ASIIN Seal

Accreditation Report

Bachelor's Degree Programme
Electronics Engineering Education
Electrical Engineering Education
Mechanical Engineering Education
Building Engineering Education
Informatics and Computer Engineering Education

Provided by
Universitas Negeri Jakarta

Version: 15.01.2024

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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]
Pendidikan Teknik Elektronika	Electronics Engineering Education Programme	ASIIN	Indonesian Accreditation Agency for Higher Education, 2018-2023	FA 02
Pendidikan Teknik Elektro	Electrical Engineering Education Programme	ASIIN	Indonesian Accreditation Agency for Higher Education, 2020-2025	FA 02
Pendidikan Teknik Mesin	Mechanical Engineering Education Programme	ASIIN	Indonesian Accreditation Agency for Higher Education, 2020-2025	FA 01
Pendidikan Teknik Bangunan	Building Engineering Education Programme	ASIIN	Indonesian Accreditation Agency for Higher Education, 2020-2025	FA 03
Pendidikan Teknik Informatika dan Komputer	Informatics and Computer Engineering Education Programme	ASIIN	Indonesian Accreditation Agency for	FA 02, FA 04

[1] ASIIN 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.

			Higher Education, 2017-2022	
Date of the contract: 22.04.2021 **Submission of the final version of the self-assessment report:** 24.08.2022 **Date of the online audit:** 14. – 16.09.2022				
Peer panel: Prof. Dr. Reinhard Moeller, University of Wuppertal Professor Dr. Andreas Schwill, Universität Potsdam Professor Dr.-Ing. Andrej Albert, Hochschule Bochum Indah Widiastuti, PhD., Universitas Sebelas Maret Nils Barkawitz, Comma Soft AG Fakhri Ghiffari, student at Universitas Gadjah Mada				
Representatives of the ASIIN headquarter: Paulina Petracenko, Andrea Kern				
Responsible decision-making committee: Accreditation Commission for Degree Programmes				
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 01 – Mechanical Engineering/Process Engineering as of December 9, 2011 Subject-Specific Criteria of Technical Committee 02 – Electrical Engineering/Information Technology as of December 9, 2011 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of September 28, 2012 Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of March 29, 2018				

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
Electronics Engineering Education	Sarjana Pendidikan (S.Pd)/Bachelor of Education in Electronics Engineering Education		6	Full time	/	8 Semesters	216 ECTS/144 SKS	Starting each August, September 1964
Electrical Engineering Education	Sarjana Pendidikan (S.Pd)/Bachelor of Education in Electrical Engineering Education		6	Full time	/	8 Semesters	216 ECTS/144 SKS	Starting each August, September, 1985
Mechanical Engineering Education	Sarjana Pendidikan (S.Pd)/Bachelor of Education in Mechanical Engineering Education		6	Full time	/	8 Semesters	216 ECTS/144 SKS	Starting each August, September 1996
Building Engineering Education	Sarjana Pendidikan (S.Pd)/Bachelor of Education in Building Engineering Education		6	Full time	/	8 Semesters	216 ECTS/144 SKS	Starting each August, September 1977
Informatics and Computer Engineering Education	Sarjana Pendidikan (S.Pd)/Bachelor of Education in Informatics and Computer Engineering Education		6	Full time	/	8 Semesters	216 ECTS/144 SKS	Starting each August, September 2010

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

The Universitas Negeri Jakarta (UNJ) has the motto “Building future leaders” and is directed towards a multicultural and entrepreneur university. Their vision comprises the aim to become a leading University in the Asian region with both an excellent education and beneficial for welfare of humanity. The faculty of Engineering states their mission in the SAR as:

1. Fostering and developing vocational technology and engineering education that can improve the quality of life of the community and a highly competitive environment.
2. Promote and develop the high-quality, responsible, and independent individuals in the vocational technology and engineering education field also possess academic ethics oriented in scientific development which recognized nationally and internationally through good governance.
3. Carry out basic and applied research in the field of vocational technology and engineering education at national and international levels to develop science, technology, and arts along with answering problems in society.
4. Organizing community service activities in the field of vocational technology and engineering based on the results of innovative and highly competitive research in the effort of empowering and improving the community’s welfare.
5. Fostering and developing the culture of technopreneur ship as well as collaborating with various institutions locally and abroad that are mutually beneficial to apply the Tridharma of High Education in the field of vocational technology and engineering.”

The Bachelor’s degree programme Electronics Engineering Education has a long history and aims to become a center of superior education, training and research in the field of Electronic Engineering Vocational Education. The programme integrates innovations and developments in science and technology in order to support and accelerate the vision of Jakarta State University. The mission of the programme is described on their webpage of the study programme as:

1. Organizing education and training to produce educators in the field of Electronic Engineering Education expertise.
2. Carry out research and play an active role in developing yourself in the field of Electronic Engineering Education expertise.
3. Developing the quality of Electronic Engineering Education graduates in the vocational field and being able to be adaptive and innovative to the development of science and technology through the process of education, research and community service.

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

"The Electrical Engineering Education Programme is designed to graduate electrical engineering educators who are competent in teaching as well as electrical engineering. The programme is set for an 8-semester full-time study. A key feature of this programme is a compulsory internship programme in partner schools for the students to gain real setting teaching experience. In addition, students are also required to undertake an industry internship to experience working in the industry."

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

"It is a study programme designed to prepare prospective mechanical engineering vocational education teachers. The Mechanical Engineering Education Study Programme includes 4 concentrations of areas of expertise, namely: 1. Production Machinery, 2. Automotive Machinery, 3. Design Construction, 4. Material Production. The production machinery sector prepares prospective teachers who are vocational students in Mechanical Engineering, Metal Welding Engineering, Metal Casting Engineering, Industrial Mechanical Engineering. The Automotive Machinery sector prepares prospective vocational school teachers and experts in the fields of light vehicle engineering, motorcycle engineering, automotive body repair techniques, and heavy equipment engineering. The Engineering Design Sector prepares prospective SMK teachers and experts in the field of Mechanical Design and Drawing, while the Materials Production Sector prepares prospective SMK teachers and experts in Metal Fabrication and Manufacturing Engineering."

