules, including the Research Proposal module, as well as elective modules, should be fully covered in the module descriptions. Furthermore, as noted above (see Section 1.3), the module handbook should clearly indicate that the module Modern Physics covers the fundamentals of molecular physics.

### Criterion 4.2 Diploma and Diploma Supplement

**Evidence:**

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

- Sample Transcript of Records
- Guidelines for issuing Diploma Supplement Certificate by LPMPP

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

The experts confirm that the students of the two undergraduate programmes under review receive a Diploma Certificate, a Transcript of Records and a Diploma Supplement or “Supplement of Achievements (SKPI)”, which outlines the graduate’s ILOs based on the student’s academic performance.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The Diploma Supplement should follow the internationally recognised European template and should inform about the structure and content of the respective degree programme. The diploma supplements of the two programmes under review do not include data on the GPA distribution of graduates in the same cohort nor information on total workload of the programme (SKS and ECTS). This information should be included in the Diploma Supplement to ensure fair transfer and recognition of grades for mobile students. A programme specific Diploma Supplement needs to be issued automatically to all graduates. The experts ask UNTAN to submit a sample Diploma Supplement, which is aligned with the European template, for each programme under review.

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| <b>Criterion 4.3 Relevant rules</b> |
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**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- All relevant regulations as published on the university’s webpage
- Website UNTAN: <https://www.untan.ac.id>

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

As stated in the SAR, students are provided with comprehensive academic guidelines and a faculty or university prospectus containing detailed information on academic procedures, support services, and the responsibilities expected of students throughout their studies. These regulations are publicly accessible and disseminated through multiple channels, including the official university, faculty, and study programme websites, social media, student handbooks, academic orientation (PPKMB) and matriculation activities, and direct consultation with academic or student affairs officers.

During the audit, students confirm that they feel well-informed about their rights and responsibilities which are included in the Academic Guideline book. They can easily find and access all relevant information and documents on the university's website and the Learning Management System.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The rights and obligations of both UNTAN and the students are clearly defined and binding. The experts acknowledge that they can find all relevant course-related information. In addition, the website seems efficient in attracting students, and outside communications also appear to be effective.

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

With regard to the module description of BPP; the university states that the programme will update its module handbook in line with the 2026 curriculum to ensure complete, consistent, and transparent module descriptions, including prerequisites. It will also introduce a new compulsory course, Research Methodology and Scientific Writing, to better prepare students for research and thesis work. The experts acknowledge these update process. However, as the new curriculum and module descriptions will be implemented in August 2026, they suggest to maintain the requirement (A5).

In addition, the university has provided sample Diploma Supplements for both programmes under review. According to the university's statement, information on GPA distribution and the total programme workload, including SKS and ECTS equivalencies, is contained in the academic transcripts accompanying the Diploma Supplements. The experts consider the inclusion of information on workload and credit allocation, including ECTS equivalencies, in the Transcript of Records to be sufficient. However, they concur that information on the GPA distribution of graduates from the same cohort should also be included in the Diploma Supplement itself. Therefore, the requirement (A2) will be maintained.

## 5. Quality management: quality assessment and development

### **Evidence:**

- Self-Assessment Report
- UNTAN Academic Guidelines
- Samples EDOM (Student Evaluation of Lecturer) UNTAN
- Focus Group Curriculum Discussion Report for each programme
- Tracer Study Report for each programme
- User Survey Report
- Survey New Students Report
- Discussions during the audit

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

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

Internally, quality of the teaching and learning processes is monitored and evaluated through the Internal Quality Audit (AMI) conducted by the university's Institute for Quality Assurance and Learning Development (Lembaga Penjaminan Mutu dan Pengembangan Pembelajaran – LPMPP) and coordinated centrally by the Quality Assurance Center (Pusat Penjamin Mutu – PPM) of UNTAN. On the faculty level, the implementation of internal quality assurance is coordinated by the Faculty Quality Assurance Unit (UPMF).

The AMI is conducted annually in accordance with UNTAN's official Standard Operating Procedure and uses certified auditors from outside the audited study programmes. AMI are aimed at ensuring that the implementation and management of the study programmes are in line with the university's vision and mission and the Programme Educational Objectives (PEO). During the AMI, every study programme will analyse data on the implementation of educational and research activities, which are documented in the form of reports, monitoring data, and evaluation results. Next, the AMI results will be reported to the TPMF chairman and communicated to the faculty leadership and LP3M. Furthermore, based on the AMI results, the faculty conducted workshops for all study programmes in order to discuss and implement the required measures for improving the

study programme. At the faculty level, results are further reviewed in Management Review Meetings (RTM) attended by deans, vice deans, and heads of study programmes.

Quality assurance at the faculty level includes (1) carrying out internal monitoring and evaluation of all study programmes and periodic evaluation of academic staff performance; (2) coordinating the implementation of lecture evaluations based on student perceptions conducted every semester; (3) updating the accreditation data of study programmes at the faculty level; (4) submitting the results of internal monitoring and evaluation of study programmes and staff members to the Dean and the Head of LP3M.

Internal assessment of the quality of the degree programme is mainly provided through student, alumni, and employer surveys. The students give their feedback on the courses by filling out the questionnaire online at the end of each semester. Students assess various aspects such as students' understanding, lecturer's responsiveness, course delivery, lecturer's proficiency, explanation of course objective, and references in each enrolled course.

Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on the digital platform Satu UNTAN. 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 1.5).

Moreover, UNTAN regularly conducts alumni tracer studies and has an alumni association. By taking part at this survey, alumni can comment on their educational experiences at UNTAN, the waiting period for employment after graduation, their professional career and can give suggestions how to improve the programme. Furthermore, there is the Unit for Career Development and Entrepreneurship at UNTAN, which offers help to find suitable internships, announces job vacancies, and offers courses to develop soft skills. UNTAN organises a job fair every three months; in general, the graduates' job perspectives are good. In addition, the contacts students make during the internships sometimes lead to job offers.

During the audit, lecturers report that courses are formally evaluated through the EDOM student survey, which is conducted at the end of each semester. In addition to this standard instrument, lecturers gather informal feedback continuously, for example by asking short questions during or after each class meeting and by using mid-semester performance (e.g., midterm exam results) as an indicator of whether students achieve the intended competences. Student organisations also collect feedback and raise issues through regular meetings with students. The rectorate states that the results are communicated

transparently by publishing them on the faculty's website, thereby informing both staff and students and supporting continuous programme development.

Lecturers compile course portfolios and discuss evaluation outcomes in internal coordination meetings, where they identify improvement measures and adjust teaching methods accordingly. Follow-up takes place at multiple levels (programme and faculty), and the process is embedded in the university's broader quality assurance system, including internal quality audits. Students may also channel concerns through academic advisors and counselling services, ensuring that both academic and personal issues are addressed through established support structures.

Students confirm that lecturers are evaluated through the EDOM survey, which is completed at the end of each semester and covers multiple aspects of teaching, including workload. They report that survey results are accessible via the faculty's website. Students consider EDOM effective, noting that lecturers respond to feedback and make changes accordingly. In addition, students can provide open feedback through programme student organisations; concerns can be raised with the student organisation leader, who may escalate them to the Head of Programme.

The experts gain the impression that the departments take the students' feedback seriously and changes are made if necessary. In case of negative feedback, the Head of Department talks to the respective teacher, analyses the problem, and offers guidance. There are regular meetings with students where they can voice their issues and suggestions.

The experts discuss during the audit if there are regular meetings with the partners on faculty or department level, where they discuss the needs and requirements of the employers and possible changes to the degree programme. They learn that employers and alumni are regularly invited to participate at the programme review workshops to give their feedback on the content of the degree programmes. The experts appreciate that UNTAN stays in contact with its alumni and has a close relation with its partners.

**In their summative evaluation of this criterion, the ASIIN expert team comes to the following conclusions:**

The overall quality management system is effective in identifying weaknesses and improving programmes. All stakeholders are involved in the process. The results of these processes are incorporated into the continuous development of the programme. Processes and responsibilities seem to be well defined for the further development of the programme. The results and any measures derived from the evaluations are communicated to the students.

## E Additional Documents

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

- No additional documents are required.

