



ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes

Marine Engineering

Mining Engineering

Industrial Engineering

Provided by

University Hasanuddin

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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
Program Studi Sarjana Teknik Sistem Perkapalan	Bachelor Marine Engineering	ASIIN		TC 01
Program Studi Sarjana Teknik Pertambangan	Bachelor Mining Engineering	ASIIN		TC 11
Program Studi Sarjana Teknik Industri	Bachelor Industrial Engineering	ASIIN		TC 06
<p>Date of the contract: 2021-01-12</p> <p>Submission of the final version of the self-assessment report: 2021-11-21</p> <p>Date of the onsite visit: 13-16 December 2021</p> <p>at: online</p>				
<p>Peer panel:</p> <p>Prof. Dr. Horst Brezinski, Technical University Freiberg;</p> <p>Prof. Dr. Detlev Doherr, University of Applied Sciences Offenburg;</p> <p>Effi Drews (Student), University of Bonn;</p> <p>Prof. Dr. Andreas Griesinger, Dual University of Applied Science Baden-Wuerttemberg;</p> <p>Raphael Kiesel M.Sc., Fraunhofer-Institute for Production Technology</p> <p>Prof. Dr. Hartmut Ulrich, University of Applied Science Ruhr West</p>				
<p>Representative of the ASIIN headquarter: Dr. Michael Meyer</p>				

¹ASIIN Seal for degree programmes;

² TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 03 - Civil Engineering, Geodesy and Architecture; TC 04 - Informatics/Computer Science; TC 05 - Physical Technologies, Materials and Processes; TC 06 - Industrial Engineering; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Nutritional Sciences and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics.

Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria, as of 10.12.2015 Subject-Specific Criteria of Technical Committee 01 – Mechanical Engineering/Process Engineering as of 09.12.2011 Subject-Specific Criteria of Technical Committee 06 –Engineering and Management, Economics as of 20.09.2019 Subject-Specific Criteria of Technical Committee 11 –Geosciences as of 09.12.2011	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor Programme of Marine Engineering	Sarjana Teknik (S.T.) / Bachelor of Engineering (B.Eng.)	Ship Machinery; Electrical and Controlling; Ship Propulsion System; Floating Structure System	Level 6	Full-time	No	4 years	261.12 ECTS/144 SKS	Annually; 2003
Bachelor Programme of Mining Engineering	Sarjana Teknik (S.T.) / Bachelor of Engineering (B.Eng.)	Mine Design; Mineral Exploration; Mine Valuation; Geomechanics; Mineral Analysis and Processing; Mine Environment	Level 6	Full-time	No	4 years	261.12 ECTS/144 SKS	Annually; 2004
Bachelor Programme of Industrial Engineering	Sarjana Teknik (S.T.) / Bachelor of Engineering (B.Eng.)	Statistics and Quality Management; Ergonomics; Manufacturing System; Optimization; System Engineering and Industrial Management	Level 6	Full-time	No	4 years	269.76 ECTS/147 SKS	Annually; 2002

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

Learning Outcomes of the Programme provides an opportunity for graduates to be able to:

- Having capability in theoretical concept of engineering science for systems in a ship and other marine vehicles and floating structures.
- Having capability in designing the concepts which fulfil the principles of an effective, efficient, ergonomic as well as environmentally friendly marine engineering technology.

³ EQF = The European Qualifications Framework for lifelong learning

B Characteristics of the Degree Programmes

- Having capability in the concept of fabrication and installation of marine engineering.
- Having capability in engineering principles of repair and maintenance of product and technology.
- Be able to comprehend and implement the current standard and regulation in design, fabrication, installation, supervision as well as operation in marine engineering.
- Be able to apply the theoretical concept of engineering science in marine Engineering, marine vehicles as well as in other floating structures.
- Be able to design systems in a ship, marine vehicles, and other floating structures.
- Be able to carry out inspection and supervision in marine engineering.

The graduate profiles of Marine Engineering Programme are:

- Academician and researcher
- Designer and engineer for production, installation, and maintenance & repair
- Surveyor or maritime inspector
- Project consultant
- Decision and policymaker

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

Learning Outcomes of the Programme provides an opportunity for graduates:

- To internalize academic values, norms, and ethics, also to effectively communicate in community life.

Knowledge:

- To understand basic principles of geology, mathematics, physics, and chemistry, regarding the area of engineering.
- To acquire concepts of technology of mining.

Skills:

- To apply logic and innovative thinking in developing knowledge the technology and problem-solving within the area of expertise.

Competence:

B Characteristics of the Degree Programmes

- To be able to apply principles of knowledge and technology in developing the technical design of mining.
- To be able to apply basic principles of geology, and engineering of physics, chemistry, mathematics, in analyzing and evaluating mineral and coal resources.
- To be able to apply principles of economics, management and valuation techniques in planning and managing mineral and coal resources.
- To be able to integrate principles of physics and mathematics in reviewing mining geomechanics.
- To be able to study and take advantage of knowledge and technology in the engineering of mineral and coal processing.
- To be able to integrate the concept of ecotechnology in developing the technical design of minerals and coal.