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

"The vision of the BEE Study Programme is to become an institution that produces graduates of BEE who are reputable, professional, superior, devoted, nationalistic, with global insight and entrepreneurial spirit in synergy with non-BEE fields.

Based on that vision, the missions of the BEE Study Programme are:

1. Organizing Building Engineering Education to produce graduates who are professional, superior, devoted, have a national spirit, and have a global perspective and have an entrepreneurial spirit.

2. Conducting basic and applied research in the field of building engineering education to develop science and technology.
3. Organizing community service activities in the field of technology education in an effort to empower and increase the active role of the community.
4. Fostering and developing mutually beneficial cooperation and collaboration between educational institutions and industry at the national level.

The vision is in accordance with the profile of graduates produced by study programmes who can work as:

- Vocational School Teachers: Able to teach and develop learning in Vocational School in the field of building engineering education
- School Education Staff: Able to organize education management in Vocational School
- Trainers: Able to provide training in the field of building engineering education
- Engineering Staff: Able to document project data in an organized manner
- Estimator: Able to Prepare Budget Plan and Implementation Budget Plan
- Drafter: Able to design shop drawings, both 2D and 3D drawings, and adjust the planner's drawings to actual conditions in the field."

The Bachelor's degree programme Informatics and Computer Engineering Education has the vision to become an excellent education, research and training center at the national level in the field of information technology, computer science and vocational training. It aims to create both perspectives for professional educators and IT personnel with entrepreneurial skills. The mission of the programme is described on the webpage as:

1. To provide education and training in order to develop excellent and highly competitive educators in the field of informatics and computer engineering through curriculum development that suits advances in science and technology.
2. To conduct research activities as a form of active participation in the development of science and technology, especially in the field of information technology and computers.
3. To research, develop, and create works in the field of informatics and computer engineering and to disseminate science and technology through scientific publications and community service as a form of sensitivity and concern of society.
4. To equip graduates with pedagogical, professional, personal, and social competencies with environmental concern and entrepreneurial spirit.

5. To build a healthy organization of study programmes and departments based on the principles of autonomy, accountability, continual improvement, accreditation, and continuous self-evaluation.

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:

- Self-Assessment Report
- Discussion during the audit
- Module handbooks of all programmes
- Webseiten https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/
- Appendix A-1 Matrix CLO-ILO
- Appendix A-2 Matrix PLO-ILO
- Appendix A-3 Matrix Course-PLO
- Appendix C.1.1 Matrix PLO-ILO
- Appendix C.1.2. CLO-ILO
- Appendix C.1.2 Matrix Course-PLO
- Appendix D.1.2 Matrix CLO-ILO
- Appendix D.1.3 Matrix PLO-ILO
- Appendix D.1.4 Matrix Course-PLO
- Appendices: Objective Module Matrix

Preliminary assessment and analysis of the peers:
For all programmes under review, the higher education institution (HEI) prepared a detailed documentation of their objectives and learning outcomes in their self-assessment report (SAR). The description of each study programme in the SAR contains their programme education objectives (PEOs) and programme learning outcomes (PLOs), which are

in agreement with the respective ASIIN Subject-Specific Criteria (SSC) of the technical committees involved. The SAR appendices further specify the Indented learning outcomes (ILOs) and Course-PLO matrices. A short English description of the learning outcomes is also presented in the Diploma Supplements for both degree programmes.

The peers consider the objective-module-matrix of all programmes to be sound and valid.

According to the documents and the statements of the programme coordinators during the audit, the students are primarily trained to become vocational teachers with a background in engineering in the respective technical field. They have a balanced curriculum between engineering and education. Therefore, graduates have the possibility to work in jobs outside the teaching sector. These include jobs as employee/staff (predominately administration and consulting) or entrepreneurs for graduates of all programmes under review. Others find occupation as civil servants, electrical engineers or within the infrastructure sector (Electrical Engineering Education), others within the engineering sector (Mechanical Engineering Education) or as IT consultant, IT infrastructure or other IT sectors (Informatics and Computer Engineering Education). The industry representatives confirm that the graduates' competence profile enables them to work in the industry as well. According to them, many of the graduates perform tasks that are positioned at the intersection of teaching and engineering. Thus, some companies report that UNJ graduates work as teachers and consultants within their knowledge bureau to train employees. After assessing the curricula of all programmes, the peers agree that graduates master skills and competencies to work as vocational teachers as well as engineers. Yet, they agree that the graduates' skills and competences are more profound in the field of teaching than engineering. Thus, in the opinion of the peers it is positive that various graduates work in an area that allows them to use both sets of competences. Further, the peers agreed that the graduates of UNJ appear to have good and diverse chances on the job market. A quick survey among the students during the audit showed, half of them want to become teachers while the other half aims for jobs outside of schools.

The HEI states that stakeholders of both schools and the industry are formally in contact to support the curriculum development towards new advances in the technological and teaching sector ensuring employment opportunities for the students after graduation. The Faculty of Engineering previously agrees on Memorandums of Understanding with both stakeholders at schools and industry deepening their cooperation on the curriculum and mandatory student internships. During the discussion, the stakeholders assure the existence of contracts. Updates on individual modules as well as the entire study programme are further based on surveys among students and alumni as well as internal stakeholders and committees. The students mention that the evaluation of the courses and programmes are done regularly at the end of each module.

Objectives and learning outcomes are transparently presented to the students on the university webpage. The students confirm the easy access to the material presenting the learning outcomes and job perspectives of each study programme online. They also report they are fully aware of all their regulations and rules. All information of each study programme is further available in the online Academic Information System.

