



ASIIN Seal Accreditation Report

Master's Degree Programmes

Physics

Materials Science

Biology

Provided by
University of Indonesia

Version: 23.06.2023

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) ²
Fisika	Physics	ASIIN	-	13
Material	Materials Science	ASIIN	-	05
Biologi	Biology	ASIIN	-	10
Date of the contract: 24.10.2022 Submission of the final version of the self-assessment report: 15.12.2022 Date of the on-site visit: 13.-15.03.2023 at: online				
Peer panel: Prof. Dr. Frank Hellwig, University of Jena Prof. Dr. Neil Shirtcliffe, Rhine-Waal University of Applied Sciences Prof. Dr. Gert-Ludwig Ingold, University of Augsburg Langgam Bagaspratomo, PT Fortasindo Nick Wisely, Student at ITB				
Representative of the ASIIN headquarter: Daniel Seegers				
Responsible decision-making committee: Accreditation Commission				
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015				

¹ ASIIN Seal for degree programmes

² TC: Technical Committee for the following subject areas: TC 05 – Materials Science, Physical Technologies, TC 10 – Life Sciences, TC 13 – Physics

Subject-Specific Criteria of Technical Committee 05 – Materials Science, Physical Technologies as of September 29, 2016	
Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of June 28, 2019	
Subject-Specific Criteria of Technical Committee 13 – Physics as of March 20, 2020	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Physics	M.Si. / M.Sc.	-	7	Full time	/	4 semesters	36 Indonesian credits (65,16 ECTS)	Each Semester / 1990
Materials Science	M.Si. / M.Sc.	-	7	Full time	/	4 semesters	36 Indonesian credits (65,16 ECTS)	Each Semester / 1983
Biology	M.Si. / M.Sc.	-	7	Full time	/	4 semesters	36 Indonesian credits (65,16 ECTS)	Each Semester / 1993

For the Master's degree programme Physics₂ the institution has presented the following objectives on its website:"

The MPPhy conducts education in Physics to produce:

1. Teaching staff and researchers who can teach in undergraduate education programs in the field of physics and can plan and carry out research in the field of physics and its applications
2. Researchers at research institutes who can design and carry out research in the field of physics and its applications
3. The Professionals or experts in academia/research, industry, hospitals, and other multinational companies can learn and adapt quickly to the industrial work environment and solve problems in their work environment by applying physical science and scientific thinking"

For the Master's degree programme Materials Science, the institution has presented the following profile on its website (<https://physics.ui.ac.id/academic/master-in-materials-science/>: Last accessed 5/22/2023):"

³ EQF = The European Qualifications Framework for lifelong learning

The MPMat conducts education in Physics to produce:

1. To carry out the Three Pillars of Higher Education (Tridharma) activities in order to produce materials science graduates who have high intellectuality, intelligent, noble character and ability to compete globally.
2. To develop an academic atmosphere and research culture for the advancement of science in order to produce innovations and solutions in the field of materials science by giving contribution for sustainable development.
3. To contribute and play an active role in the development of materials science and its innovation.”

For the Master’s degree programme Biology₂ the institution has presented the following profile on its website:”

The objectives of the Master Programme in Biology are:

Graduates with honesty, integrity, and social responsibility.

Producing graduates who have academic ethics that prioritize honesty, integrity, and social responsibility.

Graduates with competence in the biology field.

Producing graduates with competence in the biology field that can be applied to manage, utilize, and preserve biodiversity.

Graduates who are able to design and conduct research independently.

Producing graduates who are able to design and conduct research independently in the field of biodiversity conservation and communicate it to the wider community.

Strengthen research capabilities in the field of biodiversity through collaboration with various universities and research.

Took advantage of Indonesia's uniqueness as a "Megadiversity" country to strengthen research capabilities in the field of biodiversity through collaboration with various universities and research.”

C Peer Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Objective-module matrices
- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Module descriptions
- Website
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The experts refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committees 05 (Materials Science/Physical Technologies), 10 (Life Sciences), and 13 (Physics) respectively, the objective-module matrices for each degree programme, and the modules as a basis for judging whether the Intended Learning Outcomes (ILO) of the Master's degree programmes correspond with the competences as outlined by the SSC. They come to the following conclusion:

The descriptions of the qualification objectives are comprehensive and include the achieved competencies and possible career opportunities of the graduates. Furthermore, students, lecturers and industry representatives confirm that they are involved in the ongoing development and updating process of the ILO. Any adjustments to the Programme Educational Objectives (PEO) and ILO have to be in line with the decrees of the Government and the Ministry of Education. They also have to adhere to the guidelines of the Indonesian Qualification Framework (IQF) and reflect the input of subject specific scientific associations.

The Programme Learning Outcomes (PLO) are divided into Knowledge, Skills and Competency and reflect interdisciplinary skills, which are the same for all programmes at Universitas Indonesia (UI).

Students can complete the programmes in regular courses, but also have the option of completing the programmes in the By-Research track. This means that students do not attend regular courses but rather work on scientific publications and literature reviews. This version of the programmes mainly focuses on the students' scientific experience and skills and helps them to develop their special research interests.

Judging from the tables that link graduate profiles of the three Master's degree programmes with the intended learning outcomes and the three objective-module matrices that delineate in which modules students learn the skills purposed in the PLO, the experts see that the objectives and intended learning outcomes of the three master's degree programmes are suitable to produce qualified graduates and fulfil the IQF as well as the European Qualification Framework (EQF).

In summary, the experts are convinced that the intended qualification profiles of the three graduate programmes under review allow students to take up an occupation which corresponds to their qualification. The experts agree that the qualification objectives of all programmes adhere to level 7 of the European Qualification Framework, which relates to Master's programmes and to the respective ASIIN Subject-Specific Criteria of the Technical Committees 05, 10 and 13. They aim at the acquisition of subject-specific competences and are generally formulated clearly and precisely. The objectives and learning outcomes of the study programmes can be accessed on the university's website.

The experts appreciate that a regular revision process for the objectives, learning outcomes and curricula of the programmes is in place. Every four years, a larger revision takes place that includes internal as well as external stakeholders, while minor changes are made regularly. The students, alumni and representatives of schools and the private sector confirm that they are actively involved in these processes.

Criterion 1.2 Name of the degree programmes
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Evidence:

- Self-Assessment Report
- Diploma Supplements
- Discussions during the audit
- List of laboratory equipment

Preliminary assessment and analysis of the experts:

The titles of the degree programmes follow the rules for naming study programmes set by the Indonesian Ministry of Education. The experts hold the opinion that the English translation and the original Indonesian name of the Master's degree programmes Physics, Biology and Materials Science correspond with the intended aims and learning outcomes as well as the main course language.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Academic guidelines
- Module descriptions
- Objective-module matrices
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The curricula of all three programmes are designed to comply with the programme objectives and learning outcomes and are subject to constant revision processes. Regular changes are made to ensure that the curricula are up to the current requirements and adequately reflect the technological and scientific progress in the respective areas.

All programmes last two years and students must achieve a minimum of 36 SKS to complete their studies. UI offers its Master's programmes in two variants: By-Research and By-Course. The structure of the by-research track is the same for all programmes. It consists of seven modules: Literature Review 1 and 2, Research Proposal (Semester 1), Presentation of Progress, Scientific Publication 1 (Semester 2), Scientific Publication 2 (Semester 3) and Thesis (Semester 4). The by-research track is designed to provide students with practical research experience and offers many opportunities for students to conduct research in their personal areas of interest.

The experts discuss with the programme coordinators whether the students choose to work on the same subject or subject area throughout their studies. The programme coordinators report that most students follow a personal focus through their research, which helps them to delve into each of their subjects and serves as good preparation for their

thesis work. The experts appreciate that the UI guides their students and helps them to develop their interests and at the same time helps them to find a theme to focus their studies, which provides them with profound knowledge in their field of research and develops them into specialists.

The experts also discussed with the students and programme coordinators whether publishing in the third semester might be a problem that causes students to exceed the duration of their studies. Both students and programme coordinators explain that there is a lot of support available to help students choose the right journal and to help them with their publications. However, in some cases, problems arise that are beyond the reach of the UI, or students simply choose to publish in journals that have long waiting times, which can lead to students exceeding their study period. While these are the exceptions, the experts understand that UI provides the best possible support and appreciate all the support mechanisms in place. This support is, of course, also available to those students who have chosen the Master's by-course track and are also required to publish in a journal.