## F Comment of the Higher Education Institution (13.05.2026)

The following quotes the comment of the institution:

| CRITERIA                                                   | SUB-CRITERIA   | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RESPONSES (ACTION PLAN)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EVIDENCES                         |                                                                                                                                                                                                                                                                                                              |
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|                                                            |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BACHELOR PROGRAMME IN MATHEMATICS (BPM) | BACHELOR PROGRAMME IN PHYSICS (BPP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | BACHELOR PROGRAMME IN MATHEMATICS | BACHELOR PROGRAMME IN PHYSICS                                                                                                                                                                                                                                                                                |
| 1. The Degree Programme: Concept, content & implementation | 1.3 Curriculum | Molecular physics not clearly stated in module descriptions<br>"With regard to BPP, the experts seek to clarify whether the module Modern Physics includes contents to molecular physics, as this cannot be inferred from the module descriptions (which end with the Hydrogen line spectrum and Bohr's model). As stated by the programme coordinators fundamental aspects of molecular physics are covered by the course on Modern Physics. Likely, during the meeting with the teaching staff, the lecturer responsible for the module Modern Physics confirmed that fundamentals on molecular physics are included and approximately two weeks are dedicated for this content at the end of the course. Apparently, the information is missed or not clear in the English version of the content descriptions of the module." | -                                       | <p>The BPP appreciates the careful observations made by the ASIIN expert panel, as well as its constructive recommendations regarding the way molecular physics content is described in the Modern Physics module.</p> <p>We acknowledge that the English version of the module description overlooks fundamental topics in molecular physics. In practice, these topics have been included in the Modern Physics course as an introductory continuation of the atomic physics part. They are delivered after the discussion of fundamental atomic physics, in particular the hydrogen line spectrum and Bohr's atomic model. The molecular physics component is usually covered in one to two class meetings, corresponding to approximately 150–300 minutes of instructional time.</p> <p>In response, the study programme revised the module handbook for the Modern Physics course to explicitly include the fundamental concepts of molecular physics in the course description and syllabus.</p> <p>Furthermore, we recognise molecular physics as an essential foundational subject for undergraduate physics students, particularly as a basis for advanced areas such as materials physics and solid-state physics. For this reason, in the new curriculum, which will be implemented in August 2026, the Physics Study Program will introduce a dedicated compulsory course, Atomic and Molecular Physics. This course will provide a more comprehensive treatment of atomic structure, molecular structure, molecular bonding, molecular spectra, and related concepts in modern physics.</p> |                                   | <p>The following supporting documents are attached as evidence of the corrective actions undertaken by the study program:</p> <p>1. Revised Module Handbook of the Modern Physics Course (including explicit description of atomic and molecular physics contents), link: <a href="#">BPP Evidence 1</a></p> |
|                                                            |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   | <p>2. Structure of the New Curriculum to be Implemented in August 2026<br/>link: <a href="#">BPP Evidence 2</a></p>                                                                                                                                                                                          |
|                                                            |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                   | <p>3. Course Syllabus of Atomic and Molecular Physics (curriculum 2026)<br/>link: <a href="#">BPP Evidence 3</a></p>                                                                                                                                                                                         |

| CRITERIA                                                   | SUB-CRITERIA   | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     | EVIDENCES                                                                        |                                                                                  |
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| 1. The Degree Programme: Concept, content & implementation | 1.3 Curriculum | <p>Internship duration not clearly communicated and Internship workload not aligned with credits: "With regard to the internship, the experts understand that there are not many nationally scaled companies and types / fields of industries operating in West Kalimantan besides government agencies and a few local companies. However, they suggest that internships' duration should be transparently communicated. In addition, the workload and credits need to be in accordance with the real workload of the internship"</p> | <p>BPM and BPP acknowledge the experts' recommendation that the internship duration be communicated more transparently and that the credits awarded correspond to the actual student workload.</p> <p>In response, we have clarified and standardised the internship scheme through updated internship and MBKM guidelines that specify the internship type, duration, credit allocation, expected workload, supervision mechanism, assessment components, and required documentation. Internships are defined as experiential learning activities conducted directly in a workplace or relevant professional setting to provide contextual learning experience and strengthen students' theoretical, practical, analytical, interpersonal, and professional competencies.</p> <p>Two internship schemes are available in BPM and BPP:</p> <p><b>Internship A</b>, or Short Internship/Community Development Participation, is equivalent to 2 SKS or 3.34 ECTS and is implemented over 30 working days. Its workload follows UNTAN's credit conversion policy, which states that 1 SKS equals 2,700 minutes, or approximately 45 hours of student workload. The total workload includes activities at the host institution, preparation, supervision, report writing, presentation, and evaluation.</p> <p><b>Internship B</b> covers MBKM, flagship, or independently arranged internships. This scheme is intended for longer, more intensive activities conducted through the ministry, university, faculty, or through independently established cooperation with external institutions. MBKM or flagship internships may be converted into up to 20 SKS or 33.4 ECTS within one semester, provided that the verified workload, learning outcomes, supervision, and assessment components meet programme requirements. The minimum implementation period is three months, in accordance with MBKM regulations and relevant ministry guidelines. Independently arranged internships are permitted but must be reviewed and approved by the study programme to ensure that their duration, workload, learning outcomes, supervision, and assessment are consistent with the credits awarded.</p> <p>To ensure alignment between credits and actual workload, the BPM and BPP have strengthened their monitoring and documentation procedures. Workload is calculated from working hours at the host institution, structured assignments, academic and field supervision, internship logbooks, written reports, presentations, and final evaluations. These components are jointly monitored by academic and field supervisors, ensuring that the internship duration, workload, and credit recognition are clearly communicated to students and partner institutions and consistently implemented in line with the actual learning activities undertaken by students.</p> |                                     | <p><b>Internship Module Description:</b><br/> <a href="#">BPM Evidence 1</a></p> | <p><b>Internship Module Description:</b><br/> <a href="#">BPP Evidence 4</a></p> |

| CRITERIA                                                   | SUB-CRITERIA           | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                         | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     | EVIDENCES                                                                |                               |
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| 1. The Degree Programme: Concept, content & implementation | International Mobility | Limited international mobility "Therefore, the experts recommend that the internationalisation strategy be enhanced by providing stronger support for student international mobility and facilitating and initializing more international exchange with foreign institutions." | <p>The BPM and BPP acknowledge the experts' recommendation and agree that internationalisation, particularly student international mobility and structured academic exchange with foreign institutions, still needs to be strengthened. The programmes also recognise that, although internationalisation initiatives have been implemented at the university, Faculty, and programme levels, the number of students participating in international mobility remains limited, and the existing activities need to be developed more systematically and sustainably.</p> <p>In response to this condition, Universitas Tanjungpura and the Faculty of Mathematics and Natural Sciences have continued to develop structured international academic activities, especially within the ASEAN region, as an initial step to strengthen students' international exposure. Part of this effort is carried out through academic programmes with partner universities in Malaysia, including Universiti Teknologi Malaysia (UTM) and Universiti Malaysia Sarawak (UNIMAS), where students take part in academic discussions, collaborative learning, intercultural exchange, and field-based educational activities.</p> <p>The Faculty has also conducted the Tengkwang International Summer Course, an interdisciplinary international programme that integrates sustainability-oriented themes, regional scientific perspectives, academic lectures, cultural exchange, and field-based learning. This programme involved domestic and international participants and has served as a platform for strengthening international academic engagement and incoming mobility within the Faculty.</p> <p>In addition, UNTAN has established formal international cooperation frameworks with overseas institutions, including participation in the French-Indonesian Consortium in Engineering and Management (FICEM) and Erasmus+-related cooperation with Université de Poitiers. These collaborations have provided institutional experience in managing academic mobility, international cooperation, and student exchange.</p> <p>Following the experts' recommendation, the BPM and BPP will further strengthen internationalisation by expanding student mobility support, disseminating opportunities such as IISMA, student exchanges, and summer courses more systematically, providing academic and administrative mentoring for applicants, strengthening English and intercultural preparation, and expanding partnerships with institutions both within and outside ASEAN. Through these measures, the programmes aim to increase outgoing and incoming student mobility and develop international academic engagement in a more structured and sustainable way.</p> |                                     | Tengkawang Summer School Documentation<br><a href="#">BPM Evidence 2</a> |                               |