The peers comment that three programmes Electrical Engineering Education, Electric Engineering Education, Informatics and Computer Engineering Education show a significant thematic overlap in topics and courses. The university representatives and the programme coordinators assure the peers, these programmes are managed cross-intersectionally by the faculty. The division into three programmes is created to match the specific demands of the job market. The faculty of engineering has various vocational study programmes, whose programme coordinators meet on a regular basis to discuss the status of each programme. According to the students, the aims of each course are clearly stated.

In conclusion, the peers agree, that the amount and content of the modules on engineering are sufficient within all the programmes under review. Therefore, the peers are satisfied with the qualifications and learning outcomes of each degree programme fulfilling the respective ASIIN SSC, and that they are continuously evaluated, developed by all relevant stakeholders and published transparently.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report
- Discussion during the audit
- SAR report appendices Diploma supplement

Preliminary assessment and analysis of the peers:

UNJ awards a Sarjana Sains (S.Sd.) degree equivalent to a Bachelor of Education to the graduates in Electronics Engineering Education, Electrical Engineering Education, Mechanical Engineering Education, Building Engineering Education and Information and Computer Engineering Education.

The peers confirm that the English translation and the original Indonesian names of the degree programmes under review correspond with the intended aims and learning outcomes with the exception of the “Informatics and Computer Engineering Education”. The peers state, the title of the programme “Informatics and Computer Engineering Education“

does not fulfil the ASIIN SSC criteria of the technical committee Informatics since the modules of this study programme do not cover the topics that are usually associated with computer engineering programmes, e.g. electrical engineering, VLSI design, semiconductor technology, circuit design, or embedded systems. After a detailed discussion with the programme coordinators, the problem was identified to be a mistranslation from the original title "Pendidikan Teknik Informatika dan Komputer" during the review of the study programme by the government. Until now, the imprecise name did not lead to any misunderstanding or wrong expectations by the students.

The peers agree on "Informatics and Computer Science Education" as the most suitable name for the programme and suggest changing the name of the study programme if possible.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Academic guide book of the Faculty of Engineering 2016/2017
- Module handbook of all programmes
- Appendix A.2 Course learning objective list for each course
- Appendix A.6 Course Handbook
- Appendix C.1.1
- Appendix C 2.1 Courses each semester
- Appendix D.1.2 Matrix CLO-ILO
- Appendix D.2.1 Courses in each semester
- Course handbook Building Engineering Education Study programme
- Appendix Informatics and Computer Engineering Education
- Discussion during the audit

Preliminary assessment and analysis of the peers:

All development of the curriculum at UNJ refers to government policies and regulations set by UNJ. All Bachelor degree programmes under review are offered as full-time programmes and are intended for an 8-semeser-duration. The odd semester starts in August and ends in January of the following year, while the even semester lasts from February to July. Examinations take place for one week for midterm exams and one week for final exams.

The curriculum is balanced between classroom-based study, laboratory-based study and early exposure to engineering. The curriculum structure of all study programmes comprises general courses and fundamental education courses, faculty's compulsory courses and study programme courses consisting of compulsory courses and elective courses. The number of courses in each category varies in the different study programmes.

The peers consider if the curriculum in the Buildings Engineering Education significantly covers the topics of "Earthquake Engineering" and "Finite Element Analysis of Concrete Structures" due to the local importance. The programme managers assure the peers, that they recognize the importance of these topics but consider them significantly covered for the competency profiled aimed for. Both topics are compulsory in one module each and are additionally addressed in the modules of "Concrete structure I", "Concrete structure II", "Wood structure I", "Wood structure II", "Steel structure I" and "Steel Structure II." Considering the main job perspectives of this programme, the peers agree on this structure of the curriculum.

While reviewing the documents, the peers notice an inconsistency in the number of total ECTS for the study programmes, varying between 216 and 256. The peers calculated the sum of all modules according to the curriculum, which resulted in 222 ECTS. They request therefore that the amount of ECTS points are assessed, verified and corrected in all relevant documents.

During the audit, the programme coordinators identified the error in the calculation and accept to correct this mistake in the SAR. Nevertheless, the peers are not satisfied with the transfer of the Indonesian SKS credit system to the ECTS system since it lacks any assessment and monitoring. This point will further be discussed in the criterion 2.2.

Overall, the peers conclude the modules of all programmes under review are in agreement with the requirements of a bachelor degree of education. All content of all study programmes fulfill the guidelines of the technical committees involved. The main intent in this programme is to educate (vocational) schoolteachers with a background in engineering. Most graduates working as employees in industry sector take jobs in administration, consultation or in training of workers for which they are sufficiently educated. The peers agreed, the presented curriculum allows the students to reach the qualifications for the job opportunities in their fields.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Discussions during the audit
- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/

Preliminary assessment and analysis of the peers:
The admission to all five bachelor study programmes is regulated by three different systems: (1) the National Selection of state University Admission (SNMPTN), (2) the Joint Entrance Selection of State Universities (SBMPTN) and (3) the Local University Entrance (Penmaba UNJ). New student admissions are divided by a quota of 30% from admission programme (1), 40% from (2) and 30% from (3). This percentage method is implemented to regulate the total number of new admissions that is limited by the facility capacity and the average student-to-lecturer ratio in each year. The expected intake of new students is approximately 80 for the programme of Electronics Engineering Education, 60 for Electrical Engineering Education, 90 for Mechanical Engineering Education, 70-80 for the Building Engineering Education and additional 80 for the programme of Informatics and Computer Engineering Education. Each programme performs individual tests independently in cooperation with UNJ to ensure the qualifications of the students. Agreement with high school exists at UNJ to ensure the admission requirements are fulfilled (admission programme 3). All programmes seem well received by the students with a significantly higher application number than the number of accepted students.

Students can transfer between the different programmes only up to end of the second year (4th semester). Successful modules of one study programme are accepted in the new study programme but require an assessment by a committee. In the discussion with the students, neither one of the group had transferred between programmes nor has anybody else in their classes.