The curriculum of the MPPhy by-course track consists of two compulsory courses, Computational Methods in Physics and Mathematical Methods in Physics, as well as the seminar, the scientific publication and the thesis, and offers students the opportunity to choose two electives in five specific directions:

- a. Theoretical Nuclear Physics, Particles and Astrophysics.
- b. Condensed Matter Physics.
- c. Instrumentation Physics.
- d. Reservoir Geophysics.
- e. Geothermal Exploration.

The MPMat curriculum consists of four compulsory core courses in the first semester: Materials Structure, Materials Properties and Performance, Thermodynamics and Materials Kinetics, and Characterisation and Materials Analysis. These modules serve to consolidate and unify the students' knowledge and form the basis for subsequent semesters. In the second semester, students can choose from a diverse list of elective modules that can serve as a starting point for their scientific publication and thesis.

The MPBio curriculum is designed as a continuation of the undergraduate programme in biology. It consists of compulsory modules designed to ensure the attainment of the basic PLO and is complemented by elective modules designed to enhance students' knowledge and skills in an area of specialisation. The compulsory modules are Indonesian Biodiversity, Indonesian Biogeography and Biosystematics and Statistics and are complemented by the Scientific Writing Course, the Scientific Publication and the thesis. The ratio of elective and

compulsory modules is 12 to 24. The elective modules are designed according to the University's research groups, which are divided into the following areas: Microbial Systematics and Prospecting, Community Ecology and Environmental Biology, Cellular and Molecular Mechanisms in Biological Systems, Wildlife Biology and Sustainable Landscapes, and Metabolomics and Chemical Ecology.

Both students and representatives of industry and public institutions are satisfied with the overall composition of the curricula. However, industry representatives would like to see more soft skills taught to students, especially intercultural and communication skills. They also see a lack of presentation skills among UI graduates and would like to see these soft skills developed as well. The reviewers agree with this assessment. Particularly as presenting in English can be a big hurdle for students who are not necessarily taught in English at all. It appeared that some students did receive training but it is not a formal part of the curriculum.

After analyzing the module descriptions and the study plans, the experts confirm that all three master's programmes are divided into modules and that each module is a sum of coherent teaching and learning units. Students are able to define individual focuses through broad ranges of electives. The students confirm that the structure of the programmes allows them to reach the learning outcomes within the regular duration. This is corroborated by data provided by UI, which demonstrates that the average study time is very close to the allocated four semesters.

Information about the curricula is available for students in the E-learning Management System (EMAS) and on the programme's homepage. The online management system also helps with the composition of study plans since it alerts students if their courses overlap and helps them to solve such issues.

Overall, the experts are satisfied with the curricula of all programmes. They see that the programmes are well-structured and that the modules build on each other in a reasonable way, enabling the students to effectively reach their learning outcomes.

International Mobility

The Self-Assessment Report as well as the discussions make it clear becoming an internationally acknowledged university is one of UI's primary goals. The experts point out that international mobility, with regard to the lecturers as well as to the students, is a key factor in these efforts.

The experts learn that UI provides opportunities for students to conduct research and study semesters abroad. The international office helps to recognize courses for both Indonesian and foreign students. There are cooperation agreements with organisations worldwide (for

instance, in UK, Japan, Germany, Canada, USA, Australia, Austria, South Africa, Brazil, China, the Czech Republic, Hungary) partly regarding student exchange, partly regarding research collaboration. Due to funds from the Ministry of Education, UI is able to support students and lecturers with scholarships to take part in international exchange programmes. During the Covid-19 pandemic these exchanges have partly taken place as online courses. This way, UI maintained the exchange of ideas and experiences without endangering students and lecturers.

Additionally, the Materials Sciences subject area has a double-degree programme for PhD students with the Institute for Materials research at the Hokkaido University. In addition to this programme, students and lecturers can apply for research grants which will be provided on the faculty and on the university level under various schemes including postgraduate grants that can be applied for by students of the master's programmes. Students of the degree programmes under review will have the chance to visit international conferences or take part in international research teams that are organised by their lecturers.

The experts appreciate the efforts undertaken by the university to foster student mobility. They remark, however, that the effective amount of mobility to other higher education institutions in Indonesia or abroad is still relatively low. Furthermore, not many of the students report that they have been able to take advantage of the opportunity. The experts emphasise that it is very useful for students to spend some time abroad already during their studies to improve their English proficiency, to get to know other educational systems, and to enhance their job opportunities. As it seems now, students will have the opportunity to go abroad, but this depends on individual effort and is not very visible for students. The experts recommend to enable students from all programmes to go abroad by defining a mobility window and a mobility programme at programme level for each of these programmes. Therefore, they recommend that UI strengthens their internationalisation effort and make the stays abroad, also outside of South-East-Asia, more attractive to students.

Criterion 1.4 Admission requirements

Evidence:

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

Preliminary assessment and analysis of the experts:

According to the Self-Assessment Report, the admission procedures and policies for new students follow the Rector's Regulation No. 5/2021 on Admission Requirements and Selection Procedures. The requirements, the schedule, the place of enrolment and the selection test are published on the UI website and are therefore accessible to all stakeholders.

The faculty and the program assess the capacity for a given year of admission and report it to the Rector for formalization through a decree. For the last three years, the quota for the Master's program has been 30 students per year for MPMat and MPBio and 80 students for MPPhy. Admission of students to all UI programs is coordinated by the New Student Admissions Unit (PMB) and information is available online.

There are three main admission systems for students to pursue master's studies at UI: UI's independent written test, prospective students can apply through the independent selection (SIMAK UI) organized by the New Student Admissions Unit (PMB) of UI, and international students can apply through the Kemitraan Negara Berkembang (KNB) Scholarship or UI Great Scholarship. SIMAK UI gives a wider range of candidates the opportunity to apply to study at UI. Each program has specific requirements such as work experience and undergraduate background.

The KNB Scholarship is organized by the Ministry of Education, Culture, Research and Technology in cooperation with the Ministry of Foreign Affairs and the Embassy. The UI Great Scholarship is administered by the UI International Office. Admission of international students is organized by the PMB office through the online system.

The report indicates that the decrease of the university's student intake is due to low competitiveness for the past three years and very much influenced by the Covid-19 pandemic. However, in order to increase enrolment, the university has implemented several measures to encourage alumni to continue their studies in the master's program, such as waiving entrance exams, offering fast-track programs, and recruiting foreign students from targeted countries.

The composition of the MPPhy and MPMat students is unique in that more than 50% of the students are already working when they apply to the Master's program. They work in institutions that have established programs to enable their employees to continue their academic development in either a Master's or PhD programme.

The admission website informs potential students in great detail about the requirements and the necessary steps to apply for admission into the programmes. Since the rules are based on decrees by the ministry of education and on the university's written regulations, the experts deem them binding and transparent.

Criterion 1.5 Workload and Credits

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Curriculum handbooks of the degree programmes
- Survey of student satisfaction related to the workload
- Module descriptions
- Discussions during the audit
- Students handbook

Preliminary assessment and analysis of the experts:

- Based on the National Standard of Higher Education of Indonesia, the four programmes use a credit point system called SKS, which is regulated as follows:
1 CP covers 50 minutes contact hours + 60 minutes assignment/tutorial + 60 minutes of self-studies per semester week

In comparison to the ECTS credit system, wherein 1 ECTS equals 25-30 hours of students' workload, it is determined that 1 CP is awarded for 170 minutes of work per semester week. One semester usually consists of 14 weeks of lectures and two weeks of exams. The students' workload (contact hours and self-studies) is measured in Indonesian credit points (SKS), and converted to the European Credit Transfer System (ECTS). According to the legal requirements, the actual number is 36 SKS (65 ECTS) for the Master's degree programmes.

Most credits are earned in the first year of study, allowing students to work intensively on their publications and theses in their second and final year of study. However, as the results of the tracer study show, students indicate that preparing and conducting dissertation research is the primary reason for extending their studies. UI is already addressing this issue by closely monitoring thesis research and workload. However, since the average length of study is still no more than one semester longer, the experts consider this to be within the expected range for the programs under review.