## F Comment of the Higher Education Institution (13.05.2026)

| CRITERIA                                                   | SUB-CRITERIA           | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                             | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     | EVIDENCES                                                       |                                                                 |
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| 1. The Degree Programme: Concept, content & implementation | International Mobility | Need stronger English training "Following the students' feedback, the experts believe that there should be more extensive teaching in English in the courses and that training in English, with particular emphasis on technical mathematics and physics terminology, should be further expanded." | <p>The BPM and BPP welcome the experts' recommendation to expand English-language instruction and strengthen students' competence in technical mathematics and physics terminology.</p> <p>In response, both programmes have begun integrating English-medium learning components into selected courses, with implementation effective in the incoming semester. In the BPM, courses such as Digital Literacy and West Kalimantan in Mathematics are partially delivered in English through classroom instruction, learning materials, discussions, assignments, and academic references. In the BPP, English is already introduced through STEM-related content and physics terminology, particularly in the second semester, and is partially used in courses such as Mathematics II, Mathematical Physics, Computational Physics, and Material Characterisation Methods. These courses incorporate English in teaching activities, learning materials, academic discussions, assignments, and reference sources.</p> <p>To further strengthen students' academic English proficiency, the BPP will introduce a dedicated Academic English course in the new curriculum, to be implemented in 2026. This course is designed to support English for Specific Purposes, with emphasis on physics terminology, scientific reading, academic communication, and preparation for international academic activities.</p> <p>In addition, both programmes encourage the systematic use of English-language textbooks, journal articles, and other scientific references across the curriculum to increase students' exposure to international academic literature and discipline-specific terminology. As part of their broader internationalisation strategy, the BPM and BPP will progressively expand bilingual and English-medium instruction in selected advanced courses, particularly those related to international mobility, summer courses, student exchange, and collaborative academic activities.</p> |                                     | Example of Module in English:<br><a href="#">BPM Evidence 3</a> | Example of Module in English:<br><a href="#">BPP Evidence 5</a> |

## F Comment of the Higher Education Institution (13.05.2026)

| CRITERIA                                                   | SUB-CRITERIA  | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                  | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                     | EVIDENCES                                                       |                               |
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| 1. The Degree Programme: Concept, content & implementation | 1.4 Admission | Potential discrimination (colour blindness rule)<br>"The experts recognise the university's policy of treating all individuals equally. However, the experts conclude that students must not be excluded on the basis of colour blindness. "                                                                                            | <p>The university acknowledges the experts' concern regarding potential exclusion based on colour blindness and reaffirms its commitment to equal access and non-discriminatory admission practices.</p> <p>For the programmes under review, namely the BPM and BPP, applicants are not excluded on the basis of colour blindness, and normal colour vision is not a general admission requirement. UNTAN will further ensure that admission information is stated clearly and unambiguously so that colour-vision requirements are not interpreted as applying to these programmes.</p> <p>Where colour perception may be relevant to specific learning or laboratory activities, the programmes will address this through appropriate academic support, safety procedures, and reasonable accommodation, rather than through exclusion from admission. This approach ensures equitable access while maintaining the necessary academic and laboratory safety standards.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     | Announcement Re-Registration <a href="#">BPM Evidence 4</a>     |                               |
|                                                            | 1.4 Admission | Age restriction limits access<br>"In addition, they conclude that the Bachelor's admissions eligibility criteria (age cap and/or limitation to recent graduation cohorts) create systematic barriers for qualified applicants, particularly non-traditional learners, and is not demonstrably necessary to protect academic standards." | <p>The university acknowledges the experts' concern that age limits and restrictions on recent graduation cohorts may create barriers for qualified non-traditional applicants.</p> <p>In response, Universitas Tanjungpura has strengthened inclusive admission opportunities through the Recognition of Prior Learning/Rekognisi Pembelajaran Lampau (RPL) scheme, regulated by Rector Regulation No. 01 of 2025, Chapter III, Section Two, Article 5. This scheme provides an alternative pathway for applicants with prior academic, work, professional certification, training, or non-formal education backgrounds.</p> <p>The regulation recognises two types of RPL: Type A, based on prior formal academic education, and Type B, based on work experience, training, professional certification, and non-formal education. Through this mechanism, applicants are assessed on the equivalence of their prior learning outcomes rather than solely on age or year of secondary school graduation.</p> <p>The assessment is conducted by the Faculty/Study Programme RPL Team through transparent academic procedures, including portfolio assessment, competency recognition, and credit conversion aligned with the programme learning outcomes. Where necessary, students admitted through RPL may also take matriculation or bridging courses to ensure academic readiness. This pathway enables qualified non-traditional applicants to access the programme while maintaining academic standards and achieving the intended learning outcomes.</p> |                                     | Rector Regulation No. 01 of 2025 <a href="#">BPM Evidence 5</a> |                               |

| CRITERIA                                                   | SUB-CRITERIA | FINDINGS (FROM REPORT)                                                                                                                                                                               | RESPONSES (ACTION PLAN)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EVIDENCES                         |                                      |
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| 1. The Degree Programme: Concept, content & implementation | 1.5 Workload | Long study duration in Physics<br>"With regard to the time students need to graduate from the programmes, experts seek to understand the reasons for the long time for graduation required in BPP. " | -                                       | <p>The BPP acknowledges the experts' observation regarding the relatively long study duration of Physics students. Based on internal evaluations and academic data, the main contributing factor is the extended time required by many students to complete the undergraduate thesis, with a considerable number taking more than 2 semesters to complete this stage.</p> <p>This delay was influenced by the disruption caused by the COVID-19 pandemic, particularly in research activities and laboratory access. In addition, the programme identified that the administrative process for thesis completion, from proposal registration to the final thesis defence, had been relatively lengthy and contributed to delays in student progression.</p> <p>To address this issue, beginning in January 2026, the Physics Study Program implemented several improvements to streamline thesis management while maintaining academic quality standards. These include simplifying administrative procedures, replacing the formal proposal seminar with a desk evaluation mechanism for assessing research proposals, scheduling regular Result Seminar Weeks and Thesis Defence Weeks at least twice per semester, and strengthening academic progress monitoring by academic advisors at the beginning, middle, and end of each semester.</p> <p>The scheduled seminar and defence periods have improved students' time management and made examiner coordination more efficient. Initial monitoring indicates a positive trend toward shorter thesis completion time and a gradual reduction in the average study duration. The BPP will continue to monitor study progression systematically and use the results as part of its quality improvement process.</p> |                                   | link: <a href="#">BPP Evidence 6</a> |

| CRITERIA                                                   | SUB-CRITERIA            | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EVIDENCES                                                                          |                                                                                    |
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| 1. The Degree Programme: Concept, content & implementation | 1.5 Workload            | <p>Internship credit mismatch</p> <p>"For both programmes under review, BPM and BPP, the duration and workload expectations for internships need to be communicated more explicitly. Internship credits (SKS, and ECTS equivalence where applicable) must be demonstrably aligned with the actual student workload, including supervision, reporting, and assessment requirements. UNTAN needs to ensure that credits awarded for the internship consistently reflect verified workload."</p> | <p>The BPM and BPP acknowledge the experts' recommendation and have clarified the duration, workload expectations, credit allocation, supervision, reporting, and assessment requirements for internships in the updated internship and MBKM guidelines. Both programmes implement two internship schemes:</p> <p><b>1. Internship A:</b> Short Internship/Community Development Participation</p> <p>This scheme is equivalent to 2 SKS (3.34 ECTS) and is conducted over 30 working days. The workload follows UNTAN's credit conversion policy, which states that 1 SKS equals 2,700 minutes, or approximately 45 hours of student workload. The total workload includes activities at the host institution, supervision, structured assignments, report writing, presentation, and assessment.</p> <p><b>2. Internship B:</b> MBKM/Flagship Internship/Independent Internship</p> <p>This scheme is intended for longer internship activities conducted through the ministry, a university, a faculty, or through independently established cooperation with external institutions. MBKM or flagship internships may be converted into up to 20 SKS or 33.4 ECTS within one semester, provided the minimum duration is three months, in accordance with MBKM regulations and ministry guidelines. Independently arranged internships are permitted only after approval by the study programme, based on the alignment of learning outcomes, workload, supervision, and assessment procedures.</p> <p>To ensure that the credits awarded reflect the actual workload, students are required to document their internship activities through logbooks, reports, presentations, and evaluations by academic and field supervisors. These records are used to verify that the internship duration, workload, supervision, reporting, and assessment components are consistent with the SKS and ECTS credits awarded.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p><b>Internship Module Description:</b></p> <p><a href="#">BPM Evidence 6</a></p> | <p><b>Internship Module Description:</b></p> <p><a href="#">BPP Evidence 7</a></p> |
|                                                            | 1.6 Teaching & Learning | <p>Lack of competition training (Physics)</p> <p>"In light of student feedback, the review panel recommends that the Physics department strengthen support for BPP students wishing to participate in science competitions, for example through additional training, tutoring, or mentoring opportunities."</p>                                                                                                                                                                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>The BPP acknowledges the review panel's recommendation and has strengthened structured support for students who wish to participate in science competitions.</p> <p>In response, the programme has implemented continuous mentoring and training activities focused on national-level competitions, particularly ON-MIPA in the Physics division and PKM. The support includes academic guidance, intensive coaching sessions, problem-solving practice, assistance with proposal development, and mentoring by lecturers with relevant expertise.</p> <p>These activities have been integrated into the programme's annual agenda and are financially supported by the Faculty of Mathematics and Natural Sciences. Through this mechanism, the BPP ensures that competition preparation is not conducted only on an ad hoc basis but becomes a regular academic support activity aimed at improving students' achievement, confidence, and competitiveness.</p> <p>Relevant documentation of the mentoring and competition-preparation activities is provided in the attachment.</p> |                                                                                    | <p><b>BPP competition reports:</b></p> <p><a href="#">BPP Evidence 8</a></p>       |