The peers inquire if regulations for color-blind students are considered in the admission. The programme coordinators admit there are limitations for color-blind students in certain study programmes. The programme coordinators explain, due to the necessity of identify colors at certain devices in the practical study modules (particularly in the Electronics Engineering Education and Electrical Engineering Education programmes). Admission of color-blind in the Building Engineer Programme is possible.

To the peers, this system appears well designed and transparent and follows government-wide admission rules.

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

Due to the reasons illustrated above, the peers recommend to change the title into "Informatics and Computer Education" so it is more aligned with eth actual content of the course.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion partly fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-Assessment Report
- Objective-Module Matrix for all programmes
- Module Handbooks for all programmes
- Curricula of all programmes
- Webpage of the Faculty of Engineering http://ft.unj.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The study programmes under review are divided into modules, which comprise a sum of teaching and learning. The panel finds the structure of the modules to be adequate and manageable. Both programmes also include a certain variety of elective courses among which the students can choose in order to develop individual specializations.

The modules of all programmes under review are designed for an 8-semester period. In the opinion of the peers, the module structure allows the students to finish the study programme in the duration of four academic years despite the high workload suggested in the curriculum (see Criterion 2.2). The total workload represents a sum of 144 SKS or 216 ECTS

with an intended 20 SKS per semester. The concept of the curriculum refers to the university regulations (Permenristekdikti number 44 Year 2015 and Permendikbud Number 3 Year 2020) and follows the Indonesian National Qualifications Framework (KKNI) and the National Higher Education Standards (SNPT). The amount of compulsory and elective courses varies slightly among the different study programmes. For the Electrical Engineering Education programme, the curriculum structure consists of six groups summarized in the table below:

No	Types of Courses	Total (in Credits)	Total (in ECTS)
1	General and Supporting Knowledge Courses (MKU)	13	19,5
2	Basic Education Courses (MKDK)	12	18
3	Compulsory courses	97	148,5
4	Specialization courses	8	12
5	Pedagogical skills courses	12	12
6	Elective Courses	2	6
Total		144	**216**

All rules and regulations are summarized in an academic handbook available on the webpage of the university. In general, UNJ requires the students to be present at least 80% of module to complete the module. Examinations take place during mid-term and final weeks.

During the first year (1st to 2nd semester), the curriculum focuses on basic knowledge of mathematics, science and engineering with classroom lectures as well as laboratory and introduction classes towards engineering design. University requirements such as Language, Sports, Pancasila, Religion, and Social and Cultural Sciences are compulsory courses for all undergraduate students at UNJ. In the second and early third year (3rd to 5th semester), the students begin their studies in engineering educational skills. The 6th semester covers the student's competence and involvement in the application of engineering while the final year (7th to 8th semester) deepens the application of engineering concepts and design as well as more advance and complex systems. The final year focuses on practical work in the laboratory, internship programmes and the implementation of research skills.

Graduates of all programmes under review are accepted in subject-related master programmes at UNJ and other universities. UNJ can theoretically hire graduates from all these programmes as lecturers; however, the university policy strongly recommends hiring lectures with a master degree at the faculty of engineering.

According to the SAR, the students are required to complete two internships during their study period; one internship in the industry (usually 2 days per week) and one at a (vocational) school (usually 3 days a week). The industrial internship has a minimum duration of one month whereas the teaching internship has a minimum of two months. Students can

voluntarily extend the duration of their internship if it matches the workload of their semester schedule. In each internship, the students have two supervisors, one host at the industry or senior teacher at the host school and one of the study programme at UNJ. Internships at a vocational school often include tasks such as class preparation and in-class teaching and mainly deal with functions in school management. The students report that the internships fulfill their expectations concerning their learning outcomes. They are satisfied with the practical application of their content learned in their lectures. Yet, both students and the stakeholders remark in the discussion, an extension of the internship might benefit the learning outcome of both internships. The stakeholders (schools and industry) suggested an internship duration of up to six months. The peers agree the duration of both internships currently appears to be rather short in order to gain a substantial insight into the practical tasks of a teacher and for the students to gain experiences in teaching themselves. Therefore, the peers recommend extending the length of both internships.

Furthermore, with regard to the duration of the internships the peers note a discrepancy between the statements made by the audit discussion partners and the information in the SAR. According to the document each internship is eligible for two SKS credits (three ECTS), equivalent to 170 hours (duration of 1 month). To start an internship, 100 SKS credits in all study programmes with the exception of 120 SKS (Mechanical Engineering Education industry internship) are required of the students. In the discussion with the students and the stakeholders, the duration of the internship is mentioned to vary between one and three months. Furthermore, the peers receive different information on the days per week of the internship. Some say that the internship is one day per week whereas others say that it is two to three days. According to the students, it is still possible to schedule the internship and fill the rest of the semester with additional modules because the internships only take place on several days a week. The students explained having sufficient time on other days of the week to partake in their courses at the faculty. However, other students reported to be present at their internship the entire week. The peers therefore gain the impression the duration and workload of the internship are not properly formalized. Therefore, the peers recommend standardizing the duration of the internship, to assign the adequate amount of credits to the workload of the entire module and make the information accessible and transparent to all stakeholders.

Unfortunately, the module handbooks of all programmes were not completely available during the time of the online visit. The main problem identified by the peers is the fragmentary description of the individual modules as well as entirely missing module descriptions for the mandatory internships. The presented descriptions in the module handbooks appear not to match the classroom or laboratory teaching and examination methods (see

criterion 5.1). Certain descriptions appear to be standardized, e.g. the examination form of an “essay” (see criterion 3).

Also due to the incomplete module handbook the peers were not able to decide whether all subjects relevant for the resp. programmes are covered. For instance, for the Informatics and Computer Engineering Education programme, from the titles of the modules (see Table E.1.5) it is suspected that some fundamental subjects of computer science are missing, e.g. computability, formal languages, Chomsky hierarchy, computational complexity (P and NP), Turing machines, syntax analysis and many more.