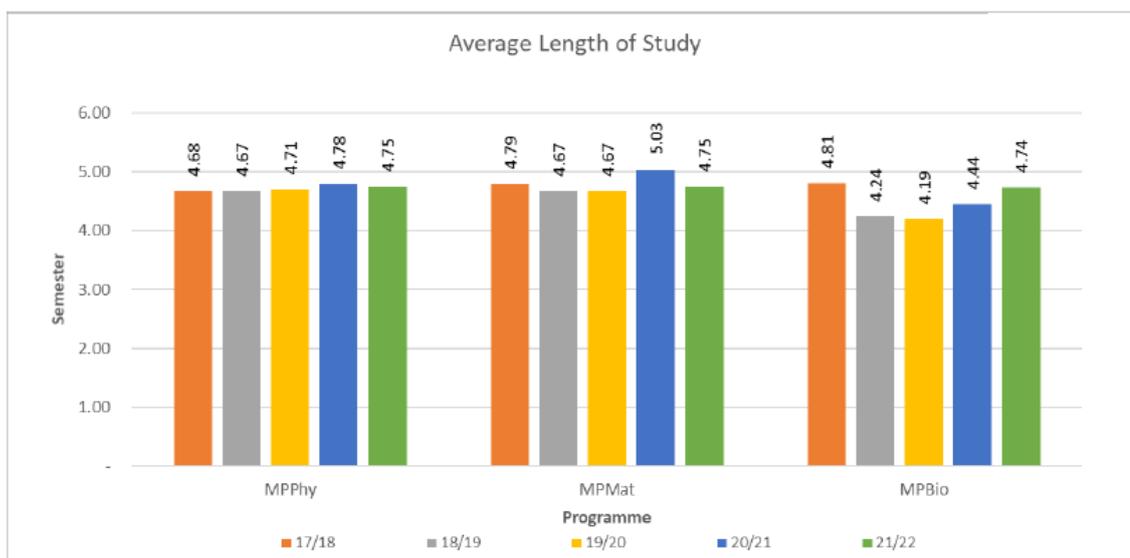


Figure 5.2.2 Graduate' Length of Study in 201-2022

During the onsite visit the experts discussed with programme coordinators and students the current workload in both programmes. Out of these discussions no systematic problems were identified. This confirms the impression of the experts that the workload defined for the single modules is realistic in view of the objectives and content of the courses.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Photos and videos of laboratories
- Self-Assessment Report
- Module descriptions
- Samples of lecturer evaluation by students
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The three programmes under review make use of several different educational methods for each course such as interactive lectures, small group discussions, problem-based learning, project-based learning, collaborative learning, laboratory practical work, computer-based assignments, excursions and final tasks consisting of internship, student community service, seminars, final project and case-studies.

UI has transitioned from a teacher-centred to a student-oriented and Outcome-Based Education (OBE) approach in order to involve all students in the learning process and develop their thinking and analytical skills. They introduced the idea of OBE and have, therefore,

revised all of their curricula and trained their staff to implement the new approach appropriately. The new approach is supposed to prepare students for their future employment and strengthen soft skills as well as subject-specific competences. The continuous education on teaching methods and higher education is well received and appreciated by the faculty members.

For the master by-course, the most common method of teaching is class session, with several courses having integrated laboratory exercises. Lecturers generally prepare presentations to aid the teaching process. With individual or group assignments, such as discussions, presentations, or written tasks, students are expected to improve their academic as well as their soft skills. In addition, practical activities are implemented to familiarize students with the use of academic research methods. The Master by-research program also allows students to conduct independent research with the goal of publishing a scientific paper and thesis at the end of the programme.

UI uses EMAS as their main tool to organise their teaching. Lecturers can use the tool to upload their teaching materials, hold small quizzes, assign coursework and monitor the participant activity. Students have the possibility to interact with the lecturers and with other students through different channels. The tool is highly valued by the students, but they would welcome a more reliable and stable server performance.

During the classes, active and interactive teaching methods (e.g., lectures, discussions, reports, presentations, and group work) are applied. UI wants to encourage students to gain knowledge from different scientific areas and wants to introduce them to research activities. Therefore, the master's programmes provide scenarios/problems that enhance students' critical thinking and problem-solving skills. The teaching and learning are supported by a broad range of media, both traditional (books, papers) and online (videos, presentations etc.). During the Covid-19 pandemic, UI has swiftly switched to online and hybrid learning with video conferences, recorded videos and other media.

Another tool UI uses to improve the diversity of teaching and learning is the invitation of guest lecturers from the industry or alumni who are able to convey practical experiences and present examples of how the contents of the three master's programmes are applied in practice. The experts welcome this approach and recommend deepening the efforts since they could learn during the discussion with the industry representatives that this exchange is highly valued by them and that all parties benefit from the opportunity to cooperate.

During the discussions with the programme coordinators and the teaching staff, the experts learn that the teaching staff tries to implement English assignments such as presentations and written homework to support the English language proficiency of the students. Some of the face-to-face teaching is also held in English depending on the lecturer.

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

Criterion 1.3

The experts appreciate UI's efforts to promote international mobility for the graduate programs under review. However, they maintain their recommendation to expand the scope and engage in collaborations outside of Asia to broaden students' horizons with new perspectives.

The experts consider Criterion 1 to be **fulfilled**.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, concept and organisation
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Evidence:

- Self-Assessment Report
- Module descriptions
- Examination regulations
- Curriculum handbooks for all degree programmes
- Samples of student's work (projects, exams and thesis)
- Statistical data
- Websites
- Academic Calendar

Preliminary assessment and analysis of the experts:

Each course has to determine objectives, which support the achievement of the Programme Learning Outcomes of the respective programme. Accordingly, each course must assess whether all defined learning outcomes stated in the module description have been achieved.

According to the self-assessment report, quizzes, tests, practical performances, assignments, small projects, written exams and presentations are implemented to assess the students' achievement of the learning outcomes in the by-course programme. Students of the by-research programme will mostly conduct literature reviews, oral presentations and work on scientific papers.

At the first meeting of a course, the students are informed about what exactly is required to pass the module. The form and length of each exam is mentioned in the module descriptions that are available to the students via UI's homepage and the EMAS. It is common to hold small quizzes every two or three weeks, but there are generally no unscheduled tests. The students are informed about mid-term and final exams via the academic calendar. The final grade of each module is calculated based on the score of these individual kinds of assessment. The exact formula is given in the module handbook. UI uses a grading system with the grades A, B, C, D and E, where a C (equivalent to a Grade Point of 2) is necessary to pass a module and a B (equivalent to a Grade Point 3) is necessary to pass the final project. Students who get an E are obliged to retake the course and the exam in the regular semester or in a short/intermediate semester. Students who get B, C, and D can improve their grade in the regular semester or in the short/intermediate semester, where the grade listed on the transcript is the highest.

Based on the academic regulation, to be eligible to take the final exam, students must attend at least 75 % of the total course sessions. Students who are not able to attend the final exam due to illness or other reasons can provide proof and take the follow-up exam scheduled by the study programme. Students can also take a semester break if they are missing for a longer period due to illness or in other severe cases. The university accommodates students with disabilities with special measures to enable them to take the exams in an appropriate way.

Due to the freedom of learning approach (MBKM), students have the opportunity to take courses at other universities or to engage in field work practice or internships. As stated in 1.3, students then have the chance to transfer their credits and to get these courses listed in their final transcript. The experts appreciate this flexible approach as it encourages students to engage in national and international exchanges and to experience the scope of their study programmes at other universities and in practice.

The experts discuss with the students how many and what kind of exams they have to take each semester. They learn that for most courses there is one mid-term exam and one final exam. For other courses, there is only one final exam. Usually, there are additional practical assignments or quizzes. The final grade is the sum of the exams. The students confirm that they are well-informed about the examination schedule, the examination form and the rules for grading.

Students are required to write a master's thesis in the last year of their studies. They are admitted to write their thesis when they have prepared a research proposal. The details of the topic and the research methods to be used must be discussed with the assigned supervisor. After completing the work on the thesis, the student has to present and defend the

results in front of an examination committee consisting of the supervisors and at least three examiners. The supervisors' feedback accounts for 60% of the grade and the examiners' feedback accounts for 40% of the grade.

The experts examined a sample of examination papers and theses and are very satisfied with the general quality of the samples. The experts observe that the theses vary in length and tried to clarify during the discussions whether this is due to the fact that students who have chosen the research track are expected to submit longer theses. The programme coordinators clarify that students in both tracks work with the same criteria, although there may be differences in the implementation of the depth and quality of the research projects when comparing the two tracks. However, the experts agree that the length of a thesis should be determined by the scope of the research question and the depth of analysis required to answer it comprehensively, and do not consider the variation in volume to be an issue.

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

UI does not comment on criterion 2.

The experts consider criterion 2 to be **fulfilled**.