| CRITERIA     | SUB-CRITERIA               | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     | EVIDENCES                         |                               |
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| 3. Resources | 3.1. Staff and Development | International experience of academic staff<br>"Nevertheless, the expert panel recommends that the University and Faculty adopt a more explicit and resourced strategy to strengthen the international experience and visibility of academic staff. This should include targeted measures to further advance internationalisation, such as enhanced support for English-medium teaching (including language development), expanded opportunities for international mobility of teaching staff, and more systematic exchange and collaboration with foreign institutions and visiting lecturers." | <p>The University and faculty welcome the experts' recommendation regarding the strengthening of the international experience and visibility of academic staff.</p> <p>In response, the University and Faculty have progressively implemented several measures to support the internationalisation of academic staff in a more systematic manner. These measures include increased institutional support for participation in international conferences, academic mobility programmes, collaborative research activities, and international academic networking.</p> <p>To strengthen English-medium teaching capacity, lecturers are encouraged to improve their academic English proficiency through language development programmes, participation in international academic activities, and the increasing use of English-language references and bilingual instruction in selected courses. The Programme has also gradually expanded the implementation of English-medium learning components within the curriculum as part of its internationalisation efforts.</p> <p>Furthermore, the Faculty and University continue to expand cooperation and academic exchange with foreign institutions through joint seminars, collaborative academic activities, visiting lecturer programmes, and international partnership initiatives, particularly within the ASEAN region and through previously established international cooperation frameworks.</p> <p>The Programmes also encourages lecturers to actively engage in international publication activities, collaborative research, and professional academic associations to enhance international academic visibility and strengthen global academic engagement.</p> <p>Through these measures, the Programmes aims to progressively build a more internationally connected academic environment and strengthen the international profile and experience of its academic staff in a sustainable manner.</p> |                                     |                                   |                               |

| CRITERIA     | SUB-CRITERIA               | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                      | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     | EVIDENCES                                                                                                                         |                               |
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| 3. Resources | 3.1. Staff and Development | Developing a coherent strategy to strengthen international reputation. "In addition, the panel recommends developing a coherent strategy to strengthen research capacity and international reputation. Key measures could include greater support for publishing in reputable international journals, increased participation in international conferences. | <p>BPM and BPP acknowledge the experts' recommendation to develop a more coherent strategy for strengthening research capacity and international reputation.</p> <p>In response, the programmes, together with the Faculty and University, have strengthened institutional support for research productivity and international academic engagement. The strategy focuses on four main measures:</p> <p><b>1. Support for international publication</b><br/>Lecturers are encouraged and supported to publish in reputable international journals indexed in major databases. Support includes internal research grants, publication incentives, proofreading or article review assistance, and facilitation of collaborative research with external institutions.</p> <p><b>2. Participation in international academic forums</b><br/>Lecturers are encouraged and financially supported to participate in international conferences, seminars, workshops, and academic forums as presenters or participants. These activities are intended to increase research visibility, expand academic networks, and initiate future research collaboration.</p> <p><b>3. Strengthening research collaboration</b><br/>The BPM and BPP promote collaborative research with national and international partners, including joint research activities, guest lectures, visiting academics, and participation in international academic programmes and mobility schemes.</p> <p><b>4. Integration of research into teaching and student activities</b><br/>Research outcomes are increasingly integrated into courses, student projects, undergraduate theses, and academic activities to strengthen the connection between teaching, research, and scientific development.</p> <p>Through these measures, the BPM and BPP aim to improve research quality, increase international publication output, strengthen academic networks, and gradually enhance the international visibility of the programmes in mathematics and physics.</p> |                                     | <p><b>Research collaborative with international partnership (International Experience)</b><br/><a href="#">BPM Evidence 7</a></p> |                               |

| CRITERIA     | SUB-CRITERIA               | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                 | RESPONSES (ACTION PLAN)                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EVIDENCES                         |                               |
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| 3. Resources | 3.1. Staff and Development | Need stronger research capacity<br>"In addition, the panel recommends developing a coherent strategy to strengthen research capacity and international reputation. Key measures include improved access to research funding, and investments in research infrastructure (notably equipment for Physics laboratories)." | -                                       | <p>The BPP acknowledges the experts' recommendation to strengthen research capacity by improving access to research funding and investing in research infrastructure, particularly Physics laboratory equipment.</p> <p>In response, the BPP, together with the Faculty and University, has focused on two main areas:</p> <p><b>1. Improved access to research funding</b><br/>Lecturers are encouraged and supported to apply for internal university research grants, national competitive grants, and collaborative research schemes with external partners. The support includes assistance in proposal preparation, administrative facilitation for grant applications, publication incentives, manuscript proofreading or review support, and facilitation of interdisciplinary and collaborative research activities.</p> <p><b>2. Strengthening research infrastructure</b><br/>The BPP continues to upgrade Physics laboratory facilities and research equipment in line with institutional priorities and available resources. These improvements are directed not only to support practical teaching, but also to strengthen undergraduate thesis research, lecturer research, and collaborative research involving students and external partners.</p> <p>Through these measures, the BPP aims to improve research productivity, enhance access to research resources, strengthen laboratory-based research, and gradually increase the programme's academic visibility in physics.</p> |                                   |                               |

## F Comment of the Higher Education Institution (13.05.2026)

| CRITERIA                        | SUB-CRITERIA        | FINDINGS (FROM REPORT)                                                                                                                                                                                                                                                                                                                                                                                           | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EVIDENCES                                                                   |                                                                                                                     |
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|                                 |                     |                                                                                                                                                                                                                                                                                                                                                                                                                  | BACHELOR PROGRAMME IN MATHEMATICS (BPM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | BACHELOR PROGRAMME IN PHYSICS (BPP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BACHELOR PROGRAMME IN MATHEMATICS                                           | BACHELOR PROGRAMME IN PHYSICS                                                                                       |
| 3. Resources                    | 3.3 Facilities      | Limited computers in Mathematics labs<br>"However, they believe that more computers should be available in the mathematics labs. Furthermore, based on the students' and lecturers' feedback, the experts recommend ensuring reliable climate control in classrooms and laboratories (e.g., functioning air-conditioning and adequate ventilation) to provide an appropriate teaching and learning environment." | <p>The BPM acknowledges the experts' recommendation to improve computer access in the Mathematics laboratories. In response, the programme, together with the Faculty, has added computer facilities and improved supporting infrastructure in the Mathematics computer laboratory. Students also have access to Faculty and University computer laboratories, providing more than 100 computers for practical sessions, assignments, programming, data analysis, mathematical modelling, and independent learning.</p> <p>Regarding the experts' recommendation to ensure reliable climate control in classrooms and laboratories, the Faculty and University have strengthened facility maintenance, including the repair and replacement of air-conditioning units and improvements to room ventilation. Routine monitoring is carried out to ensure that classrooms and laboratories remain suitable for teaching, learning, computer-based activities, and laboratory work. The Faculty is also committed to continuously improving learning facilities, particularly classroom and laboratory air-conditioning systems, to provide an appropriate teaching and learning environment.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Computer Laboratory for Mathematics Students <a href="#">BPM Evidence 8</a> |                                                                                                                     |
| 4. Transparency & Documentation | 4.1 Module Handbook | Inconsistencies in Physics module handbook : "They therefore conclude that the BPP module handbook should be reviewed and updated in line with the revised curriculum, including clear prerequisites for the relevant modules. All compulsory modules, including the Research Proposal module, as well as elective modules, should be fully covered in the module descriptions.                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>The BPP acknowledges the experts' recommendation and will review and update the module handbook in line with the revised Physics 2026 Curriculum.</p> <p>The updated module handbook will ensure that all compulsory and elective modules are fully described, including course objectives, learning outcomes, content, teaching methods, assessment methods, workload, credits, and references. Clear prerequisites will also be added for all relevant modules to make the curriculum sequence more transparent.</p> <p>Regarding the Research Proposal module, the BPP is preparing to introduce a new compulsory module, Research Methodology and Scientific Writing, in the revised curriculum. This module will strengthen students' preparation for undergraduate research by covering research design, proposal development, scientific writing, academic ethics, and thesis preparation.</p> <p>Through this update, the BPP will ensure that the module handbook is complete, consistent with the revised curriculum, and sufficiently transparent for students, lecturers, and external reviewers.</p> |                                                                             | Overview of the New Curriculum Structure (to be Implemented in August 2026)<br><a href="#">link: BPP Evidence 9</a> |