Mobility

Student exchange is managed by the vice rector office. Foreign students can join courses (e.g. there are currently seven students from France in the programme of Building Engineering Education). Outgoing student mobility is organized by government agencies with current scholarships in the USA and Canada.

The programme of Electronic Engineering Education has many outbound students at the Universitas Pendidikan Indonesia in Bandung in the following programmes: Cellular Communication Systems (13 students), Satellite Communication Systems (30 students), Biomedical Instrumentation Systems (48 students) and in the programme Wireless Communications (19 students). Additionally, three students participated in the fall and summer programme 2021 at the Asia University, Taiwan. From the Universitas Pendidikan Indonesia in Bandung, 67 students are visiting the Electronic Engineering Education programme.

In the Mechanical Engineering Education study programme, students are encouraged to participate in exchange programmes. Nice outbound students spend up to seven days in international network collaborations at the Chulalongkorn University in Thailand (two students) and the Asia Youth International Model United Nations (one student) as well as at cooperation partners such as Shell (1 student), DIKTI (five students).

In the Building Engineering Education programme, at least 35 programmes for outbound students and five programmes for intern students were available in 2021. These include six-month-internships at various schools in Jakarta (21 students), Bekasi (four students), Cikarang Barat (eight students), Depok (four students), Kota Tangerang (one student), Kabupaten Bekasi (one student) and An Nuriyah (one student). Outbound exchange at industry partners in 2021 were taken with different durations. Twenty-seven students took a six-month internship at various partners, 32 took four-month internships while one student participated in a one-year government internship. Additionally, students participated in exchange at the universities including the Universitas Bakri, Universitas Negeri Yogyakarta

and at the Asia University. Inbound students visited from the Universitas Negeri Yogyakarta and other domestic universities (unspecified in the SAR).

The other study programmes did not specify the inbound and outgoing student mobility in the SAR.

International internships are also offered. These can be carried out when students fulfil the imposed requirements. These include the students to have passed an English language proposal examination and proven their active English competences. The internship needs to be in accordance with the discipline/study programme and the process of mentoring can be done through online communication. Overseas internships have to be self-financed when implementing street vendors. The HEI state these regulations are available on their webpage accessible to their students. This appears a challenge to some students, who remarked they would desire greater possibilities and support to carry out their internship in the industry at international companies and abroad. In general, the students report to be satisfied with the possibilities of exchange programmes to other universities and partners.

Overall, the peers considered the conditions and the offer of mobility as acceptable.

Criterion 2.2 Work load and credits

Evidence:

- Self-Assessment Report
- Module handbook for all programmes
- Academic guide book of the Faculty of Engineering 2016/2017
- Appendices diploma and diploma supplement
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The total programme covers the amount of 144 credit semester units (SKS) equal to 216 ECTS. One level of SKS represents 1 hours of learning activity in class (50 min/week/semester), 1 hour of structured task (60 min/week/semester) and 1 hour of individual learning (60 min/week/semester). The number of credits a student is allowed to take each semester is regulated by the Grade Point Average (GPA) calculated of the performance of the student of the previous semester. The average study load is 18-20 credits per semester, and can be higher for students with a GPA above 3.5 (up to 24 credits) and limited to 15 credits for students with a GPA below 2. Students with a GPA of less than two receive warnings. Advi-

sors of the students provide support for the students in recommending modules per semester and an adequate credit load per semester. Estimates for the credits per semester as suggested by the GPA:

Semester GPA	Maximum Credit for the following semester (CP)
< 2.00	15
2.00 – 2.50	18
2.51 – 3.00	20
> 3.00	24

The general workload is set by the HEI to average 20 SKS representing 30 ECTS each semester to complete the studies in four academic years or eight semesters. Answering a question of the peers, the students state their high workload, but mention they are conscious a high workload is required to pass the programmes at UNJ. One student told the peers, she is present on campus between 8 am to 5 pm followed by self-studies at home in the evening. Despite the estimated regular study time of eight semesters and four academic years mentioned in the SAR, the peers noticed the average study time is often exceeding this period. Nevertheless, the students during the audit are satisfied with their individual workload, which can be adapted in discussion with their advisors. In the discussion, none of the students is taking more than 20 SKS credits in the current semester.

In the opinion of the peers, it seems the workload of the students in the programmes under review is exceptionally high. Considering the long working hours per semester and the amount of 20 SKS, the peers consider a discrepancy between the numbers of assigned credits and the total workload of each module. Potentially, this might contribute to the longer durations than eight semesters of the average student to graduate. In discussion, the peers note that the university appears to have not yet systematically assessed the correct amount of workload per credit. The peers consider a specific focus has to be put on the individual learning time per credit, which could easily exceed the presumed 60 min per week per credit. This leads the peers to recommend, UNJ needs to properly assess the workload per credit and implement their results in the curriculum accordingly.

In addition, according to the SAR, the final project to award the bachelor of education is assigned to four SKS or six ECTS representing a work of 180 hours in the SAR. The final thesis always contains a practical part as well as one part to develop the project content into a lecture for students. Therefore, each student has two advisors for the project, one from engineering and one from education branches. UNJ follows the regulations of Indonesian government rule, which allow a maximum number of four SKS credits for a final bachelor thesis. In the discussion, the programme coordinators mention, the students are commonly

working a higher workload for their thesis than the assigned credits and might reach European standards. The peers discuss in detail, this amount of six ECTS is low in comparison and further does not match the time spend on the final project. The HEI however insisted, the amount of credits assigned to the final project strictly has to follow government guidelines. Therefore, the amount of credits is determined and cannot be changed.