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

Learning Outcomes of the Programme provides an opportunity for graduates:

- Graduates are able to apply mathematics, basic science and social science to solve industrial engineering problems.
- Graduates are able to apply knowledge, skills in industrial engineering safely, humanely, and sustainably.
- Graduates have high professional ethics based on the spirit of the maritime continent, managerial skills, able to communicate effectively, work in teams, and having network both nationally and internationally.
- Graduates become independent learners in responding to current issues both in the field of industrial engineering and the social environment.

C Peer Report for the ASIIN Seal⁴

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Academic Handbook
- Self-Assessment Report
- Discussions with programme coordinators and representatives of the labour market

Preliminary assessment and analysis of the peers:

The study aims and intended learning outcomes of all programmes defined by the university correspond to learning outcomes relevant to level 6 of the European Qualifications Framework. Learning outcomes are accessible to students, staff members, and all interested stakeholders on the faculty web site. These objectives were discussed in staff meetings with the faculty team and students. The learning outcomes have been formulated additional referring to vision and mission of Hasanuddin University, the Indonesian Qualification Framework (IQF), National Standards for Higher Education and discussion results with internal and external stakeholders.

The peers referred to the Subject-Specific Criteria (SSC) of the Technical Committees for Mechanical Engineering and Process Engineering, Industrial Engineering and Geosciences as a basis for judging whether the intended learning outcomes of the three Bachelor programmes as defined correspond to the exemplary constituted learning outcomes of the Technical Committees.

The peers comprehend that in the marine and mining programmes students should gain extensive technical knowledge as to engineering, mathematics and natural sciences with a specification in ship building and machinery respectively drilling and underground construction. They should be able to identify, formulate and solve engineering-based problems

⁴ This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

by applying established scientific methods. Additionally, they should be able to analyse and assess products, processes and methods used in their discipline in order to choose and apply suitable methods of analysing, modelling, simulating and optimising. The peers see in both programmes as well that graduates should have the ability to conceive designs, EDP programmes or processes and to develop them according to specified requirements.

In the bachelor degree programme of industrial engineering students should gain extensive knowledge in general fields of engineering and economics combined with mathematics and social science. They should be able to solve problems at the interface between the fields of engineering and economic aspects. Therefore, they should be able to identify, formulate and solve engineering and economic based problems by applying established scientific methods out of not only the fields of economic and engineering but also out of social sciences.

Finally, the peers comprehend that in the learning outcomes for all programmes appropriate soft skills regarding to communication skills and the ability to work in a team are mentioned.

These learning outcomes fits perfectly with the subject specific criteria for mechanical engineering and industrial engineering while the basic knowledge of geology fits with the basic requirements of the subject specific criteria for geosciences.

Out of the alumni surveys the peers learned graduates find jobs in governmental institutions and in the private sector in an appropriate time. Therefore, the peers assert that graduates have good chances on the labor market with the described profile.

Criterion 1.2 Name of the degree programme

Evidence:

- Websites of the degree programmes
- Self-Assessment Report

Preliminary assessment and analysis of the peers:

The titles of all programmes are published on the subject specific webpages. The information about the programmes is published in Indonesian and English language. The panel confirmed that the names of all programmes reflect the intended aims and learning outcomes.

Criterion 1.3 Curriculum

Evidence:

- The study regulations define the curriculum and the single modules.
- The module descriptions inform about the aims and content of the single modules.
- Objective-Matrices provided in the Self-Assessment Report, Appendix 5
- Discussions with programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:

From the point of view of the peers all programmes are structured very well. The curricula implement all the defined study aims and learning outcomes. They also appreciate that the fundamental knowledge in mathematics, natural sciences and engineering are taught separately for each programme to allow programme specific examples even in these thematic fields.

The peers also welcome that there are religious modules not only for the Islam religion but for all Indonesian religions as well. Out of the discussion with programme coordinators and students they gain the impression that the religion modules are in accordance with the principles of scientific research. But they mentioned that the submitted module description only deals with Islamic religion. From their point of view, it is necessary that the module description of the religion course explains that there are elective courses for different religions as well.

Out of the discussion with representative of the industry the peers got the impression that graduates of the programmes are very well prepared to the labor market regarding to their field specific competences.

Overall, the peers conclude that the curricula of all programmes implement the intended learning outcomes in a very good manner. From their point of view the curricula are linked to the actual field specific research discussions and to European and international methods.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Study Guide
- Discussions during the audit

Preliminary assessment and analysis of the peers:

Student admission policies and entry requirements follow the policies of Universitas Hasanuddin (Unhas) stipulated in the Rector's Decree Number: 1870 / H4 / P / 2009, Article 16 and also the Ministry Regulation of the Ministry of Research, Technology, and Higher Education (Ministry Decree No. 126 of 2016).

There are five different ways by which students can be admitted to a bachelor's degree programme at Hasanuddin University:

The National Entrance based on Student Academic Performance Records (SNMPTN) is a university admission path followed by 62 National Universities in an integrated system. Prospective students with outstanding academic achievements during the first 5 (five) semesters in senior high school and have consistently demonstrated academic excellence are offered the opportunity to become students in nationally selected national university study programmes

Students who failed the first admission scheme (SNMPTN) can apply to the second entry option called SBMPTN. In this entry option, prospective students can apply one to three study programs at selected national universities. However, only one study program may be accepted by students based on the graduation rate determined by the study program of the selected national university.