## F Comment of the Higher Education Institution (13.05.2026)

| CRITERIA                        | SUB-CRITERIA           | FINDINGS (FROM REPORT)                                                                                                                                                                                                                    | RESPONSES (ACTION PLAN)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EVIDENCES                                                              |                                                                                                                                 |
|---------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                 |                        |                                                                                                                                                                                                                                           | BACHELOR PROGRAMME IN MATHEMATICS (BPM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | BACHELOR PROGRAMME IN PHYSICS (BPP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BACHELOR PROGRAMME IN MATHEMATICS                                      | BACHELOR PROGRAMME IN PHYSICS                                                                                                   |
| 4. Transparency & Documentation | 4.1 Module Handbook    | Missing prerequisites : "Nevertheless, the experts note inconsistencies in the Physics programme's module handbook, and module prerequisites are not always specified"                                                                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>The BPP acknowledges the experts' observation regarding inconsistencies in the Physics module handbook and the absence of prerequisites in some module descriptions.</p> <p>In response, the BPP will review and update the module handbook in line with the Physics 2026 Curriculum. The revision will ensure that all module descriptions are consistent with the revised curriculum and that prerequisites are clearly specified for relevant modules. This update will make the curriculum structure and course progression more transparent for students, lecturers, and reviewers.</p> |                                                                        | <p>Overview of the New Curriculum Structure (to be Implemented in August 2026)</p> <p>link: <a href="#">BPP Evidence 10</a></p> |
|                                 | 4.2 Diploma Supplement | Missing GPA distribution : "The diploma supplements of the two programmes under review do not include data on the GPA distribution of graduates in the same cohort nor information on total workload of the programme (SKS and ECTS)"     | <p>Sample Diploma Supplements for the Mathematics and Physics Programmes are provided. The Diploma Supplements have been prepared in accordance with the European template and have been standardised at the Faculty of Mathematics and Natural Sciences level to ensure consistency and compliance with international standards.</p> <p>Information regarding GPA distribution and the total programme workload, including SKS and ECTS equivalencies, is provided in the academic transcripts accompanying the Diploma Supplements. Through this arrangement, both Programmes ensure transparency and completeness of academic information to support international recognition and comparability of qualifications.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>Diploma Supplement</b></p> <p><a href="#">BPM Evidence 9</a></p> |                                                                                                                                 |
|                                 | 4.2 Diploma Supplement | Missing workload information : "The diploma supplements of the two programmes under review do not include data on the GPA distribution of graduates in the same cohort nor information on total workload of the programme (SKS and ECTS)" |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                        |                                                                                                                                 |
|                                 | 4.2 Diploma Supplement | Not aligned with European template : "The experts ask UNTAN to submit a sample Diploma Supplement, which is aligned with the European template, for each programme under review"                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                        |                                                                                                                                 |

## G Summary: Expert recommendations (26.05.2026)

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

| Degree Programme | ASIIN Seal                     | Maximum duration of accreditation |
|------------------|--------------------------------|-----------------------------------|
| Ba Mathematics   | With requirements for one year | 30.09.2031                        |
| Ba Physics       | With requirements for one year | 30.09.2031                        |

### Requirements

#### For all degree programmes

- A 1. (ASIIN 1.3, 1.5) The internship duration needs to be extended beyond one month and its duration, expected workload, and credit allocation be communicated transparently to students.
- A 2. (ASIIN 4.2) Ensure that the Diploma Supplement provides statistical data on the distribution of final grades, as set out in the ECTS Users' Guide.

#### For The Bachelor's Programme Physics

- A 3. (ASIIN 1.3, 4.1) The module handbook needs to make clear in which compulsory modules fundamentals of molecular physics are taught.
- A 4. (ASIIN 1.5) Develop and implement a strategy to monitor and reduce the programme's average time to degree.
- A 5. (ASIIN 4.1) The module descriptions need to be reviewed and updated. All compulsory and electives need to be included in the module descriptions.

### Recommendations

#### For all degree programmes

- E 1. (ASIIN 1.3, 3.1) It is recommended to strengthen English-language training within the Mathematics and Physics courses, particularly with regard to scientific terminology and academic communication.
- E 2. (ASIIN 1.3) It is recommended to strengthen the internationalisation strategy by expanding student mobility and structured cooperation with foreign partner institutions (e.g. exchanges and guest/visiting lecturers).
- E 3. (ASIIN 3.1) It is recommended to strengthen staff development and research capacity by expanding opportunities for lecturers' teaching and research mobility, supported by dedicated funding and targeted support programmes.
- E 4. (ASIIN 3.3) It is recommended to ensure reliable air conditioning in classrooms and laboratories to provide an adequate teaching and learning environment.

**For The Bachelor's Programme Mathematics**

- E 5. (ASIIN 3.3) It is recommended to increase the number of computers available in Mathematics laboratories.

## H Comment of the Technical Committees

### Technical Committee 12 – Mathematics (01.06.2026)

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

The TC follows the assessment of the experts without changes.

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

| Degree Programme | ASIIN-seal                     | Maximum duration of accreditation |
|------------------|--------------------------------|-----------------------------------|
| Ba Mathematics   | With requirements for one year | 30.09.2031                        |

### Technical Committee 13 – Physics (16.06.2026)

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

The TC members discuss, especially requirements A1 and A4. With regard to A1, the proposal is to make a recommendation on the specific duration of the internship beyond one month, as this should not be a requirement (see new recommendation E3). In addition, it is specified in the requirement that the workload of the internship must be in accordance with its duration.

Regarding A4, the TC proposes to specify that the strategy regarding monitoring and reduction of the length of study which was already developed needs to be further developed by the university.

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

| Degree Programme | ASIIN-seal                     | Maximum duration of accreditation |
|------------------|--------------------------------|-----------------------------------|
| Ba Physics       | With requirements for one year | 30.09.2031                        |

#### Requirements

**For all degree programmes**

- A 1. (ASIIN 1.5) The expected workload and credit allocation for the internship must be consistent with its duration and be communicated transparently to students.
- A 2. (ASIIN 4.2) Ensure that the Diploma Supplement provides statistical data on the distribution of final grades, as set out in the ECTS Users' Guide.

**For the Bachelor's Programme Physics**

- A 3. (ASIIN 1.3, 4.1) The module handbook needs to make clear in which compulsory modules fundamentals of molecular physics are taught.
- A 4. (ASIIN 1.5) Develop further the strategy to monitor and reduce the programme's average time to degree.
- A 5. (ASIIN 4.1) The module descriptions need to be reviewed and updated. All compulsory and electives need to be included in the module descriptions.

**Recommendations**

**For all degree programmes**

- E 1. (ASIIN 1.3, 3.1) It is recommended to strengthen English-language training within the Mathematics and Physics courses, particularly with regard to scientific terminology and academic communication.
- E 2. (ASIIN 1.3) It is recommended to strengthen the internationalisation strategy by expanding student mobility and structured cooperation with foreign partner institutions (e.g. exchanges and guest/visiting lecturers).
- E 3. (ASIIN 1.3) It is recommended to extend the duration of the internship beyond one month.
- E 4. (ASIIN 3.1) It is recommended to strengthen staff development and research capacity by expanding opportunities for lecturers' teaching and research mobility, supported by dedicated funding and targeted support programmes.
- E 5. (ASIIN 3.3) It is recommended to ensure reliable air conditioning in classrooms and laboratories to provide an adequate teaching and learning environment.

**For the Bachelor's Programme Mathematics**

- E 6. (ASIIN 3.3) It is recommended to increase the number of computers available in Mathematics laboratories.

## I Decision of the Accreditation Commission (26.06.2026)

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

The Accreditation Commission follows the changes proposed by the Technical Committee 13 - Physics. In addition, the AC proposes to combine the content of requirements A 5 and A3, as both refer to the module handbook. As the university has already submitted a statement regarding requirement A4 and developed a strategy, the AC proposes to specify that the programme's average graduation time needs to be monitored and structural barriers that lead to exceeded study periods removed.

The Accreditation Commission decides to award the following seals:

| Degree Programme | ASIIN-seal                     | Maximum duration of accreditation |
|------------------|--------------------------------|-----------------------------------|
| Ba Physics       | With requirements for one year | 30.09.2031                        |
| Ba Mathematics   | With requirements for one year | 30.09.2031                        |

### Requirements

#### For all degree programmes

- A 1. (ASIIN 1.5) Ensure that the expected workload and credit allocation for the internship are consistent with its duration and be communicated transparently to students.
- A 2. (ASIIN 4.2) Ensure that the Diploma Supplement provides statistical data on the distribution of final grades, as set out in the ECTS Users' Guide.