As mentioned in the criterion before, the peers see discrepancies in the lived practice of the length of the internships. This also regards the workload of the internships. Each internship is eligible for two SKS credits (three ECTS), equivalent to 170 hours (duration of 1 month). In the opinion of the peers, the workload of two SKS might be adequate for the working for 2 days a week for one month, which represents only the minimum duration of the internship. However, if longer internships are common, the higher workload is not rewarded with a higher amount of credits. The module descriptions of both internships were not included in the module handbooks of each programme and could thus not clarify if further regulations are in place. The peers therefore gain the impression the duration and workload of the internship are not properly formalized. Therefore, the peers recommend to standardize the duration of the internship and to assign the adequate amount of credits to the workload of the entire module.

As mentioned in criterion 2.1 of this report, the peers questioned further if one month represents sufficient time for the students to apply and learn their practical skills. Stakeholders and students had different opinions, however, as both expressed their desire to extent their internship to improve their learning outcomes. The stakeholders from schools requested an extension of the internship to allow the students to collect more experience in the classroom. The desired duration of a six-month internship wanted by representatives of both schools and industry is desirable in their learning outcomes but might be difficult to implement in the curriculum already characterized by a high workload. Still, the peers consider the practical aspect of the internship of outstanding importance and therefore strongly recommend to extent the duration of the internship. It is suggested, the students should be allowed to decide themselves, if they want to extend the period spend in their internship at the industry or at the (vocational) schools.

In addition, the regulations of both duration and assigned credits need to be included in the module handbooks of all programmes under review and need to be further clearly communicated with the stakeholders. The curriculum should be adapted accordingly following the proper assessment of the workload of the internship and the courses (particularly the individual learning period).

Criterion 2.3 Teaching methodology

Evidence:

- Self-Assessment Report
- Academic guide book of the Faculty of Engineering 2016/2017
- Module handbooks of all programmes
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The teachers in the programmes of Electronics Engineering Education, Electrical Engineering Education, Mechanical Engineering Education, Buildings Engineering Education and Informatics and Computer Engineering Education use a variety of teaching methods to achieve the best learning outcomes. These include lectures, experiments, assignments, field studies and seminars. Student centered learning (SCL) is integrated using cooperate learning methods, problem-based learning models and project-based learning. Skill-based learning in laboratories and workshops focus on active learning, collaboration and critical thinking to solve practical problems. Basic courses often apply teaching centered learning (TCL) while advanced courses include research methodology (literature search, creating research ideas, proposal writing, etc.).

The teaching staff assures, different teaching methods are applied depending on the topic and the students. Practical assignments often include the design, construction, scientific tests and are finalized by a presentation of the entire project to the lecturers. Case-based examples are usually solved by calculations while programme-based methods are practical assignments like “how to create a product for production.” The staff explained to the peers, the teaching methods are adapted towards the course and towards the students as the demands of each class is different. In the discussion with the teachers, the peers are informed that the teachers design the assignments often from a didactic point of view considering the prospective career of the students as teachers.

The peers notice the described variety of teaching methods is not integrated in the module handbooks. Therefore, the peers recommend improving the module handbooks recording all teaching methods applied in each module. The current situation is not transparent towards the students, who are entitled to a precise description of all teaching methods applied in each module.

Criterion 2.4 Support and assistance

Evidence:

- Self-Assessment Report
- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/
- Academic guide book of the Faculty of Engineering 2016/2017
- Discussions during the audit

Preliminary assessment and analysis of the peers:

New students receive an introduction to new campus life for six days to provide an overview of the facilities, early guidance and counseling and awareness programmes. The university offers academic support for all students by offering an academic calendar online including starting dates of all classes, monitoring of lectures, course score entries and evaluation of lectures. Academic advisory lecturers are additionally guiding the students through their studies. They support the students in the approval of their course load and act as a direct advisor to all questions. An additional job training supervisor guide the students during the practical work at the industry while a teaching practical advisor assists them during the internship at schools. Students also receive support from the library with access to literature and the online journal subscriptions. Extracurricular programmes are offered to support students' talents and interests. Excellent students can receive support from the university in national and international competitions whereas students with academic problems are offered additional counseling. Academic guidebooks are online available for all students to download.

Additionally, selected senior students often assist the teachers in the classroom teaching and outside. The teaching staff told the peers, in their experience, younger students approve this system, as they feel more comfortable talking to senior students. In turn, these senior students gain teaching experience and confidence in communicating their knowledge. Senior and junior students both report to the peers, they feel motivated by this support system. The peers appreciate and support this initiative.

Further, the students are very satisfied with the lecturers and the administration. Both can be contacted easily via email and/or whatsapp and reply quickly to their requests. The students are further satisfied with the supervision provided by the programmes.

The peers are satisfied with the regulations and the support UNJ offers its students.

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

In conclusion, the peers require UNJ to establish formal regulations for the internships regarding length and workload and to make them transparent to all stakeholders. Furthermore, they recommend to extend the length of the teaching or industry internship.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion partly fulfilled.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- Self-Assessment Report
- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/
- Academic guide book of the Faculty of Engineering 2016/2017
- Module handbooks of all programmes
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The examination system of all programmes under review is established in accordance with the rector’s decree regarding the academic calendar. The mid-semester examination is held in the eighth week of each semester while the final examination is held in the sixteenth week of the semester. The final grade considers the participation in the lecture, assignments or homework and both mid-term and final exams following a defined and transparent calculation.

The exam is conducted by measuring individual students’ understanding of the course content and fulfilling the course objectives. The examination methods applied in each module are adjusted towards the types of activities and the achievement of the learning outcome

of the respective module. Classroom-based courses generally are assessed by oral presentations, but also integrate group discussions and practice tests in the laboratory as well as assignments/homework. Reports are necessary to complete the internship at industry, which require approval by both supervisors at the host organization and UNJ. Internships at school are completed by a final practice in the classroom, which is observed and graded by the supervisor at the school and of UNJ. The lecturer presents all regulations and requirements of the examination at the beginning of each module together with the course content and general objectives.