3. Resources

Criterion 3.1 Staff and Staff Development
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Evidence:

- Self-Assessment Report
- Staff Handbook
- Samples of lecturer evaluation by students
- Study plans of the degree programmes
- Module descriptions
- Websites
- Discussions during the audit

Preliminary assessment and analysis of the experts:

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

The university provides the following tables, displaying the number of lecturers for each study programme as well as the lecturer student ratio:

Year	MPPhy			MPMat			MPBio		
	Number of staff	Number of active students	Staff-to-Student Ratio	Number of staff	Number of active students	Staff-to-Student Ratio	Number of staff	Number of active students	Staff-to-Student Ratio
2017	21	175	1:8	11	26	1:2	15	54	1:4
2018	21	176	1:8	9	24	1:3	14	52	1:4
2019	20	201	1:10	9	31	1:3	16	52	1:3
2020	20	155	1:8	9	33	1:4	18	46	1:3
2021	20	105	1:5	8	28	1:4	21	48	1:2

The number of lecturers and supporting staffs meets the national criteria for higher education and, therefore, adheres to the regulation of the ministry. The experts learn that the full professorship can only be attained by collecting scores due to publications, community service and teaching experience. The score will be better for publications in renowned journals or if the publication gains international recognition. Getting promoted to the associate or full-professorship level can therefore take several years. The main difference of tasks and responsibilities based on academic staff position lies in the proportion of teaching and research activities. The higher the academic staff position is, the greater the proportion of research activities, but the lower is the proportion of teaching activities. The following table shows the distribution of major faculty responsibilities and the number of credits required for each position.

No.	Academic position	Academic qualification	Main components			Supporting component
			Education	Research	Community service	
1	Assistant Professor (100, 150, 200, 300 credits)	Magister	≥45%-55%	≥25-35%	≤10%	≤10%
2	Associate Professor (400, 550, 700 credits)	Magister/ Doctor	≥40%	≥40%	≤10%	≤10%

3	Professor (850, 1050 credits)	Doctor	≥35%	≥45%	≤10%	≤10%
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The academic staff is involved in a number of research projects funded by grants from the Indonesian government, the university itself or other research funds. If the respective grants allow it, students are involved in these projects, mostly through undergraduate theses.

To support the academic staff, the UI employs a variety of support staff, including administrative staff, technicians, and laboratory staff. The support staff monitors and assists students while they use the equipment and provides training in laboratory safety. To ensure that there is enough qualified staff to provide this training, the UI also provides workshops and training for its staff.

According to the self-assessment report, UI encourages the continuing professional development of its staff. Various scholarships and funds are used to support lecturers in applying for professorships or to conduct research for the purpose of academic development and recognition. New lecturers are obliged to engage in didactical and pedagogical training and in international collaborations. Furthermore, all lecturers have gone through trainings regarding the new approach of OBE.

The faculty is committed to supporting academic development through domestic and overseas training for teaching staff, even though their competency and expertise have already met the government standard. This training aims to improve their teaching, their didactical abilities and their soft skills. The experts appreciate these offers and recognise the efforts which are undertaken to ensure both the quality of teaching and the non-academic support and guidance coming from the lecturers.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff as well as the support mechanisms for the continuing professional development of teaching staff are suitable for successfully implementing and sustaining the degree programmes.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report
- Curriculum handbooks for all degree programmes
- Students handbook

- Discussions during the audit

Preliminary assessment and analysis of the experts:

In order to support students in completing their studies on time with good achievements, the university and the faculty provide a variety of different staff members such as academic advisors, thesis advisors, counsellors, laboratory assistants, and student assistants, as well as academic and personal support and assistance through various means. The main contact person for every student is their academic advisor, who is assigned to them in their first semester. The academic advisor shall help them develop an adequate schedule for their studies, choose electives according to their skills and interests and support them in case of academic and non-academic problems. Each student has the opportunity to meet with their academic advisor, who is also responsible for monitoring their study progress, in accordance with their needs. Furthermore, there are supervisors for the thesis, who give advice on specific issues related to thesis research aspects. At the beginning of each semester, the GPA (Grade point average) provides direction for the students regarding their study plans, targets to be achieved and strategies for selecting courses. During the semester, the academic advisor monitors the progress of the students. At the end of the semester, the academic supervisor evaluates the achievement of students under their supervision by checking the GPA they receive. In the UI, this mentoring process is supported by the presence of the Academic Information System (SIK-NG), which facilitates the monitoring of GPA, academic progress and approval of semester plans, as well as the final undergraduate thesis.

UI also provides counselling regarding non-academic problems. The psychological counsellor helps and guides students who have individual problems, such as anxiety, depression or other personal or psychological issues. Students agree that this service is very useful for them, especially in discussing academic issues during their studies.

There are many scholarships offered to students (e.g., from private companies, the government or other foundations). This includes scholarships for students from low-income families and for those with high academic achievements.

Every student who enrolls for the thesis or final project course will be assigned one or two thesis supervisors. The role of the thesis supervisors is to help students to complete their thesis research. They also monitor the progress of the thesis in order to ensure the completion of the thesis within the intended period of time.

The experts recognise the good and trustful relationship between the students and the teaching staff. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well-informed about the services available to them.

Criterion 3.3 Funds and equipment

Evidence:

- List of laboratories and equipment
- Photos and videos of the facilities
- Partnership agreements
- Recapitulation of budget
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The university and the faculty are mainly funded by the Indonesian government through tuition fees, and through grants for research projects. The figures presented by the university show that the faculty's income is stable, and the funding of the degree programmes is secured. The academic staff emphasise that from their point of view, the degree programmes under review receive sufficient funding for teaching and learning activities. The students confirm this positive impression and state their satisfaction with the available resources.

In preparation of the audit, the university provided a number of videos showing the laboratories of the programmes. During the online visit, the laboratories, the lecture rooms and the library were shown in more detail. The experts notice that the facilities are in a very good condition and offer equipment on a very high level. The library is well-equipped and the library support together with the research infrastructure offer very good conditions for students and lecturers.

The experts learn that students are able to use all of the equipment available, but are placed on a waiting list for some of the high value equipment that is in high demand. To ensure that waiting times do not become too long, the experts recommend that these waiting lists be monitored regularly. Some of the students also report that the UI has various research collaborations and that the more specialized equipment is mostly available through the UI's partners.

While the library offers a lot of space for students to study, the experts learned from the students that the faculty buildings do not offer much space for studying. During the online tour, the experts could also see that many students use the floor in the faculty buildings to sit together. The experts therefore recommend that more self-study spaces be created in the faculty itself.

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

Criterion 3.3

UI states that it has a working system for organizing access to laboratory equipment and is also working with other institutions to improve access to some of the more expensive equipment. The experts consider this solution to be reasonable.

UI has provided opportunities for students to engage in self-study. The experts are pleased with the new opportunities, which may be even more valuable for undergraduate students. They understand that graduate students are most likely to engage in self-study in their research labs.

The experts consider criterion 3 to be **fulfilled**.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Module descriptions
- Websites

Preliminary assessment and analysis of the experts:

The module handbooks for all programmes have been published on UI's website and are thus accessible to the students as well as to all stakeholders. The experts observe that they contain all required information about the people responsible for each module, the teaching methods and workload, the credit points awarded, the intended learning outcomes, the examination requirements, the forms of assessment, the applicability, the admission requirements and details explaining how the final grade is calculated.

After the assessment of the provided evidences, the experts conclude that the module descriptions are very detailed but some module descriptions are missing (Physics: e.g. analytical mechanics, quantum mechanics, condensed matter and statistical mechanics). The experts ask UI to provide a complete version of the module handbooks.

As the experts were able to learn during the audit, course content is regularly updated and emerging hot topics are discussed in the relevant courses. They would appreciate it if UI

would commit to regularly adding any updated material to their module descriptions and documenting the date of the change

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Sample Transcript of Records for each degree programme
- Sample Diploma certificate for each degree programme
- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the experts:

The experts confirm that the students of all degree programmes under review are awarded a diploma and a diploma supplement after graduation. The diploma consists of a diploma certificate and a transcript of records. The transcript of records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA. The diploma supplement contains information about the degree programme including acquired soft skills and awards (extracurricular and co-curricular activities). However, it currently does not inform about the distribution of grades within the student cohort, which is necessary so that potential employers can properly evaluate a student's grade. Therefore, UI has to add this statistical data.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Reports
- Curriculum handbooks for all degree programmes
- Academic Guidelines
- Examination regulations
- All relevant regulations as published on the university's website

Preliminary assessment and analysis of the experts:

The experts confirm that the rights and duties of both UI and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all stakeholders. In addition, the students can download all relevant course materials through the EMAS.