The third entry option is a Local University Entrance based on the outstanding performance of prospective students in various aspects, especially national-level achievements of students in the fields of sports, arts or science. To be eligible for this third entry option, all prospective students must first take the SBMPTN entrance examination as a result (SBMPTN test score) will be used together with each national-level achievement obtained for assessment.

The auditors find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

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

The peers appreciate that the university has added module descriptions for all religion modules to the handbooks. Therefore, the corresponding requirement is not necessary any more. They assess the criterion as completely fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Discussions with programme coordinators, teaching staff and students

Preliminary assessment and analysis of the peers:

The structure of the programmes under review is clearly outlined on the subject specific website for each study programme. The programmes consist of modules, which comprise a sum of teaching and learning. The module descriptions are also published on the subject specific website. Based on the analysis of the sequence of modules and the respective module descriptions the peers concluded that the structure of all programmes ensures that the learning outcomes can be reached. The programmes also offers several elective courses, which allows students to define an individual focus. Based on the analysis of the curriculum and the module descriptions the peers confirmed that the objectives of the modules and their respective content help to reach both the qualification level and the overall intended learning outcomes.

In order to support the international mobility of students the faculty has established several student exchange programmes with international universities and offers organizational and financial support for students studying abroad.

Criterion 2.2 Work load and credits

Evidence:

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

Preliminary assessment and analysis of the peers:

Based on the National Standards for Higher Education of Indonesia (SNPT), all programmes use a credit point system called SKS. In comparison to ECTS credit system, wherein 1 ECTS equals 25-30 hours of students' workload per semester, it is determined that 1 CSU is awarded for 170 minutes of student workload per week and the relation between the different kind of learning (contact hours, self-studies) is fixed. With a duration of 16 weeks per semester one SKS correspond to 45,3 hours of student workload. For a bachelor's degree programme with 145 CSU the total time of study is round 6500 h in four years with an average of some 800 hours per semester. For bachelor's degree programmes a possible range from 144 to 150 SKS is defined by governmental regulations.

The peers welcomed the Indonesian system wherein the student's workload per semester depends on their average grades in the former semester. The students' individual study plans are indeed different from each other but have to be approved by their academic advisors.

The peers also positively noted that the module handbook describes consistently in all modules the credit points and the workload distinguishing between contact time and time of self-study

Comparing to the objectives and the content of the courses the workload defined for the single modules in general seems to be realistic for the peers besides for the internships and the final theses. The students confirmed this impression.

For the internship 3 SKS are defined in all programmes independently how long students stay with the companies as the credit point are only awarded for the writing of the report and its presentation. From the point of view of the peers, credit point systems based on student workload should consider all mandatory parts of a study programme. Therefore, they find it necessary to ensure that the workload and the credit points correspond for all mandatory elements of the programmes.

Regarding the final theses, the peers see adequate requirements and topics after reviewing several examples. However, they doubt whether these requirements could be fulfilled by the students within the foreseen workload of only 4-6 SKS. The students confirm to the peers that they need regularly more time to write the final theses and that this would be one of the main reasons to extend the study time. In combination with failed exams it is comprehensible for the peers that students need 5 years in average to finish the programmes. From their point of view, the workload for the final theses also must correspond to the defined credit points. Additionally, the peers recommend analysing more intensively, whether there are more reasons for the regular extension of the study time by students. For example, students named difficulties to find companies for internships with only short

duration and in case the final theses is written within a company most students need more time as the companies are asking for additional work.

Due to the excellent supporting system of the university, the dropout rate is low with 1-2%. Most students who leave university without a grade do this for economic reasons.

Criterion 2.3 Teaching methodology

Evidence:

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

Preliminary assessment and analysis of the peers:

The staff members of Universitas Hasanuddin apply various teaching and learning methods like interactive lecture, small group discussion, demonstration, collaborative learning, discussion, case study, project-based learning, laboratory practice, presentation and software simulation.

The peers appreciate the small projects implemented in different modules in all programmes in order to establish project-based learning. In general, the peers see a wide variety of teaching methods and didactic means used to promote achieving the learning outcomes and support student-centred learning and teaching.

However, the peers determine that the preparing literature named in the module descriptions is out of the 1970's and even 1960's. Even if some fundamentals did not change very much over the years, they wonder how modern contents could be taught based on such old literature. They learned that in the module descriptions mostly literature out of the central library of the university is listed. From their point of view, it is necessary to offer access to modern literature for the students either by modernising the inventory of the library or via electrical media.

The peers welcome the number of laboratory exercises implemented in the programmes. But they learned out of the discussion with students that most of this practice is done as demonstrative exercises. By this method students could see how the equipment works but they do not get any experiences to apply the equipment by themselves. Therefore, they recommended to offer the students more opportunities for self-performed experimental work in laboratories.

Criterion 2.4 Support and assistance

Evidence:

- Self-Assessment Report
- Discussion with students

Preliminary assessment and analysis of the peers:

Hasanuddin University offers a comprehensive advisory system for all students. Before entering the university, an orientation week is held to introduce students to the university environment and academic culture. It also provides students the chance to interact with each other. During this orientation week, a group of tutors is assigned to guide new students and give all information students need to adapt to the new academic environment. Students will be supported by an academic advisor that will monitor their academic performance through Information Management System (SIM). The academic advisor does not only give support regarding academic process but also deals with non-academic issues that may influence the performance of the students.