#### For the Bachelor's Programme Physics

- A 3. (ASIIN 1.3, 4.1) The module descriptions need to be reviewed and updated. All compulsory and electives need to be included in the module descriptions. The module handbook needs to make clear in which compulsory modules fundamentals of molecular physics are taught.
- A 4. (ASIIN 1.5) Monitor the programme's average graduation time and remove structural barriers that lead to exceeded study periods.

## **Recommendations**

### **For all degree programmes**

- E 1. (ASIIN 1.3, 1.6) It is recommended to strengthen English-language training within the subject-specific modules, particularly with regard to scientific terminology and academic communication.
- E 2. (ASIIN 1.3) It is recommended to strengthen the internationalisation strategy by expanding student mobility and structured cooperation with foreign partner institutions (e.g. exchanges and guest/visiting lecturers).
- E 3. (ASIIN 1.3) It is recommended to extend the duration of the internship beyond one month.
- E 4. (ASIIN 1.4) It is recommended to open the admission process to applicants of all ages, regardless of the date of their high school diploma.
- E 5. (ASIIN 3.1) It is recommended to strengthen staff development and research capacity by expanding opportunities for lecturers' teaching and research mobility, supported by dedicated funding and targeted support programmes.
- E 6. (ASIIN 3.3) It is recommended to ensure reliable air conditioning in classrooms and laboratories to provide an adequate teaching and learning environment.

### **For the Bachelor's Programme Mathematics**

- E 7. (ASIIN 3.3) It is recommended to increase the number of computers available in Mathematics laboratories.

## Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **Objectives and Learning Outcomes** shall be achieved by the Bachelor's degree programme Mathematics:

**ILO 1** : demonstrates academic integrity by upholding belief in the one Almighty God, human values, morality, and ethics to improve the quality of life for the nation based on Pancasila.

**ILO 2** : possess the ability to adapt, collaborate, and pursue self-development in mathematics while engaging with other disciplines.

**ILO 3** : able to observe, identify, formulate, and resolve problems using mathematical methods, either independently or with the aid of technology.

**ILO 4** : has theoretical and procedural understanding, encompassing exploration, generalisation, abstraction, and the development of mathematical thinking in problem-solving, and communicates it in the language of mathematics.

**ILO 5** : possesses comprehensive knowledge in mathematical modelling and can construct mathematical models for various problems, both in mathematics and other fields such as science or daily life and can determine problem-solving strategies.

**ILO 6** : demonstrates mathematical skills, including interpretation, reconstruction, analysis, and individual or team communication, presenting results accurately, clearly, and organised both orally and in writing.

The following curriculum is presented for **BPM**:

**CURRICULUM OVERVIEW  
MATHEMATICS STUDY PROGRAM**

| No                             | Module                                            | Code     | Semester | SKS              | ECTS                   |
|--------------------------------|---------------------------------------------------|----------|----------|------------------|------------------------|
| <b>First year</b>              |                                                   |          |          |                  |                        |
| 1                              | English                                           | UMG-105  | 1        | 3                | 5.01                   |
| 2                              | Pancasila                                         | MKWU2    | 1        | 2                | 3.34                   |
| 3                              | Physics                                           | MPU-112  | 1        | 2                | 3.34                   |
| 4                              | Contextual Chemistry                              | MPU-107  | 1        | 2                | 3.34                   |
| 5                              | Contextual Biology                                | MPU-111  | 1        | 2                | 3.34                   |
| 6                              | Introduction to Information Technology            | MPU-105  | 1        | 2                | 3.34                   |
| 7                              | Introduction to Modern Mathematics                | MPM-1121 | 1        | 3                | 5.01                   |
| 8                              | Calculus                                          | MPM-1111 | 1        | 4                | 6.68                   |
| <b>Total Credit Semester 1</b> |                                                   |          |          | <b>20</b>        | <b>33.4</b>            |
| 9                              | Religion Education and Ethics                     | MKWU1    | 2        | 3                | 5.01                   |
| 10                             | Indonesian Language                               | MKWU4    | 2        | 2                | 3.34                   |
| 11                             | Integral Calculus                                 | MPM-1211 | 2        | 4                | 6.68                   |
| 12                             | Elementary Linear Algebra                         | MPM-1221 | 2        | 4                | 6.68                   |
| 13                             | Discrete Mathematics                              | MPM-1222 | 2        | 4                | 6.68                   |
| 14                             | Statistical Methods                               | MPM-1241 | 2        | 3                | 5.01                   |
| <b>Total Credit Semester 2</b> |                                                   |          |          | <b>20</b>        | <b>33.4</b>            |
| <b>Second year</b>             |                                                   |          |          |                  |                        |
| 15                             | Geometry                                          | MPM-2112 | 3        | 4                | 6.68                   |
| 16                             | Graph Theory                                      | MPM-2122 | 3        | 2                | 3.34                   |
| 17                             | Introduction to Abstract Algebra                  | MPM-2121 | 3        | 4                | 6.68                   |
| 18                             | Linear programming                                | MPM-2131 | 3        | 2                | 3.34                   |
| 19                             | Probability Theory                                | MPM-2132 | 3        | 3                | 5.01                   |
| 20                             | Multivariable Calculus                            | MPM-2111 | 3        | 4                | 6.68                   |
| <b>Elective Modules</b>        |                                                   |          |          | <b>2 - 5</b>     | <b>3.34 - 8.35</b>     |
| <b>Total Credit Semester 3</b> |                                                   |          |          | <b>21 - 24</b>   | <b>35.07 - 40.08</b>   |
| 21                             | Civics Education                                  | MKWU3    | 4        | 2                | 3.34                   |
| 22                             | Vector Analysis                                   | MPM-2212 | 4        | 2                | 3.34                   |
| 23                             | Linear Algebra                                    | MPM-2221 | 4        | 4                | 6.68                   |
| 24                             | Elementary Differential Equations                 | MPM-2211 | 4        | 4                | 6.68                   |
| 25                             | Mathematical Statistics                           | MPM-2241 | 4        | 3                | 5.01                   |
| 26                             | Research Methodology in Mathematics               | MPM-2261 | 4        | 2                | 3.34                   |
| <b>Elective Modules</b>        |                                                   |          |          | <b>2 - 7</b>     | <b>3.34 - 11.69</b>    |
| <b>Total Credit Semester 4</b> |                                                   |          |          | <b>19 - 24</b>   | <b>31.73 - 40.08</b>   |
| <b>Third year</b>              |                                                   |          |          |                  |                        |
| 27                             | Introduction to Real Analysis I                   | MPM-3111 | 5        | 4                | 6.68                   |
| 28                             | Partial Differential Equations                    | MPM-3112 | 5        | 4                | 6.68                   |
| 29                             | Operations Research                               | MPM-3131 | 5        | 2                | 3.34                   |
| 30                             | Introduction to Computational Mathematics         | MPM-3151 | 5        | 2                | 3.34                   |
| 31                             | Algorithms and Programming                        | MPM-3152 | 5        | 3                | 5.01                   |
| 32                             | Introduction to Actuarial Mathematics and Finance | MPM-3132 | 5        | 3                | 5.01                   |
| <b>Elective Modules</b>        |                                                   |          |          | <b>2 - 6</b>     | <b>3.34 - 10.02</b>    |
| <b>Total Credit Semester 5</b> |                                                   |          |          | <b>20 - 24</b>   | <b>33.40 - 40.08</b>   |
| 33                             | Introduction to Real Analysis II                  | MPM-3211 | 6        | 4                | 6.68                   |
| 34                             | Complex Variable Functions                        | MPM-3212 | 6        | 4                | 6.68                   |
| 35                             | Differential Equation Modeling                    | MPM-3231 | 6        | 3                | 5.01                   |
| 36                             | Numerical Methods                                 | MPM-3232 | 6        | 3                | 5.01                   |
| 37                             | Assistance I                                      | MPM-3261 | 6        | 2                | 3.34                   |
| <b>Elective Modules</b>        |                                                   |          |          | <b>2 - 8</b>     | <b>3.34 - 13.36</b>    |
| <b>Total Credit Semester 6</b> |                                                   |          |          | <b>18 - 24</b>   | <b>30.06 - 40.08</b>   |
| <b>Fourth year</b>             |                                                   |          |          |                  |                        |
| 38                             | Assistance II                                     | MPM-4162 | 7        | 2                | 3.34                   |
| 39                             | West Kalimantan in Mathematics                    | MPM-4161 | 7        | 3                | 5.01                   |
| 40                             | Seminar                                           | MPM-4062 | 7        | 4                | 6.68                   |
| 41                             | Internship/Community Development Participation    | MPM-4061 | 7        | 2                | 3.34                   |
| <b>Elective Modules</b>        |                                                   |          |          | <b>0 - 5</b>     | <b>0 - 8.35</b>        |
| <b>Total Credit Semester 7</b> |                                                   |          |          | <b>11 - 16</b>   | <b>18.37 - 26.72</b>   |
| 42                             | Thesis                                            | MPM-4063 | 8        | 6                | 10.02                  |
| <b>Total Credit Semester 8</b> |                                                   |          |          | <b>6</b>         | <b>10.02</b>           |
| <b>Total Credit Semester</b>   |                                                   |          |          | <b>144 - 158</b> | <b>240.48 - 263.86</b> |