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

Criterion 4.1

UI has updated the module handbooks for all three graduate programmes and documented the date of the last amendment. The module handbooks now include information on each course that is part of the curriculum.

Criterion 4.2

UI has updated the Diploma Supplement to include student cohort statistics.

The experts consider criterion 4 to be **fulfilled**.

5. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

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

Preliminary assessment and analysis of the experts:

The experts discussed the quality management system at UI with the programme coordinators. The quality management system of UI involves all stakeholders through the Board of Trustees (MWA), which contains the Minister, the Rector, seven lecturers, six public representatives, one administrative staff member and one student. The experts learn that there are two levels of quality assurance in place. The first level describes the external quality assurance, which consists of an external review of the study programmes by the Higher Education National Accreditation Body (BAN-PT). All programs received an "A", which translates to "Unggul (Excellent)" in the new BAN-PT rating. The second level is formed by an internal quality assurance system, which is divided into three stages. On the university level, the Board of Academy Quality Assurance (BPMA) has developed the Internal Quality Assurance System (SPMI), which is carried out by the Academic Quality Assurance Unit (UPMA) on the faculty level and by the Academic Quality Assurance Team (TPMA) on the department level.

Since UI is striving to become an internationally acknowledged university, the integration of students' feedback and the necessity to ensure and improve the employability of the graduates are of major importance to the coordinators. Internal evaluation of the quality of the degree programmes is mainly provided through student, alumni and employer surveys. The students give their feedback on the courses by filling in a questionnaire online. For this purpose, the university has developed their own tool called Lecturer Evaluation by Student (EDOM). Course evaluations are conducted at the end of each semester, and it is mandatory for every student to complete the course evaluation in order to access their final grade by the end of the semester. Further, tracer studies are carried out by gathering statistics about graduates and alumni. The discussion with the students revealed that those in charge are always eager and open for feedback aside from the official evaluations, and that students have the impression that their comments are taken into consideration with regard to the further improvement of the programmes. This becomes apparent in the constant curricular revision process that is performed under participation of students and industry partners. The industry representatives confirm in the discussion that the university is eager to receive feedback about new developments and trends and the employability of their graduates.

The experts appreciate that UI stays in contact with its alumni and has a close relationship with its partners from the industry and public institutions. However, no academic advisory board exists. As the experts consider the input of the employers to be very important for the further improvement of the degree programmes, they appreciate the existing culture of quality assurance with the involvement of employer in the quality assurance process. However, they recommend the establishment of an academic advisory board at the faculty level to provide a formal framework that helps institutionalize stakeholder involvement in curriculum development. The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university (e.g. companies, high schools, and governmental institutions). Including students, professionals, and employers in the different boards will also help further developing the degree programmes.

Concerning the internal feedback loops, the results of the course evaluations are centrally assessed and analysed by the corresponding TPMA. The TPMA would then be responsible to initiate any measures if problems or needs for improvement have been detected. A summary of the results is made accessible to the students. In case the satisfaction of the students with staff members is lower than expected, the matter will be discussed in the annual semester meeting of the department. The Head of the Study Program will contact the respective teacher, discuss the issue and propose solutions. Thus, the experts agree that the quality management circles at UI are well-established and work under participation of all stakeholders.

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

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

UI does not comment on criterion 5.

The experts consider criterion 5 to be **fulfilled**.

D Additional Documents

No additional documents needed.

E Statement of the Institution (29.05.2023)

The institution provided a detailed statement as well as the following additional documents:

- Module Handbook MPPhy
- Module Handbook MPMat
- Module Handbook MPBio
- Diploma Supplement Biology
- Diploma Supplement Materials Science
- Diploma Supplement Physics

1. The Degree Programme: Concept, content & implementation

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

Peer Review Preliminary Report:

In summary, the experts are convinced that the intended qualification profiles of the four undergraduate programmes under review allow students to take up an occupation which corresponds to their qualification.

UI response:

Perhaps the reviewers mean “... of the three graduate programmes under review ...” instead?

Criterion 1.2 Name of the degree programmes

No comment

Criterion 1.3 Curriculum

Peer Review Preliminary Report:

The experts recommend to enable students from all programmes to go abroad by defining a mobility window and a mobility programme at programme level for each of these programmes. Therefore, they recommend that UI strengthens their internationalisation effort and make the stays abroad, also outside of South-East-Asia, more attractive to students.

UI response:

The policy from UI regarding to the student mobility has already been issued. There is Credit Transfer (CT) recognition for students who take courses abroad (maximum 50% out of Programme curricula). Student mobility programmes for undergraduate and Ph.D. students have been implemented, namely ISMA and Sandwich-Like. For master students, UI opens research grant programs, namely PUTI and Graduate Research Funding. Through this program, students can attend international conferences, so that they can interact with the international community, improve English communication skill, and increase their self-confidence. Student also had opportunity to do their research abroad at the partner's universities for short period (See Table 1.3.1).

Table 1.3.1 Student Short Term International Mobility in 2017 - 2022

No	Name	Activity	Programme	Date
MPPhy				
1	Akbar Azzi, Sayid Mubarok	2nd AMDI conference, Penang	PITTA UI Grant	March 1-3, 2019
2	Iqbal Auliarachman	Osaka University	Sakura School 2019	November 20-29, 2019
3	Sonak Tarigan	ICTP Workshop on Uncertainty Measurement Dosimetry in SSDL and Hospital	ICTP Grant	November 2019
4	Mujirin, Samson Clymton	APCTP Workshop, South Korea	PUTI UI Grant	July 1-10, 2019
5	Luthfy Dzikrillah, Ahmad Syafii, Muhammad Mahdi Ramadhan	IEEE Workshop on Real Time Measurement of particle physics, University of Malaya, Malaysia	PUTI UI Grant	November 9 –15, 2019
6	Muhammad Mahdi Ramadhan	IEEE Real Time Conference	UI Research Grant	April 2020
7	Intan Munimah	AOCMP Conference	CMPB UI	2021
8	Dindin Tardi	SEACOMP Conference, Malaysia	UI Research Grant	2021
MPMat				
9	Dicky Rezky Munazat	Thesis Research Experiments at Institute for Materials Research Tohoku University, Japan	PUTI UI Grant	2019

10	Dhawud Shabilur Razaq	Thesis Research Experiments at Tokyo Institute of Technology, Japan	PUTI UI Grant	2019
11	Utami Widyaiswari	International Workshop on Organic Molecule Systems", Penang, Malaysia, 2017 (The 1st RIKEN Symposium)	PUTI UI Grant	2017
12	Suci Winarsih			
13	Maykel TE Manawan			
14	Dicky Rezky Munazat			
15	Dawud Sabirur Razaq			
MPBio				
16	Mazytha Kinanti Rachmania, Yuriza Eshananda	Thesis Research Experiments at Graduate School of Agricultural Science, Tohoku University, Japan	PMDSU Grant and TU Research-Oriented Incoming Student (ROIS) Scholarship, JASSO	Jan 10-Feb 28, 2019

We appreciate peers' recommendation to open many more programmes for master student mobility abroad. In January 2023, the FMNS UI initiated a research collaboration with the Faculty of Science, Universiti Malaya. This initiation started with a joint hybrid mini-symposium between two faculties to find a common interest between researchers of UI and UM (Please see the booklet in [Appendix 1.3.1](#) and flyer in [Appendix 1.3.2](#)). In this symposium, each head of the department presents their local research strength, followed by two lecturer talks. Through this symposium, five joint proposals between FMIPA UI and FoS was funded by UI with PUTI Research Grant Scheme 2023. There is one proposal funded for the Biology department. The research PI is Dr. Ratna Yuniati from UI and Yong Kien-Thai, Ph.D. from UM. In the next 6-8 of June 2023, further action on possible collaboration will be conducted through the visit of the FMIPA UI delegation to FoS UM.

Criterion 1.4 Admission requirements

No comment

Criterion 1.5 Workload and credits

No comment

Criterion 1.6 Didactics and Teaching Methodology

No comment

2. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

No comment

3. Resources

Criterion 3.1 Staff and Staff Development

No comment

Criterion 3.2 Student Support and Student Services

No comment

Criterion 3.3 Funds and equipment

Peer Review Preliminary Report:

To ensure that waiting times do not become too long, the experts recommend that these waiting lists be monitored regularly.

UI Response:

Due to a shortage of some expensive, large laboratory facilities, lines might occasionally form. To ensure that the process of using laboratory equipment is well-organized, the Department's laboratory has a registration system. The laboratory technician checks the line every day. Additionally, collaborating with other institutions can help to reduce the line and allow research to proceed as planned.