Students confirm in the discussion with the peers that the advisory system works very well, that they meet their academic advisors regularly and that they always may contact them personally for support or advice. In general, students stress that the teachers are open minded, communicate well with them and take their opinions and suggestions into account and changes are implemented if necessary.

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

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

Regarding the workload of the internships, the peers take into account that the internships are awarded with 2 respectively 3 SKS for two months work in companies and the writing of the report afterwards. As one SKS is calculated for 170 minutes of student work per week, two SKS for two months (ca. 9 Weeks) mean some 80 hours of student workload for the internship. The peers doubt whether students work only some 9 hours per week for the companies during their internship. Therefore, they see in this calculation one reason for the extension of study time by students and suggest a requirement to ensure that the

student workload and the credit points correspond for all mandatory elements of the programmes. Additionally, they suggest a recommendation to define a period of time to work on the final theses.

The peers appreciate the comment of the university that in all programmes the latest literature is in use. However, in that case this literature should to be named in the module descriptions as well. As the university does not describes how students have access to modern literature, the peers confirm the corresponding requirement.

Regarding the laboratory exercises, the peers appreciate that demonstration exercises only were implemented during the pandemic and that students will use the equipment by their own as soon as possible. Therefore, from the point of view of the peers there is no need for a recommendation anymore.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation
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Evidence:

- Self-Assessment Report
- Module descriptions
- Examination regulations

Preliminary assessment and analysis of the peers:

According to the Self-Assessment Report, the students' academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, project works, presentations, mid-term exam, and the final exam at the end of each semester. In general, exams are written tests. But in several courses also oral presentations of lab reports or homework are required. Also group discussions and practical exams in courses with high laboratory practice are conducted. In several courses students have to pass laboratory practice before entering the final exam. The form and length of each exam is mentioned in the module descriptions.

The written exams can be multiple choice, quizzes, or essays. In addition, there are oral exams. The students are informed about mid-term and final exams via the Academic Calendar. The final grade is the result of the different activities in the course.

If students fail, they have to repeat the entire module in the following semesters in general. Under certain conditions, it is possible to repeat the failed exam in the same semester.

From the point of view of the peers, more opportunities to repeat exams within the same semester could reduce the study time needed by students.

The students appreciate that there are several short exams instead of one big exam and confirm that they are well informed about the examination schedule, the examination form, and the rules for grading. From the point of view of the students the requirements in the exams are hard but fair.

All these regulations are defined in a rector's decree. As this decree is not part of the self-assessment report the peers ask to submitted this document. As students more often use the study guides to inform themselves about the regulations the peers like to see this document as well.

The peers also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples. The requirements in the exams, projects and theses correspond in general with the qualification level of all programmes. However, some of the exams are focussed on the assessment of knowledge. From the point of view of the peers, even in the first semesters the understanding of the context should be assessed as well.

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

The university submitted the named rector's degree. The peers confirm that all regulations for the examination procedures are defined transparently.

The peers follow the argumentation of the university that the first semesters are focussed on teaching knowledge. They only mentioned that some of the exams only asked about knowledge by heart but not refer to understanding.

They assess the criterion as completely fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self Assessment Report
- Staff handbook
- Discussions with programme coordinators and teaching staff

Preliminary assessment and analysis of the peers:

At Hasanuddin University, 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.

According to the Self-Assessment Report, the teaching staff involved in the bachelor programme of marine engineering consists of 20 full-time teachers (1 full professors, 8 associate professors and 9 assistant professors and 2 instructors). In the bachelor programme of Mining Engineering 3 associate professors and 7 assistant professors and 3 lecturers are involved while 1 full professor, 3 Associate professors and 13 assistant professors are teaching in the bachelor programme of Industrial Engineering.

The peers learned that the government finance determine the number of staff for each programme based on the number of students.

All members of the teaching staff are obliged to be involved in teaching/advising, research and community service. As the peers learn during the audit, all teachers have a workload between 12 and 16 lecture hours per week. However, the workload can be distributed differently between the three areas from teacher to teacher. In all labs a special lab staff for supporting the student practice is involved. The teacher-to-student ratio is approximately 1:20 in all programmes.

The university support research activities of the teaching staff by giving incentives for publishing scientific articles in reputable international journals, financing participations on national and international scientific conferences and giving grants for research projects.

Over all the peers see an appropriate network of the university and the department with national and international research institutions.

Criterion 4.2 Staff development
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Evidence:

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

Preliminary assessment and analysis of the peers:

Hasanuddin University encourages the training of its academic and technical staff, so it has developed a programme for improving the didactic abilities and teaching methods. One part of the capacity-building programme focuses on subject-specific skills, whereas other training courses are intended to further improve the teachers' didactic skills and to introduce new teaching methods. There are financial resources available for staff members to go abroad for a limited time and to take part at conferences or other events in order to stay up to date with the scientific development in their area of expertise.

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

In summary, the auditors confirm that the university offers sufficient support mechanisms and opportunities for members of the teaching staff who wish to further develop their professional and teaching skills.