| ELECTIVE MODULE |                                        |          |          |     |       |
|-----------------|----------------------------------------|----------|----------|-----|-------|
| No              | Module                                 | Code     | Semester | SKS | ECTS  |
| Odd Semester    |                                        |          |          |     |       |
| 1               | Regression Analysis                    | MPM-2141 | 3        | 3   | 5.01  |
| 2               | Number Theory                          | MPM-2123 | 3        | 2   | 3.34  |
| 3               | Set Theory                             | MPM-2125 | 3        | 2   | 3.34  |
| 4               | Database                               | MPM-2151 | 3        | 3   | 5.01  |
| 5               | Fuzzy Logic                            | MPM-2124 | 3        | 3   | 5.01  |
| 6               | Linear Algebra Applications            | MPM-3121 | 5        | 2   | 3.34  |
| 7               | Dynamic Systems                        | MPM-3133 | 5        | 3   | 5.01  |
| 8               | Experimental Design                    | MPM-3141 | 5        | 3   | 5.01  |
| 9               | Introduction to Stochastic Processes   | MPM-3142 | 5        | 2   | 3.34  |
| 10              | Time Series Methods                    | MPM-3143 | 5        | 3   | 5.01  |
| 11              | Mathematics Rivalry                    | MPM-3161 | 5        | 2   | 3.34  |
| 12              | Independent Learning (Merdeka Belajar) | MPM-3061 | 5        | 11  | 18.37 |
| 13              | Introduction to Functional Analysis    | MPM-4111 | 7        | 3   | 5.01  |
| 14              | Capita Selecta                         | MPM-4163 | 7        | 2   | 3.34  |
| Even Semester   |                                        |          |          |     |       |
| 1               | Transformation Geometry                | MPM-2222 | 4        | 2   | 3.34  |
| 2               | Introduction to Semigroup              | MPM-2223 | 4        | 2   | 3.34  |
| 3               | Finite Group Theory                    | MPM-2224 | 4        | 2   | 3.34  |
| 4               | Multivariate Analysis                  | MPM-2243 | 4        | 4   | 6.68  |
| 5               | Sampling Methods                       | MPM-2242 | 4        | 3   | 5.01  |
| 6               | Non-Parametric Statistics              | MPM-2244 | 4        | 2   | 3.34  |
| 7               | Introduction to Metric Spaces          | MPM-3214 | 6        | 2   | 3.34  |
| 8               | Introduction to Topology               | MPM-3213 | 6        | 2   | 3.34  |
| 9               | Mathematical Methods                   | MPM-3233 | 6        | 3   | 5.01  |
| 10              | Introduction to optimisation Theory    | MPM-3234 | 6        | 3   | 5.01  |
| 11              | Careers in Mathematics                 | MPM-3262 | 6        | 3   | 5.01  |

| ELECTIVE MODULE FOR MBKM MODE |                                                |      |     |       |                      |       |                  |              |                    |               |                        |
|-------------------------------|------------------------------------------------|------|-----|-------|----------------------|-------|------------------|--------------|--------------------|---------------|------------------------|
| No                            | Module                                         | Smt. | SKS | ECTS  | Mode                 |       |                  |              |                    |               |                        |
|                               |                                                |      |     |       | Independent learning | DSBK  | Entrepreneurship | CEO's School | Statistical Corner | Smart Village | Independent Internship |
| 1                             | Assistance II                                  | 7    | 2   | 3.34  | ✓                    | ✓     | ✓                | ✓            | ✓                  | ✓             | ✓                      |
| 2                             | Internship/Community Development Participation | 7    | 2   | 3.34  | ✓                    | ✓     | ✓                | ✓            | ✓                  | ✓             | ✓                      |
| 3                             | West Kalimantan in Mathematics                 | 7    | 3   | 5.01  | ✓                    | ✓     |                  |              |                    | ✓             | ✓                      |
| 4                             | Independent Learning (Merdeka Belajar)         | 5    | 11  | 18.37 | ✓                    | ✓     | ✓                | ✓            | ✓                  | ✓             | ✓                      |
| 5                             | Mathematics Rivalry                            | 5    | 2   | 3.34  | ✓                    |       |                  |              |                    |               | ✓                      |
| 6                             | Database                                       | 3    | 3   | 5.01  |                      |       |                  |              | ✓                  | ✓             | ✓                      |
| 7                             | Operations Research                            | 5    | 2   | 3.34  |                      |       | ✓                | ✓            |                    |               |                        |
| 8                             | Sampling Methods                               | 4    | 3   | 5.01  |                      |       | ✓                | ✓            | ✓                  | ✓             |                        |
| 9                             | Introduction to Stochastic Processes           | 5    | 2   | 3.34  |                      |       |                  |              | ✓                  |               |                        |
| 10                            | Research Methodology in Mathematics            | 4    | 2   | 3.34  |                      |       |                  |              |                    | ✓             | ✓                      |
| 11                            | Non-Parametric Statistics                      | 4    | 2   | 3.34  |                      |       |                  |              |                    | ✓             |                        |
| Total Credit Semester         |                                                |      |     |       | 20                   | 17    | 20               | 20           | 23                 | 25            | 25                     |
| Total ECTS                    |                                                |      |     |       | 33.40                | 28.39 | 33.40            | 33.40        | 38.41              | 41.75         | 41.75                  |

According to the Self-Assessment Report, the following **Objectives and learning Outcomes** shall be achieved by the Bachelor's degree programme Physics:

**ILO 1** : accustomed to demonstrating good character reflected in scientific attitudes and ethics, discipline, and a sense of responsibility to support lifelong learning abilities (competences).

**ILO 2** : be able to analyse the basic concepts of classical and quantum physics and utilise various analytical methods to solve relevant physics problems (knowledge).

**ILO 3** : be capable of preparing, conducting, and analysing experimental results to explain scientific phenomena, as well as utilising related technologies (skills).

**ILO 4** : be able to formulate mathematical formulations to model/simulate processes/phenomena related to physics (skills).

**ILO 5** : be able to apply physics concepts with logical and relevant mathematical formulations, and/or conduct research to solve simple scientific problems and interdisciplinary issues within certain limits using scientific methods (skills).

**ILO 6** : be able to communicate the results of problem assessments and the implementation of science and technology orally, in writing, or through audio-visual means, and be able to lead and collaborate at various levels of roles within a team (skills).

The following curriculum is presented for **BPP**:

**CURRICULUM OVERVIEW  
PHYSICS STUDY PROGRAM**

| No                              | Module                          | Code     | Semester | SKS       | ECTS         |
|---------------------------------|---------------------------------|----------|----------|-----------|--------------|
| <b>First Year</b>               |                                 |          |          |           |              |
| 1                               | Indonesian Language             | MKWU-4   | 1        | 2         | 3.34         |
| 2                               | Physics IA                      | MPF-1111 | 1        | 3         | 5.01         |
| 3                               | Physics IB                      | MPF-1113 | 1        | 2         | 3.34         |
| 4                               | Basic Physics Laboratory I      | MPF-1115 | 1        | 2         | 3.34         |
| 5                               | Civics Education                | MKWU-3   | 1        | 2         | 3.34         |
| 6                               | Basic Chemistry                 | MPF-1103 | 1        | 2         | 3.34         |
| 7                               | Mathematics I                   | MPF-1101 | 1        | 3         | 5.01         |
| 8                               | Algorithm and Programming       | MPF-1131 | 1        | 2         | 3.34         |
| 9                               | Measurements and Data Analysis  | MPF-1117 | 1        | 2         | 3.34         |
| <b>TOTAL CREDITS SEMESTER 1</b> |                                 |          |          | <b>20</b> | <b>33.40</b> |
| 10                              | Religion Education              | MKWU-1   | 2        | 3         | 5.01         |
| 11                              | Physics IIA                     | MPF-1112 | 2        | 3         | 5.01         |
| 12                              | Physics IIB                     | MPF-1114 | 2        | 2         | 3.34         |
| 13                              | Basic Physics Laboratory II     | MPF-1116 | 2        | 2         | 3.34         |
| 14                              | Pancasila                       | MKWU-2   | 2        | 2         | 3.34         |
| 15                              | Mathematics II                  | MPF-1102 | 2        | 3         | 5.01         |
| 16                              | English Language                | UMG-1106 | 2        | 2         | 3.34         |
| 17                              | Computational Physics           | MPF-1132 | 2        | 3         | 5.01         |
| <b>TOTAL CREDITS SEMESTER 2</b> |                                 |          |          | <b>20</b> | <b>33.40</b> |
| <b>Second Year</b>              |                                 |          |          |           |              |
| 18                              | Mathematical Physics I          | MPF-2111 | 3        | 3         | 5.01         |
| 19                              | Mechanics                       | MPF-2113 | 3        | 4         | 6.68         |
| 20                              | Basic Electronics               | MPF-2151 | 3        | 3         | 5.01         |
| 21                              | Thermodynamics                  | MPF-2115 | 3        | 3         | 5.01         |
| 22                              | Electricity and magnetism       | MPF-2117 | 3        | 4         | 6.68         |
| 23                              | Modern Physics                  | MPF-2119 | 3        | 3         | 5.01         |
| <b>TOTAL CREDITS SEMESTER 3</b> |                                 |          |          | <b>20</b> | <b>33.40</b> |
| 24                              | Solid State Physics             | MPF-2142 | 4        | 3         | 5.01         |
| 25                              | Mathematical Physics II         | MPF-2112 | 4        | 3         | 5.01         |
| 26                              | Quantum Physics                 | MPF-2122 | 4        | 4         | 6.68         |
| 27                              | Experimental Physics            | MPF-2144 | 4        | 2         | 3.34         |
| 28                              | Introduction to Nuclear Physics | MPF-2114 | 4        | 3         | 5.01         |
| 29                              | Wave                            | MPF-2116 | 4        | 3         | 5.01         |
| 30                              | Statistical Physics             | MPF-2118 | 4        | 3         | 5.01         |
| <b>TOTAL CREDITS SEMESTER 4</b> |                                 |          |          | <b>21</b> | <b>35.07</b> |
| <b>Third Year</b>               |                                 |          |          |           |              |
| 31                              | Elective Module/ MBKM Mode      |          | 5        | 19        | 31.73        |
| <b>TOTAL CREDITS SEMESTER 5</b> |                                 |          |          | <b>19</b> | <b>31.73</b> |
| 32                              | Elective Module/ MBKM Mode      |          | 6        | 19        | 31.73        |
| <b>TOTAL CREDITS SEMESTER 6</b> |                                 |          |          | <b>19</b> | <b>31.73</b> |
| <b>Fourth Year</b>              |                                 |          |          |           |              |
| 33                              | Elective Module/ MBKM Mode      |          | 7        | 19        | 33.4         |
| <b>TOTAL CREDITS SEMESTER 7</b> |                                 |          |          | <b>19</b> | <b>31.73</b> |
| 34                              | KKM/PKM (Community Service)     | UMG-4101 | 8        | 2         | 3.34         |
| 35                              | Undergraduate Thesis            | MPF-4103 | 8        | 6         | 10.02        |
| <b>TOTAL CREDITS SEMESTER 8</b> |                                 |          |          | <b>6</b>  | <b>10.02</b> |

| Elective Module (Odd Semester)                                                                                                            |                                                             |          |       |    |      |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------|-------|----|------|
| 36                                                                                                                                        | Astrophysics                                                | MPF-3221 | 5     | 3  | 5.01 |
| 37                                                                                                                                        | Mathematical Physics III                                    | MPF-3223 | 5     | 3  | 5.01 |
| 38                                                                                                                                        | Simulation in Physics                                       | MPF-3231 | 5     | 3  | 5.01 |
| 39                                                                                                                                        | Artificial Intelligence                                     | MPF-4231 | 7     | 2  | 3.34 |
| 40                                                                                                                                        | Microcontroller Applications                                | MPF-3255 | 5     | 3  | 5.01 |
| 41                                                                                                                                        | Environmental Physics                                       | MPF-3251 | 5     | 3  | 5.01 |
| 42                                                                                                                                        | Biophysics                                                  | MPF-3253 | 5     | 3  | 5.01 |
| 43                                                                                                                                        | Radiation Detection Methods                                 | MPF-4253 | 7     | 3  | 5.01 |
| 44                                                                                                                                        | Nature Conservation                                         | MPF-4251 | 7     | 2  | 3.34 |
| 45                                                                                                                                        | Physics of Natural Disaster                                 | MPF-4255 | 7     | 2  | 3.34 |
| 46                                                                                                                                        | Introduction to Microstructure Analysis                     | MPF-3241 | 5     | 3  | 5.01 |
| 47                                                                                                                                        | Composite Material Physics                                  | MPF-4241 | 7     | 2  | 3.34 |
| 48                                                                                                                                        | Experiments of Composite Material Physics                   | MPF-4243 | 7     | 2  | 3.34 |
| 49                                                                                                                                        | Material Physics                                            | MPF-3243 | 5     | 3  | 5.01 |
| 50                                                                                                                                        | Metrology                                                   | MPF-3211 | 5     | 2  | 3.34 |
| Elective Module (Even Semester)                                                                                                           |                                                             |          |       |    |      |
| 51                                                                                                                                        | Galactic Dynamics                                           | MPF-3224 | 6     | 2  | 3.34 |
| 52                                                                                                                                        | Theory of Relativity                                        | MPF-3226 | 6     | 3  | 5.01 |
| 53                                                                                                                                        | Nanophononics                                               | MPF-4224 | 8     | 3  | 5.01 |
| 54                                                                                                                                        | Signal Processing                                           | MPF-3232 | 6     | 2  | 3.34 |
| 55                                                                                                                                        | Inversion Method                                            | MPF-4232 | 8     | 2  | 3.34 |
| 56                                                                                                                                        | Molecular Simulation                                        | MPF-3234 | 6     | 2  | 3.34 |
| 57                                                                                                                                        | Instrumentation                                             | MPF-3256 | 6     | 3  | 5.01 |
| 58                                                                                                                                        | Energy                                                      | MPF-3254 | 6     | 2  | 3.34 |
| 59                                                                                                                                        | Introduction to Reactor Physics                             | MPF-4256 | 8     | 3  | 5.01 |
| 60                                                                                                                                        | Radiation Protection                                        | MPF-3252 | 6     | 2  | 3.34 |
| 61                                                                                                                                        | Medical Instrumentation                                     | MPF-4252 | 8     | 3  | 5.01 |
| 62                                                                                                                                        | Material Characteristics                                    | MPF-4242 | 8     | 3  | 5.01 |
| 63                                                                                                                                        | Material Fabrication Method                                 | MPF-3248 | 6     | 3  | 5.01 |
| 64                                                                                                                                        | Introduction to Nanoscience and Technology                  | MPF-4246 | 8     | 3  | 5.01 |
| 65                                                                                                                                        | Material Characterization Method                            | MPF-3246 | 6     | 3  | 5.01 |
| 66                                                                                                                                        | Introduction to Polymers Physics                            | MPF-4248 | 8     | 3  | 5.01 |
| 67                                                                                                                                        | The History of Physics                                      | MPF-3222 | 6     | 2  | 3.34 |
| 68                                                                                                                                        | Research Methodology                                        | MPF-3307 | 6     | 3  | 5.01 |
| ELECTIVES MODULES FOR MBKM MODE                                                                                                           |                                                             |          |       |    |      |
| MODE: RESEARCH, INTERNSHIP, ENTREPRENEURSHIP, HUMANITY PROJECT, VILLAGE DEVELOPMENT PROJECT, INDEPENDENT PROJECT, AND TEACHING ASSISTANCE |                                                             |          |       |    |      |
| 69                                                                                                                                        | Scientific Ethics                                           | MPF-3301 | 5/6/7 | 2  | 3.34 |
| 70                                                                                                                                        | Scientific Writing Techniques                               | MPF-3303 | 5/6/7 | 3  | 5.01 |
| 71                                                                                                                                        | Literature Review                                           | MPF-3305 | 5/6/7 | 3  | 5.01 |
| 72                                                                                                                                        | Supervised Project                                          | MPF-4301 | 5/6/7 | 3  | 5.01 |
| 73                                                                                                                                        | Seminar                                                     | MPF-4303 | 5/6/7 | 3  | 5.01 |
| 74                                                                                                                                        | Physics Communication Media                                 | MPF-4305 | 5/6/7 | 3  | 5.01 |
| MODE: STUDENT EXCHANGE (INTER-UNIVERSITY)                                                                                                 |                                                             |          |       |    |      |
| 75                                                                                                                                        | Based on the courses enrolled at the destination university |          | 5/6/7 | 20 | 33.4 |