Peer Review Preliminary Report:

The experts, therefore, recommend that more self-study spaces be created in the faculty itself.

UI Response:

We are aware that the faculty's self-study area still needs improvement. However, although it is limited, a discussion space has been made available for students in the Department. The discussion room for students in each Department is shown below:

Department of Physics:

The 100 m² student room in the Department of Physics is dedicated to the graduate student and may accommodate up to 20 students at once. The following figures display images of the Department of Physics' student room:



Department of Biology:

The Department of Biology has provided a "Bio-lounge" in response to ASIIN's suggestions, and it is officially inaugurated in May 2023. This space is provided to facilitate the students to do self-study and discussion. The following figures depict the "Bio-lounge":



Furthermore, most graduate students are engaged in their research labs. There is a student space in each respective lab. This space facilitates the discussion between student and supervisor and for the student to self-study. The representative figures of the student space in the lab/lecturer area are depicted below:

Department of Physics:



Department of Biology:



UI, FMIPA, and the Department are committed to supporting student activities. Therefore, although it takes time, the procurement of facilities including self-study rooms will continue to be developed.

4. Transparency and documentation

Criterion 4.1 Module descriptions
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Peer Review Preliminary Report:

After the assessment of the provided evidence, the experts conclude that the module descriptions are very detailed but some module descriptions are missing (Physics: e.g. analytical mechanics, quantum mechanics, condensed matter and statistical mechanics). The experts ask UI to provide a complete version of the module handbooks.

As the experts were able to learn during the audit, course content is regularly updated and emerging hot topics are discussed in the relevant courses. They would appreciate it if UI would regularly add this new content to the module descriptions and document the date of the last change.

UI Response:

The complete version of the module handbooks ([Appendix 4.1.1](#), [4.1.2](#), and [4.1.3](#)) are accessible for all lecturers, students, or other parties and already available in the MPs website as follows:

MPPhy: <https://physics.ui.ac.id/wp-content/uploads/2023/05/Handbook-S2-Ilmu-Fisika.pdf>

MPMat: <https://physics.ui.ac.id/wp-content/uploads/2023/05/Module-Handbook-MPMat.pdf>

MPBio: <https://biologi.ui.ac.id/en/master-program-s2/>

The course content concerning the emerging hot topics will be regularly updated to the module descriptions and informed the last modified date in the module handbook cover.

Criterion 4.2 Diploma and Diploma Supplement

Peer Review Preliminary Report:

The diploma supplement currently does not inform about the distribution of grades within the student cohort, which is necessary so that potential employers can properly evaluate a student's grade. Therefore, UI has to add this statistical data.

UI Response:

The statistical GPA distribution of graduates within the student cohort is already added in the revised diploma supplement. See the example of diploma supplement for the representative students from [MPPhy](#), [MPMat](#), and [MPBio](#). It is also available in the MPs website as follows:

MPPhy: https://physics.ui.ac.id/wp-content/uploads/2023/05/Sample-of-Diploma-Supplement-FMIPA-UI_Materials-Science-Master-Program.pdf

MPMat: https://physics.ui.ac.id/wp-content/uploads/2023/05/Sample-of-Diploma-Supplement-FMIPA-UI_Materials-Science-Master-Program.pdf

MPBio: <https://biologi.ui.ac.id/en/master-program-s2/>

Criterion 4.3 Relevant rules

No comment

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

No comment

F Summary: Peer recommendations (xx.xx.2023)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Physics	Without requirements	30.09.2028	--	--
Ma Materials Sciences	Without requirements	30.09.2028	--	--
Ma Biology	Without requirements	30.09.2028	--	--

Recommendations

- E 1. (ASIIN 1.3) It is recommended to further strengthen the university's internationalization efforts, concerning student exchange as well as research collaboration.
- E 2. (ASIIN 1.3) It is recommended to provide students with more opportunities to improve their soft skills with respect to team leading, presentation, and communication.
- E 3. (ASIIN 5) It is recommended to implement a formalized system that allows a regular feedback from the industrial and governmental partners on the curriculum of the study programme, e.g. in form of a multi stakeholder advisory board (i.e. representatives from industry (Oil & Gas) , Land Users NGOs, governmental institutions).

G Comment of the Technical Committee (12.06.2023)

Technical Committee 05– Materials Science, Physical Technologies

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers.

The Technical Committee 05 – Materials Science, Physical Technologies recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Physics	Without requirements	30.09.2028	--	--
Ma Materials Sciences	Without requirements	30.09.2028	--	--
Ma Biology	Without requirements	30.09.2028	--	--

Recommendations

- E 1. (ASIIN 1.3) It is recommended to further strengthen the university's internationalization efforts, concerning student exchange as well as research collaboration.
- E 2. (ASIIN 1.3) It is recommended to provide students with more opportunities to improve their soft skills with respect to team leading, presentation, and communication.
- E 3. (ASIIN 5) It is recommended to implement a formalized system that allows a regular feedback from the industrial and governmental partners on the curriculum of the study programme, e.g. in form of a multi stakeholder advisory board (i.e. representatives from industry (Oil & Gas) , Land Users NGOs, governmental institutions).

Technical Committee 10– Life Sciences

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Physics	Without requirements	30.09.2028	--	--
Ma Materials Sciences	Without requirements	30.09.2028	--	--
Ma Biology	Without requirements	30.09.2028	--	--

Recommendations

- E 1.(ASIIN 1.3) It is recommended to further strengthen the university's internationalization efforts, concerning student exchange as well as research collaboration.
- E 2. (ASIIN 1.3) It is recommended to provide students with more opportunities to improve their soft skills with respect to team leading, presentation, and communication.
- E 3. (ASIIN 5) It is recommended to implement a formalized system that allows a regular feedback from the industrial and governmental partners on the curriculum of the study programme, e.g. in form of a multi stakeholder advisory board (i.e. representatives from industry (Oil & Gas) , Land Users NGOs, governmental institutions).

Technical Committee 13– Physics

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Physics	Without requirements	30.09.2028	--	--
Ma Materials Sciences	Without requirements	30.09.2028	--	--
Ma Biology	Without requirements	30.09.2028	--	--

Recommendations

- E 1. (ASIIN 1.3) It is recommended to further strengthen the university's internationalization efforts, concerning student exchange as well as research collaboration.
- E 2. (ASIIN 1.3) It is recommended to provide students with more opportunities to improve their soft skills with respect to team leading, presentation, and communication.
- E 3. (ASIIN 5) It is recommended to implement a formalized system that allows a regular feedback from the industrial and governmental partners on the curriculum of the study programme, e.g. in form of a multi stakeholder advisory board (i.e. representatives from industry (Oil & Gas) , Land Users NGOs, governmental institutions).

H Decision of the Accreditation Commission (23.06.2023)

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

The accreditation commission discusses the procedures and follows the assessment of the auditors and the technical committee.

The Accreditation Commission for Degree Programmes decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ma Physics	Without requirements	30.09.2028	--	--
Ma Materials Sciences	Without requirements	30.09.2028	--	--
Ma Biology	Without requirements	30.09.2028	--	--

Recommendations

- E 1. (ASIIN 1.3) It is recommended to further strengthen the university's internationalization efforts, concerning student exchange as well as research collaboration.
- E 2. (ASIIN 1.3) It is recommended to provide students with more opportunities to improve their soft skills with respect to team leading, presentation, and communication.
- E 3. (ASIIN 5) It is recommended to implement a formalized system that allows a regular feedback from the industrial and governmental partners on the curriculum of the study programme, e.g. in form of a multi stakeholder advisory board (i.e. representatives from industry (Oil & Gas) , Land Users NGOs, governmental institutions).

Appendix: Programme Learning Outcomes and Curricula

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

1. Able to conduct scientific research in one of the fields of Physics and Applied Physics (Competence - C).
2. Able to apply Physics and Applied Physics concept in solving a problem (Knowledge -K).
3. Able to analyse issues comprehensively related to Physics and Applied Physics (C).
4. Able to formulate problems using Physics and Applied Physics method to solving the cases in their work field (K).
5. Able to produce valuable products related to Physics and Applied Physics for contributing to the community (C).
6. Able to construct systematic reports and research manuscripts to be published in international or national publisher (Skill – S).
7. Able to present the results of work and research systematically in an international or national academic forum (S).