Criterion 4.3 Funds and equipment
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Evidence:

- Self-Assessment Report
- Discussions with programme coordinators and teaching staff
- digital visit of the laboratories, lecture rooms, and the library

Preliminary assessment and analysis of the peers:

The peers were explained that financial sources for Hasanuddin University is originated from government funding, society funding, and tuition fees. The operational funds were distributed to the faculties based on a specific formula depending on the number of students. The salary for staff members included a basic salary from government and incentives depending on additional efforts of staff members. The management of Hasanuddin University stressed that even if the contributions from private businesses decreased to zero due to bad economic developments, the university would still be capable to maintain its operations. The financing of the equipment is ensured also by external funds (third party money).

The peers were convinced that the financial means were sufficient and secured for the timeframe of the accreditation. The equipment of the labs ensures to conduct the programmes in the defined way. However, the peers learned out of the discussion with students that in some cases there is a lack of field specific software. The peers recommend to offer more licences for those programmes.

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

The peers take note of the comment of the university that the available software meet the needs of the students. On the other hand there seems to be room for optimisation from the point of view of the students for some specific software. Therefore, the peers confirm the recommendation to offer more licenses for specific computer programmes. In total they assess the criterion as fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Self-Assessment Report
- Module descriptions

Preliminary assessment and analysis of the peers:

The students, as all other stakeholders, have access to the module descriptions via the homepage of the university. More detailed syllabus is handed out to the students by the lecturers at the beginning of the semester.

After studying the module descriptions, the peers confirm that they include all necessary information about the persons responsible for each module, the teaching methods and workload, the awarded credit points, the intended learning outcomes, the content, the applicability, the admission and examination requirements, and the forms of assessment and details explaining how the final grade is calculated. Nevertheless, they see some differences in the descriptions how detailed information are given.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report

- Sample Diploma for each degree programme
- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the peers:

The peers confirm that the students of all degree programmes are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Diploma Supplement contains all necessary information about the degree programme. The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, cumulative GPA, and mentions the seminar and thesis title.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Report
- All relevant regulations as published on the university's webpage: www.unhas.ac.id

Preliminary assessment and analysis of the peers:

The auditors confirm that the rights and duties of both university and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all relevant stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester. As most of these documents are not part of the self-assessment report the peers asked to submit additionally at least the examination regulations and the study guide for students together with an example of an individual student's contract for courses.

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

The university submits the examination regulations and study guides wherein all procedures are defined transparently from the point of view of the peers. They assess the criterion as completely fulfilled.

6. 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 peers:

The auditors discuss the quality management system at Hasanuddin University with the programme coordinators and the students. They learn that there is a well-structured continuous process in order to improve the quality of the degree programmes and it is carried out through internal and external evaluation.

Internal evaluation of the quality of the degree programmes is mainly provided through student and alumni surveys. The students give their feedback on the courses by filling out the questionnaire online. There are several categories in the questionnaire (e.g. schedule, course materials, workload, and motivation). A compilation of the students' feedback is sent to the respective lecturers. As the students point out during the discussion with the peers, there is also the possibility to give a direct and informal feedback to the teacher.

The results of internal quality assessments are evaluated on faculty level attended by the dean, vice deans, heads of departments, heads of laboratories, degree programme managements and the Quality Assurance Unit.

During the audit, the peers learn that the results of the surveys are accessible by the students and the members of the teaching staff. If there is negative feedback, the Dean talks to the respective teacher, analyses the problem, and offers guidance. The auditors gain the impression that the students' feedback is taken seriously by the faculties and changes are made if there is negative feedback.

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

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

As the university did not comment the report, the peers confirm their preliminary assessment that the criterion is completely fulfilled.

D Additional Documents

No additional documents needed

E Comment of the Higher Education Institution

The university submits a detailed comment.

F Summary: Peer recommendations

The peers recommend the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Marine Engineering	With requirements for one year	--	30.09.2027
Ba Mining Engineering	With requirements for one year	--	30.09.2027
Industrial Engineering	With requirements for one year		30.09.2027

Requirements

- A 1. (ASIIN 2.2) Ensure that the workload and the credit points correspond for all mandatory elements of the programmes (internship, final theses).
- A 2. (ASIIN 2.3) Ensure that students have access to modern literature.

Recommendations

- E 1. (ASIIN 2.2) It is recommended to analyze more intensively the reasons for the regular extension of the study time by students.
- E 2. (ASIIN 2.3) It is recommended to update the listed literature in the module descriptions.

E 3. (ASIIN 4.3) It is recommended to offer more licenses of adequate software for students.

G Comment of the Technical Committees

Technical Committee 01 – Mechanical Engineering/Process Engineering (07.03.2022)

The Technical Committee discusses the procedure and follows the assessment of the peers without any changes.

The Technical Committee 01 – Mechanical Engineering/Process Engineering recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Marine Engineering	With requirements for one year	--	30.09.2027
Ba Mining Engineering	With requirements for one year	--	30.09.2027
Industrial Engineering	With requirements for one year		30.09.2027

Technical Committee 11 – Geosciences (08.03.2022)

The Technical Committee discusses the procedure and follows the assessment of the peers without any changes.