All programmes demand a final project, which is required to meet the final undergraduate requirements. Students are assigned to conduct experiments and construction designs. Two lecturers guide the final project (first and second supervisor). After completing their research and writing the final project report, the students need to defend their final project in front of four examiners (two appointed supervisors and two additional lecturers with relevant competencies).

At the end of each semester, all assignment results of each course are posted on the academic information online system. If a correction is necessary, the faculty academic affairs staff can revise the grade to re-issue the appropriate student grade. Students generally need a grade above C, representing above 56% of understanding to pass a module.

Table A3.1 Final Grade of the Course

Understanding Level (%)	Alphabet	Number	Description
86 – 100	A	4	Pass
81 - 85	A-	3,7	Pass
76 - 80	B+	3,3	Pass
71 - 75	B	3,0	Pass
66 - 70	B-	2,7	Pass
61 - 65	C+	2,3	Pass
56 - 60	C	2,0	Pass
51 - 55	C-	1,7	Fail
46 – 50	D	1	Fail
0 – 45	E	0	Fail

The students are satisfied with the examination systems and report to the peers, that they have enough time to prepare for the exams adequately. Due to the determined examination schedule, they are able to prepare for their exams accordingly.

Graduates of all programmes under review can further take part in national courses and exams in their chosen subject to receive additional national certificates.

The peers note the descriptions of the exams in the module handbooks of all programmes do not match the descriptions in the SAR. Currently, the handbooks label all written exams as “essays.” The peers ask the teaching staff to clarify their examination methods and if they represent an essay (a written exam). The teaching staff explains to the peers, they include a large variety of examination methods in their modules. These range from written and oral exams, presentations to practical work. The teaching staff mentions, the examination methods are chosen based on the content of the modules. Written examinations might be a part of an exam, but the exams often also contain calculations, proofs, algorithms and programmes and should therefore not be labeled as an “essay”. The peers agree that the module handbooks need to reflect the variety of examinations and the staff confirmed to adapt the module handbook accordingly.

In addition to the missing variety of examination forms, the peer noticed an assessment system for practical work/modules is also not included in the module handbooks. The staff explained to the peers, that lab report is considered in the calculation of the grade next to the practical skill rated by the lecturer in a 15-20 min demonstration of the student, which needs to be added to the module descriptions. In the opinion of the peers, the examination rules are organized quite informal and not transparent to the students. Therefore, the peers request a more formal version of the exam variety that is also bindingly reflected in the module handbooks of all study programmes.

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

In conclusion, the peers see the criterion as fulfilled. Nevertheless, they recommend to expand the variety of examination forms.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-Assessment Report
- Staff handbooks of all programmes
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The Faculty of Engineering of UNJ finances all staff of the programmes under review. The total number of staff members varies between each programme; the Electronic Engineering Education programme has 12 members, the Electrical Engineering Education programme has 15, Mechanical Engineering programme has 23, the Building Engineering Education programme has 30 and the Informatics and Computer Engineering programme has 17. The staff consists of associated professors, assistant professors, lecturer, laboratory assistants and administrative staff. The number of laboratories of each programme ranges from four to nine. The academic position of each staff member is based on research activities, publication, academic education, student supervision and supporting activities. Lecturers of all programmes also conduct research and publish in national and international journals. During the last five years, they further successfully applied for research grants on national and international level, attended national and international conferences and registered applications of Intellectual Property.

In each study programme, the teaching staff is comprised of individuals with a PhD and master degrees. In the programme of Electronics Engineering Education, the majority of eleven lecturers have earned a PhD while one has a master degree. Of the lecturers of the Electrical Engineering Education study programme seven have finished their PhD while four earned a master degree. In the programme of Mechanical Engineering Education, a more even distribution can be found among the lecturers with ten employees with a PhD and nine lecturers with a master degree. The teaching staff of the programme Building Engineering Education has eleven members with a PhD while eight own a master degree. The programme of Informatics and Computer Engineering Education has the lowest number of PhD members (five) while ten of their colleagues earned a master degree.

On average, the teaching staff reports to have three subjects per semester, but ranges between six and nine and 18-20 hours per week are mentioned to the peers. Certain lecturers have also successfully applied for a permit to reduce the teaching load in order to focus on obtaining their PhD in accordance with the Indonesian system. All of the teaching staff has asserted the peers to have enough time to conduct their research next to their lectures. The teaching staff admits the high number of students and that this can lead to a high

teaching load particularly if classes have to be divided and taught multiple times a week. Frequently courses are split due to the limitations by the facilities, especially in the laboratories, which further increases the teaching load. Certain laboratories have a maximum capacity of approx. 15 students, which requires the average classes to the split in two, doubling the teaching load of this class. However, the teaching load varies between the semesters and person.

After reviewing the documents, the peers note that the student to staff ratio is very high (one lecturer to 25-30 students). For example, the computer science department has an estimated 400 students, but only 15 members of their staff. In the final year, the staff reported to have around ten students for one supervisor. Additionally, the peers had the impression that the teaching load is not equally distributed among lecturers and that the teaching load might exceed a suitable level for staff and students. The Indonesian guidelines for science study programmes recommend a lecturer-student-ratio of 1:20. Therefore, the peers recommend for all study programmes to aim to reduce the lecturer-student-ratio to meet the national guidelines in order to ensure the quality of mentoring, teaching and student learning.

Criterion 4.2 Staff development

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:

In accordance with government regulations, all staff has the possibility to develop their professional teaching skills. Training for supporting is primarily held at the faculty in regular and non-periodic training and development programmes. Young researchers are given several possibilities to foster their didactic competences. In addition, UNJ offers several programmes for lecturers with a non-teaching background, conducted in workshops and courses. These include next to coaching for classroom teaching also support in developing teaching plans and integrating media. Experienced teachers offer annual programmes for lecturers to improve the quality of their teaching skills. In addition, the ministry of education offers courses to introduce new teaching methods, which are partially also offered in English. Administrative staff also receives training in computer administration and quality to ensure improving services.