The following **curricula** are presented:

Table 5. The Curriculum of MPPh by research

1st Semester		
Code	Course Name	SKS
SCPH801001	Literature Review 1	4
SCPH801002	Literature Review 2	4
SCPH801003	Research Proposal	4
Total		12

2nd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications 1	2
SCPH801005	Presentation of Progress Results	6
Total		8

3rd semester		
Kode	Course Name	SKS
SCPH801006	Scientific Publications 2	8
Total		8

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

Table 6. The Curriculum of MPPh by course with Nuclear Physics, Particles, and Theoretical Astrophysics Specialization

1st Semester		
Kode	Course Name	SKS
SCPH802811	Mathematical Method in Physics	3
SCPH802802	Computational Method in Physics	3
SCPH802101	Statistical Mechanics	3
SCPH802201	Quantum Mechanics	3
SCPH802202	Analytical Dynamics	3

1st Semester		
Kode	Course Name	SKS
Total		15

2nd semester		
Kode	Course Name	SKS
SCPH802203	Angular Momentum Theory	2
SCPH802204	Relativistic Quantum Field Theory	4
SCPH802205	General Relativity and Introduction to Astrophysics	3
SCPH802805	Seminar	2
Total		11

3rd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications	2
Total		2

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

Table 7. The Curriculum of MPPh by course with Condensed Matter Physics Specialization

1st Semester		
Kode	Course Name	SKS
SCPH802811	Mathematical Method in Physics	3
SCPH802802	Computational Method in Physics	3
SCPH802101	Statistical Mechanics	3
SCPH802201	Quantum Mechanics	3
Total		12

2nd semester		
Kode	Course Name	SKS
SCPH802112	Symmetry, Energy Bands and Phonons	3
SCPH802113	Electromagnetism in Solids	3
SCPH802103	Advanced Spectroscopy	3
SCPH802104	Special Topics	3
SCPH802805	Seminar	2
Total		11

3rd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications	2
Total		2

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

Table 8. The Curriculum of MPPh by course with Instrumentation Physics Specialization

1st Semester		
Kode	Course Name	SKS
SCPH802811	Mathematical Method in Physics	3
SCPH802802	Computational Method in Physics	3
SCPH802311	Measurement Method and Sensor Technology	2
SCPH802316	Signal Processing	2
SCPH802317	Data Analysis	2
Total		12

2nd semester		
Kode	Course Name	SKS
SCPH802312	Embedded Instrumentation	2
SCPH802313	Instrumentation System	2
SCPH802314	Virtual Instrumentation	2
SCPH802315	Intelligent Instrumentation	2
SCPH802316	Image processing	2
SCPH802319	Process Control	2
SCPH802805	Seminar	2
Total		14

3rd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications	2
Total		2

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

Table 9. The Curriculum of MPPh by course with Reservoir Geophysics Specialization

1st Semester		
Kode	Course Name	SKS
SCPH802811	Mathematical Method in Physics	3
SCPH802802	Computational Method in Physics	3
SCPH802511	Structural Geology and Seismic Interpretation	2
SCPH802504	Oil Geology	2
SCPH802506	Sedimentology	2
SCPH802508	Seismic Data Processing and Interpretation	2
Total		14

2nd semester		
Kode	Course Name	SKS
SCPH802502	Well Log Analysis and Formation Evaluation	2
SCPH802503	Reservoir Engineering	2
SCPH802505	Seismic Stratigraphy and Sequence	2
SCPH802507	Geostatistics	2
SCPH802509	Geopotential Method	2
SCPH802805	Seminar	2
Total		12

3rd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications	2
Total		2

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

Table 10. The Curriculum of MPPh by course with Geothermal Exploration Specialization

1st Semester		
Kode	Course Name	SKS
SCPH802811	Mathematical Method in Physics	3
SCPH802802	Computational Method in Physics	3
SCPH802511	Structural Geology and Seismic Interpretation	2
SCPH802504	Oil Geology	2

SCPH802506	Sedimentology	2
SCPH802508	Seismic Data Processing and Interpretation	2
Total		14

2nd semester		
Kode	Course Name	SKS
SCPH802502	Well Log Analysis and Formation Evaluation	2
SCPH802503	Reservoir Engineering	2
SCPH802505	Seismic Stratigraphy and Sequence	2
SCPH802507	Geostatistics	2
SCPH802509	Geopotential Method	2
SCPH802805	Seminar	2
Total		12

3rd semester		
Kode	Course Name	SKS
SCPH801004	Scientific Publications	2
Total		2

4th semester		
Kode	Course Name	SKS
SCPH801007	Thesis	8
Total		8

According to the self-assessment report the following **learning outcomes (intended qualifications profile)** shall be achieved by the Master's degree programme Materials Science:

- Able to have integrated understanding of the structure, properties, processing, and material system performance, and are able to give critical analyse of the latest developments in materials science and technology.
- Able to design and carry out experimental research method and mathematical modelling with due regard to ethics responsibility and are able to analyse data critically and systematically as well draw a conclusion.
- Able to identify and analyse problems in the field of materials science as well as being able to formulate solutions that are scientifically responsible, with due regard to ethics, environmental and socio-economic.
- Able to create and design materials, processing methods and new materials analysis techniques and material product innovations with paying attention to humanities values that are beneficial for development materials science, industry, and society in general.
- Able to apply materials science concepts in solving complex applications of material industry through the multidisciplinary approach with due regard to safety, social and ethics.
- Able to make written reports and communicate orally effectively in scientific, industrial, and public groups.
- Able to function as an effective team member together to create a collaborative and inclusive environment in achieving common goals.
- Able to increase learning capacity independently.
- Able to document, store, secure and rediscover research data to ensure validity and prevent plagiarism.

The following **curricula** are presented:

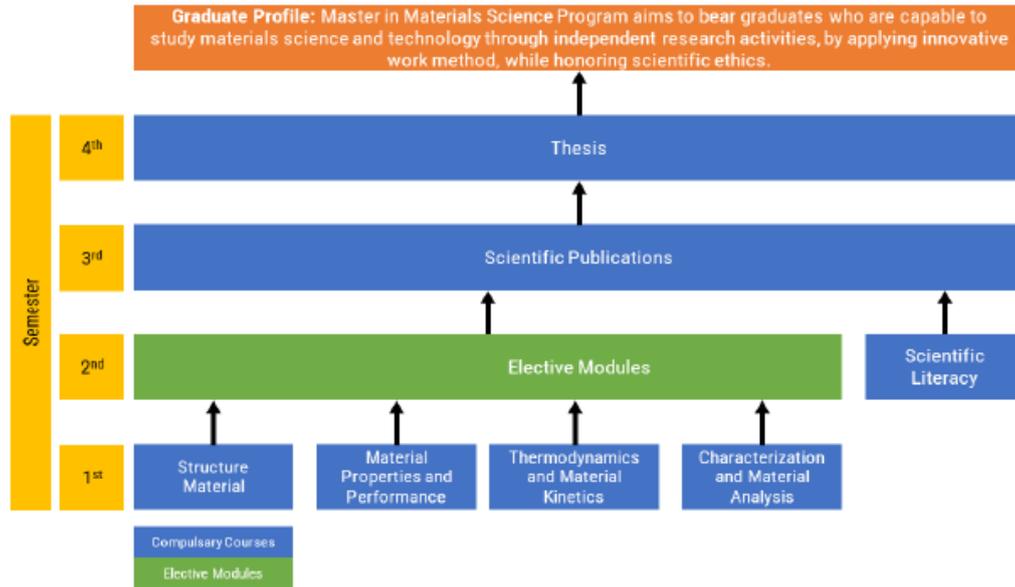


Figure 1.3.3 The MPMat curriculum structure for the by-course programme

Table 1.3.6 Internal Elective Modules in MPMat

No	Code	Modules	SKS	ECTS	Semester
1	SCMS802204	Advanced Laboratory Work	3	5.43	2
2	SCMS802205	Magnetic Materials Physics	3	5.43	
3	SCMS802206	Permanent Magnets: Process and Characterization	3	5.43	
4	SCMS802207	Applied Ceramics	2	3.62	
5	SCMS802208	Polymeric Materials	2	3.62	
6	SCMS802209	Biomedical Composites	2	3.62	
7	SCMS802210	Properties & Application of Nanomaterials	2	3.62	
8	SCMS802211	Advanced Composite Materials	2	3.62	
9	SCMS802212	Corrosion and Material Protection	2	3.62	
10	SCMS802213	High Temperature Metal Oxidation	2	3.62	
11	SCMS802214	Functional Materials	2	3.62	
12	SCMS802215	Independent Project	2	3.62	
13	SCMS802216	Synthesis and Characterization of Nanomaterials	2	3.62	
14	SCMS802217	Numerical Methods for Materials	2	3.62	
15	SCMS802218	Engineering Economics	2	3.62	