The Technical Committee 01 – Mechanical Engineering/Process Engineering recommends the award of the seals as follows:

H Decision of the Accreditation Commission

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Marine Engineering	With requirements for one year	--	30.09.2027
Ba Mining Engineering	With requirements for one year	--	30.09.2027
Industrial Engineering	With requirements for one year		30.09.2027

H Decision of the Accreditation Commission

The Accreditation Commission discusses the accrediting procedure. It reformulate the requirement regarding the literature in order to clarify the intention of the requirement. further on it follows the assessment of the peers and the Technical Committees.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Marine Engineering	With requirements for one year	--	30.09.2027
Ba Mining Engineering	With requirements for one year	--	30.09.2027
Industrial Engineering	With requirements for one year		30.09.2027

Requirements

- A 1. (ASIIN 2.2) Ensure that the workload and the credit points correspond for all mandatory elements of the programmes (internship, final theses).
- A 2. (ASIIN 2.3) Ensure that students have access to modern literature.

Recommendations

- E 1. (ASIIN 2.2) It is recommended to analyze more intensively the reasons for the regular extension of the study time by students.
- E 2. (ASIIN 2.3) It is recommended to update the listed literature in the module descriptions.
- E 3. (ASIIN 4.3) It is recommended to offer more licenses of adequate software for students.

Appendix: Programme Learning Outcomes and Curricula

According to the SAR the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Marine Engineering:

Attitude	To demonstrate a high spirit attitude based on Pancasila, upholding national values, scientific ethics, having social sensitivity, teamwork, and being responsible for work in the field of expertise independently. (ILO-01)
Knowledge	Understand the key aspects and concepts of ship design, ship mechanical and electrical, and marine structure systems to formulate procedural problem-solving. (ILO-02)
	Understand the theory of marine structure machinery systems, which includes engineering design, fabrication, installation, supervision, survey and maintenance, and repair, to produce the optimal design (ILO-03)
	Understand and able to develop supervision implementation techniques, develop efficient fabrication process procedures, and produce an effective management system (ILO-04)
General Skills	Able to conduct logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applied humanities values following their field of expertise (ILO-05)
	Able to determine appropriate decisions in the context of solving the problem in their area of expertise, based on the result of information and data analysis (ILO-06)
	Able to be responsible for the achievement of teamwork and supervise and evaluate the completion of work assigned under their responsibility (ILO-07)
Specific Skills	Able to design/analyze machinery systems, ship propulsion and control, and marine structures using application computing programs through designing processes for various types of machinery, propulsion, and control systems as an implementation of expertise and adaptability to problems in the marine environment as a form of ability to solve energy, safety, and marine pollution problems. (ILO-8)
	Able to design piping and instrumentation installation systems on ships and marine structures by applying standard rules and regulations for various machinery, propulsion, and control systems as an implementation of expertise and adaptability to marine environmental problems encountered in solving energy and safety, and marine pollution problems (ILO-09)
	Able to carry out supervision and survey work for ship machinery and marine building systems by applying standards and regulations for various types of machinery, propulsion, and control systems as an implementation of expertise as a form of implementing expertise and adaptability to marine environmental problems encountered in solving energy problems marine safety and pollution (ILO-10)

0 Appendix: Programme Learning Outcomes and Curricula

Able to design ship machinery, maintenance, and repair system and ship equipment systems and marine building systems using the quantitative method (ILO-11)

The following **curriculum** is presented:

Semester	1	2	3	4	5	6	7	8
Curriculum Structure of Bachelor of Marine Engineering	Civic Education 2 CP	Religion Studies 2 CP	Engineering Mathematics 3 CP	Ship Propulsion 3 CP	Marine Safety 3 CP	Research Methodology 2 CP	Student Community Services 4 CP	Seminar 1 CP
	Philosophy of Science and Technology 2 CP	Pancasila 2 CP	Ship Resistance 3 CP	Ship Machinery Design I 4 CP	Ship Machinery III 2 CP	Maritime Economy 2 CP	Internship 3 CP	Thesis 5 CP
	Bahasa Indonesia 2 CP	Maritime Socio-Culture Studies 2 CP	Heat Transfer 3 CP	Piping Installation System 3 CP	Air Conditioning 2 CP	Ship Machinery Repairation 3 CP	Labo Compulsory 2 CP	
	Calculus I 3 CP	English 2 CP	Ship Machinery I 3 CP	Ship Machinery II 3 CP	Ship Machinery Design II 4 CP	Ship Vibration 3 CP	Labo Elective 1 2 CP	
	Physics I 3 CP	Physics II 3 CP	Ship Construction 3 CP	Computation and Programming 3 CP	Marine Instrumentation System 3 CP	Control Engineering System 3 CP	Labo Elective 2 2 CP	
	Engineering Drawing 3 CP	Calculus II 3 CP	Fluid Machinery 3 CP	Ship Electrical 3 CP	Engineering Statistics 2 CP	Marine Structure System 3 CP	Labo Elective 3 2 CP	
	Introduction to Naval Architecture 3 CP	Engineering Mechanics 3 CP	Ship Design and Theory 3 CP		Planning and Optimization Method 3 CP	Marine Renewable Energy 2 CP	Co-Curricular 2 CP	Design Project Seminar 2 CP
					Thermodynamics 3 CP			
	Fluid Mechanics 2 CP							
CP	18	22	21	19	21	18	19	6
ECTS	32,64	39,89	38	34	38	33	34	10,88
								144
								261,12

According to the SAR the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Mining Engineering:

Attitude	To internalize academic values, norms, and ethics, also to effectively communicate in community life. (ILO-01)
Knowledge	To understand basic principles of geology, mathematics, physics, and chemistry, regarding the area of engineering. (ILO-02)
	To acquire concepts of technology of mining. (ILO-03)
Skills	To apply logic and innovative thinking in developing knowledge and technology and problem-solving within the area of expertise. (ILO-04)
Competences	To be able to apply principles of knowledge and technology in developing the technical design of mining. (ILO-05)
	To be able to apply basic principles of geology, and engineering of physics, chemistry, mathematics, in analyzing and evaluating mineral and coal resources. (ILO-06)
	To be able to apply principles of economics, management and valuation techniques in planning and managing mineral and coal resources. (ILO-07)
	To be able to integrate principles of physics and mathematics in reviewing mining geomechanics. (ILO-08)
	To be able to study and take advantage of knowledge and technology in the engineering of mineral and coal processing. (ILO-09)
	To be able to integrate the concept of ecotechnology in developing the technical design of minerals and coal. (ILO-10)

0 Appendix: Programme Learning Outcomes and Curricula

The following **curriculum** is presented:

8th Semester	Student Community Service (7.24 ECTS)	Field Work/ Special Topic (3.62 ECTS)	Seminar* (3.62 ECTS)	Bachelor Thesis* (7.24 ECTS)	Elective Course IV (3.62 ECTS)	Elective Course V (3.62 ECTS)			
					ILO= 04 to 10	ILO= 04 to 10			
7th Semester	ILO= 01	ILO= 01, 04	ILO= 01, 03, 04	ILO= 01, 03, 04	Elective Course I (3.62 ECTS)	Elective Course II (3.62 ECTS)	Elective Course III (3.62 ECTS)		
					ILO= 04 to 10	ILO= 04 to 10	ILO= 04 to 10		
6th Semester	Scientific Communication Techniques (3.62 ECTS)	HSE and Mining Policy (3.62 ECTS)	Mine Planning* (5.43 ECTS)	Modelling and Reserve Evaluation (3.62 ECTS)	Mine Management (3.62 ECTS)	Mine Geotechnics (3.62 ECTS)	Coal Processing and Utilization (3.62 ECTS)	Rocks and Non-metallic Minerals (3.62 ECTS)	Mine Environmental Engineering (3.62 ECTS)
	ILO= 01	ILO= 01	ILO= 03, 04, 05	ILO= 06	ILO= 04, 07	ILO= 04, 05, 08	ILO= 09	ILO= 09	ILO= 10
5th Semester	Mine Equipment and Material Handling (3.62 ECTS)	Exploration Techniques (5.43 ECTS)	Geostatistics (3.62 ECTS)	Mine Investment Analysis (5.43 ECTS)	Rock Mechanics (5.43 ECTS)	Mine Ventilation (3.62 ECTS)	Mineral Processing (5.43 ECTS)	Mine Hydrology (5.1 ECTS)	
	ILO= 04, 05	ILO= 05, 06	ILO= 06	ILO= 05, 07	ILO= 05, 08	ILO= 05	ILO= 09	ILO= 05, 10	
4th Semester	Numerical Methods (5.43 ECTS)	Genesis of Mineral and Coal Deposit (5.43 ECTS)	Mineral Economics (5.43 ECTS)	Blasting Engineering (3.62 ECTS)	Material Characterization (5.43 ECTS)	Soil Mechanics (5.43 ECTS)	Hydrogeology (5.43 ECTS)		
	ILO= 08, 10	ILO= 06	ILO= 07	ILO= 04, 08	ILO= 09	ILO= 08, 10	ILO= 10		
3rd Semester	Mining System (3.62 ECTS)	Mining GIS (3.62 ECTS)	Engineering Economics (3.62 ECTS)	Physical Chemistry (3.62 ECTS)	Engineering Mechanics (3.62 ECTS)	Statistics (3.62 ECTS)	Matrices and Vector Spaces (3.62 ECTS)	Structural Geology (5.43 ECTS)	Petrology (5.43 ECTS)
	ILO= 03, 05	ILO= 03, 04	ILO= 05, 07	ILO= 02	ILO= 08, 10	ILO= 02, 06, 08, 10	ILO= 02, 08, 10	ILO= 02, 06, 08, 10	ILO= 02
2nd Semester	Mining Environmental Science (3.62 ECTS)	Basic Mathematics II (5.43 ECTS)	Basic Physics II (5.43 ECTS)	Mapping (3.62 ECTS)	English (3.62 ECTS)	Religion (3.62 ECTS)	Pancasila (The 5 Moral Principles of Indonesia) (3.62 ECTS)	Social and Cultural Maritime Perspective (3.62 ECTS)	Mineralogy (5.43 ECTS)
	ILO= 03	ILO= 02, 07	ILO= 02, 08, 10	ILO= 4, 5, 6, 8, 10	ILO= 01	ILO= 01	ILO= 01	ILO= 01	ILO= 02
1st Semester	Introductory to Mining Engineering (3.62 ECTS)	Basic Mathematics I (5.43 ECTS)	Basic Physics I (5.43 ECTS)	Basic Chemistry (5.43 ECTS)	Engineering Drawing (3.62 ECTS)	Indonesian Language (3.62 ECTS)	Civic Education (3.62 ECTS)	Knowledge, Technology, and Social Perspective (3.62 ECTS)	Physical Geology (3.62 ECTS)
	ILO= 03, 05	ILO= 02, 07	ILO= 02, 08, 10	ILO= 02	ILO= 04, 05	ILO= 01	ILO= 01	ILO= 01	ILO= 02
Courses Group									
Basic social science		Basic geological science		Mineral Exploration		Geomechanics		Mine Environment	
Basic math & natural science		Mine design		Mine valuation		Material processing		LBE Project	