By Research Modules

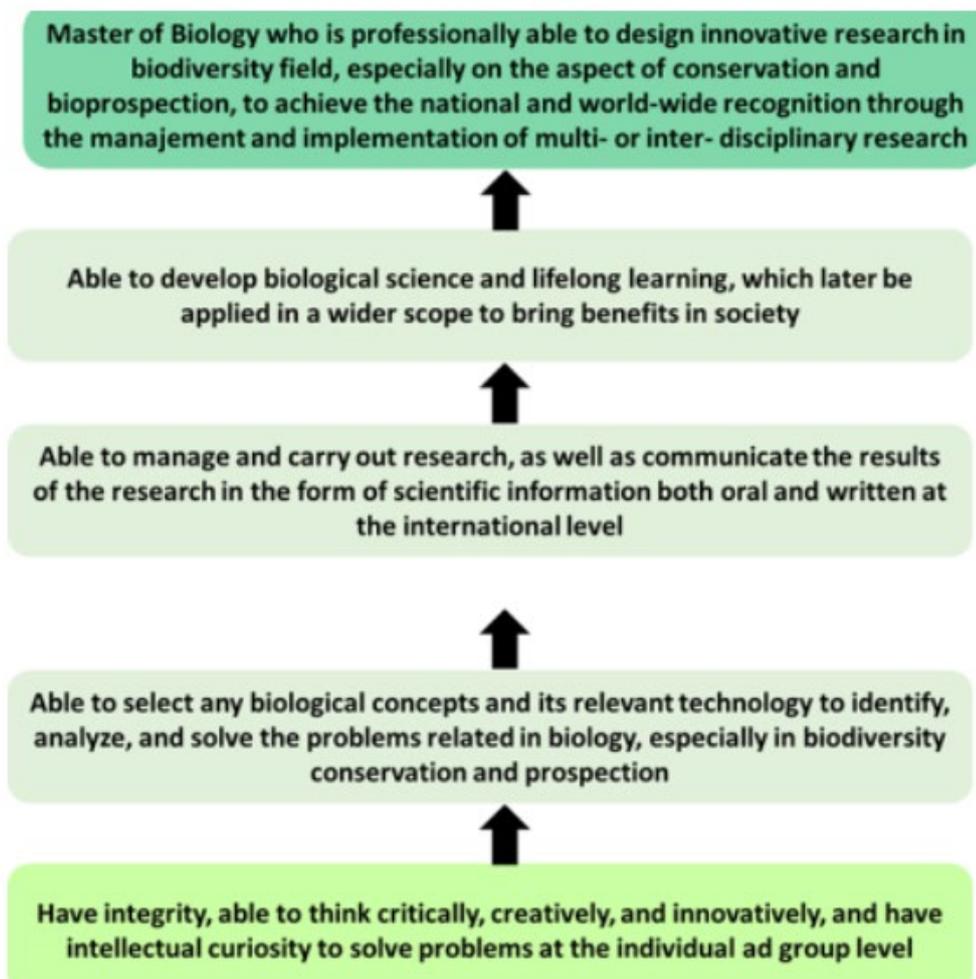
1st Semester		
Code	Class	SKS
SCPH801001	Literature Review 1	4
SCPH801002	Literature Review 2	4
SCPH801003	Research Proposal	4
Study Program Compulsory		12
Elective Courses		0
Total of 1st Semester		12

2nd Semester		
Code	Mata Kuliah	SKS
SCPH801004	Scientific Publications 1	2
SCPH801005	Presentation of Progress Results	6
Study Program Compulsory		8
Elective Courses		0
Total of 2nd Semester		8

3rd Semester		
Code	Mata Kuliah	SKS
SCPH801006	Scientific Publications 2	8
Study Program Compulsory		8
Elective Courses		0
Total of 3rd Semester		8

4th Semester		
Code	Mata Kuliah	SKS
SCPH801007	Thesis	8
Study Program Compulsory		8
Elective Courses		0
Total of 4th Semester		8

According to the self assessment report the following **learning outcomes (intended qualifications profile)** shall be achieved by the Master's degree programme Biology:



The following **curriculum** is presented:

Table 1.3.7 Learning Outcomes-Modules Matrix of MPBio 2020 Curriculum

Year (Term)	Code	Modules	SKS	ECTS	PLO				
					1	2	3	4	
					K	S	C	C	
Compulsory Modules									
1(1)	SCBI800010	Biodiversity of Indonesia	3	5.43	H				
	SCBI800011	Biosystematics	3	5.43	H				
	SCBI800012	Biogeography of Indonesia	3	5.43	H				
	SCBI800013	Scientific Writing	3	5.43		H			
	SCBI800014	Statistics	3	5.43		H			
	SCBI800001	Literature Review I*	4	7.24	H				
	SCBI800002	Literature Review II*	4	7.24		H			
	SCBI800003	Research Proposal*	4	7.24	H	M		M	
Elective Modules									
1(2)	Elective Modules (EC) within Research Group (RG)**		11	19.91					
	EC within RG MSP								
	SCBI800017	Conservation Management of Microorganism	3	5.43	H	M			
	SCBI800018	Biodiversity of Microorganism	3	5.43	H	M			
	SCBI800019	Physiology of Microorganism	2	3.62	H	M			
	SCBI800020	Ecology of Microorganism	2	3.62	H	M			
	SCBI800021	Engineering of Microorganism	2	3.62	H	M			
	SCBI800022	Biochemistry of Microorganism	2	3.62	H	M			
	SCBI800023	Algal Biotechnology	2	3.62	H		M		
	EM within RG CEEB								
	SCBI800024	Population Ecology	3	5.43	H	M			
	SCBI800025	Herbivorous Plant-Insect Interaction	2	3.62	H	M			
	SCBI800026	Aquatic Toxicology	2	3.62	H	M			
	SCBI800027	Coastal Management	3	5.43	H		M		
	SCBI800028	Marine Ecology	3	5.43	H		M		
	EM within RG CEMBIOS								
	SCBI800029	Animal Cell Culture	3	5.43	H		M		
	SCBI800030	Genomics and Proteomics	3	5.43	H	M			
	SCBI800031	Nutrigenomics	2	3.62	H	M			
	SCBI800032	Cytogenetics	3	5.43	H	M			
SCBI800033	Plant Development	2	3.62	H	M				

0 Appendix: Programme Learning Outcomes and Curricula

	SCBI800034	Histochemistry	2	3.62	H		M	
EM within RG WILD								
	SCBI800035	Ethnobiology and Conservation	3	5.43	H	M		
	SCBI800036	Landscape and Restoration Ecology	3	5.43	H	M		
	SCBI800037	Conservation Biology Method	3	5.43	H		M	
	SCBI800038	Wildlife Forensics	3	5.43	H	M		
	SCBI800039	Wildlife Reproduction	3	5.43	H	M		
EC within RG MECE								
	SCBI800040	Metabolomics	2	3.62	H	M		
	SCBI800041	Chemical Ecology	2	3.62	H	M		
	SCBI800042	Plant Ecophysiology	2	3.62	H	M		
	SCBI800043	Natural Product	2	3.62	H	M		
	SCBI800044	Nanobiology	2	3.62	H	M		M
	SCBI800045	Plant Tissue Culture	3	5.43	H	M		M
	SCBI800046	Bioremediation	2	3.62	H		M	
Compulsory Modules								
1(2)	SCBI800008	Scientific Publication 1*	2	3.62	H	M		
	SCBI800006	Presentation of Progress Results*	6	10.86	H			
2(1)	SCBI800004	Scientific Publication 1	2	3.62	H			
	SCBI800005	Scientific Publication 2*	8	14.48	H	H		
2(2)	SCBI800007	Thesis	8	14.48	H	H	H	H

Remarks:

PLO = Program Learning Outcomes; SKS = Credit Unit; ETC = European Credit Transfer; H = high, M = medium

K = Knowledge; S = Skill; C = Competence

* Course taken by MPBio *By Research Track* Student

** Minimum requirements CU for Elective Course is 11

MSP = Microbial Systematics and Prospecting

CEEB = Community Ecology and Environmental Biology

CEMBIOS = Cellular and Molecular Mechanism in Biological System

WILD = Wildlife Biology and Sustainable Landscape

MECE = Metabolomic and Chemical Ecology