According to the SAR the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme Industrial Engineering:

Area	Intended Learning Outcomes	Code
Attitude	Have a good understanding and be able to implement professional attitudes and ethics.	ILO-1
Knowledge/Understanding	Able to understand the latest knowledge in the field of Industrial Engineering	ILO-2
Skills	Able to apply the theories, methods, and problem-solving tools in the Industrial Engineering field	ILO-3

0 Appendix: Programme Learning Outcomes and Curricula

	Able to communicate effectively as individual and team in problem-solving	ILO-4
	Able to adapt in a team with various educational fields and cultures	ILO-5
	Able to solve Industrial Engineering problems in economic, environmental, and social areas	ILO-6
	Able to perform research, analysis, and interpretation of the result	ILO-7
Competence	Able to use the tools i.e., machines, software, and other tools needed in Industrial Engineering practice	ILO-8
	Able to design and develop an industrial system	ILO-9
	Have entrepreneurial skills	ILO-10

The following **curriculum** is presented:

Structure of Bachelor of Mechanical Engineering										CP	ECTS	
8				Internship (1CP) (S1,C1)	Community Service Program (1CP) (S1,S1,S4)	Final Project (4CP) (S1,S4,S3)				10	20.69	
7	Industrial System Simulation (3CP) (S1,C2)	Facility Layout Design (3CP) (S1,S4,C2)	Industrial Psychology (2CP) (S1)	Industrial Engineering Design 3 (1CP) (S1,S2,C1,C2)	Industrial Ergonomics (2CP) (C1,S1)	Supply Chain Management (2CP) (S1,C2)	Final Report 1 (3CP) (S1,S5)	Elective 3 (2CP)	Elective 4 (2CP)	19	34.45	
6	Occupational Health and Safety (1CP) (S1)	Industrial System Modelling (2CP) (S1,C2)	Industrial Engineering Design 2 (1CP) (S1,S2,S3,C1)	Production Planning and Control 2 (2CP) (S1,C2)	Enterprise Design Analysis (3CP) (S4,C2,C3)	Organization Design (3CP) (C2)	Maintenance and Reliability Engineering (2CP) (S1,S4)	Product Design and Planning (2CP) (S1,S2,S3,C2)	Quality Control and Assurance (3CP) (K1,S1,C1)	19	34.45	
5	Management Information System (2CP) (C1,C2)	Work System Design and Ergonomics 2 (2CP) (S1,S2,C1)	Stochastic Method (3CP) (S1,S4)	Production Planning and Control 1 (2CP) (S1,S4,C1)	Project Management (2CP) (S1,S4,C1)	Inventory Control (2CP) (S1,S4)	Cost Estimation Analysis (3CP) (S1,S4)	Elective 1 (2CP)	Elective 2 (2CP)	19	34.45	
4	Social Concept and Maritime Culture (2CP) (S3)	Multivariate Calculus (2CP) (S1)	Mechatronics (2CP) (S1,C1)	Human Resource Management (2CP) (S1)	Industrial Engineering Design 1 (1CP) (S1,C1)	Optimization (3CP) (S1,S4)	Material Handling Equipment (3CP) (S1,C1)	Work System Design and Ergonomics 1 (2CP) (S1,C1)	Industrial Statistics (3CP) (S1,S5,C1)	Engineering Material Practice (1CP) (S1,C1)	20	36.91
3	Matrix and Vector (3CP) (S1)	Engineering Material (2CP) (K1,S1,C1)	Engineering Economics (2CP) (S4)	Environmental Science (2CP) (S4)	Strength of Material (3CP) (S1)	Probability Theory (3CP) (S1,S5)	Industrial Electrical (2CP) (S1)	Entrepreneurship (2CP) (C3)	Measurement Devices and Tool (2CP) (S1,C1)	20	36.27	
2	English Language (2CP) (S2)	Education of Religion (2CP) (A1)	Introduction to Economics (2CP) (K1,S4)	Basic Physic II + Practice (3CP) (S1)	Basic Mathematic II (3CP) (S1)	Discrete (2CP) (A2)	Practice Manufacturing Process (1CP) (K1,S1,C1)	Computer Programming (2CP) (S1,C1)		21	38.08	
1	Art and Technology Science (2CP) (K1)	Indonesian Language (2CP) (S2)	Engineering Drawing (2CP) (S1,C2)	Civic Education (2CP) (A1)	Basic Mathematic I (3CP) (S1)	Basic Physic I-Practice (3CP) (S1)	Introduction to Industrial Engineering (3CP) (K1)	Manufacturing Process (2CP) (S1,C1)		19	34.45	
										147	269.76	

General Course	Compulsory Course	Elective Course	Final Year course
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