The staff positively comments on the increase of opportunities at the UNJ faculty of engineering during the last years. Especially the supportive system and the working environment strongly improved during the previous years.

The peers were satisfied with the opportunities of the teaching staff to develop their skills for education.

Criterion 4.3 Funds and equipment

Evidence:

- Self-Assessment Report
- Webpage of the Faculty of Engineering http://ft.unj.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Each study programme is involved in creating a proposal for their Annual Budget Activity Plan to the UNJ administration covering all necessary expenses for the next year. This plan contains all funding for administering education and research and serving the community. Expenses outside of the proposal, e.g. repairs, can be accommodated. The administration either repairs or replaces this equipment or offers to reimburse the staff for their personal expenses. The staff is very satisfied with the facilities for teaching and research. In the discussion, they mentioned problems with high student numbers in comparison to the small laboratories; however, new facilities are already in construction. These will lead to more possibilities in teaching, allowing e.g. to conduct large-scale tests in the Building Engineering Education programme and acquisition of new machines in the Mechanical Engineering Education programme.

Competitive grants are further available at the faculty level and university level and additionally at the directorate general high education, ministry of national education and research funds. The staff of all research programmes has successfully applied for research grants. External funding from government programmes is necessary for the staff to foster national and international cooperation and receive financial support to visit conferences (especially abroad).

The teaching staff and the students informed the peers, the implemented software in the teaching is either already purchased with distributed student license (e.g. Microsoft Office) or open source software is used. Some software in teaching is not yet available in the faculty with an official license; therefore students often train with the free trial version. Purchases of these software programmes would certainly be desirable in the opinion of the

staff, students and the peers. The academic staff and students confirm to have access to a permanent workspace in the laboratory, seminar and examination rooms and meeting rooms for daily academic activities. They explain, the university also offers access to wireless network and hotspot system to access the internet to all its employees and students. At university level, lecturers and students can access the UNJ Central library, which provides additionally also access to e-journals and e-books. Not all subscriptions are available off-campus. The staff members further were very pleased with their new access to science direct allowing them to download a great variety of scientific journals. Still, in the opinion of the peers, certain important scientific journals in the field of engineering cannot be accessed. Therefore, the peers recommend the faculty to acquire subscription to field-specific journals.

The students praised the easy access to libraries, facilities and laboratories as well as fast internet connections. Overall, the students are satisfied with their equipment. However, the aged equipment in certain laboratories was criticized in addition to the low number of machines. Currently, it is common that three students operate one machine during classes in the laboratory. Newer devices are partially available (e.g. solar power meter, oscilloscope, etc.), but their numbers are limited requiring students to take turns. It is necessary to split larger student groups due to limitations in laboratory sizes and the amount of machinery. For example, 30 students are commonly divided into two groups of 15 students each, who will take turns in the laboratory once a week. To overcome these difficulties, new equipment was already purchased recently or is currently planned for new laboratories build in the next few years (building already in construction). Since the audit is carried out virtually, the peers are shown the facilities and laboratories of the HEI through various videos and powerpoint presentations. By means of the videos the peers conclude that the equipment and the facilities of UNJ are sufficient in order for the students to achieve the intended learning outcomes. However, they agree with the students that certain equipment could be renewed and quantity should be raised. Therefore, the peers strongly support the HEI's plans and actions to modernize the infrastructure and recommend expanding and modernizing the technical equipment.

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

To conclude, the peers see room for improvement in the context of staff, facilities, and equipment. Thus, they recommend to adjust the student-teacher ratio to the government regulations. Furthermore, they recommend to expand and modernize the technical equipment and to enable students to access to further international journals.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion predominantly fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Module handbooks of all the programmes
- Self-Assessment Report
- Academic guide book of the Faculty of Engineering 2016/2017
- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
In all study programmes under review, the lecturers develop the module descriptions independently and in cooperation with the study programme. At the beginning of each module, the teaching staff shall further inform the students of all requirements of the module as well as the examination and grading systems. All the important rules and regulations are further available in the module handbooks of each study programme. The academic guide book of the Faculty of Engineering and the student handbook are available online at the Academic Information System.

The peers closely examined the module handbooks of all study programmes and found several inaccuracies within single modules. First, the teaching methodologies were not fully listed in the module handbooks. The staff confirmed a greater variety of teaching methods were used in the classrooms and laboratories than included in the module handbooks. In the staff's opinion, modifications in the teaching methods are applied to accommodate the special needs of each class and its students to achieve the best learning outcomes. Nevertheless, the peers consider this practice informal and not transparent, therefore they insist to update the module descriptions in the handbooks to resemble the methods used in the classroom.

Furthermore, the information on the examination methods is not in accord with the methods used (see criterion 3). The lecturers deliberately adapt the examination system informally if considered necessary for each class. However, the peers agreed, all examination methods and grading criteria need to be clearly stated in the module handbook to be transparent for everyone. This refers particularly to the grading systems of laboratory classes and workshops.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Appendices diploma and diploma supplement of all study programmes
- Academic guide book of the Faculty of Engineering 2016/2017
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The diploma certificate and the diploma certificate supplement are regulated by the rector regulation guidelines of UNJ. A diploma supplement is bilingual in English and Bahasa. The format includes details on the study programme as well as a list of all completed modules with their awarded number of credits and grades.

The peers are satisfied with this version of the diploma and diploma supplement. However, they noted inconsistencies regarding the name of the programme (see criterion 1.2) and the duration of the programmes (see criterion 2.2). While different translations of the programme names appear between the SAR and the diploma supplement, the duration varies between four academic years in the SAR to four and five academic years in the diploma supplement. During the discussion with the peers, the HEI agreed to check the entire SAR and correct all to a consistent use of one translation only for each programme. The peers appreciate this and require that the titles and the duration of the programmes must be consistent in all documents including the Diploma Supplement.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Report
- Discussions during the audit
- Academic guide book of the Faculty of Engineering 2016/2017

- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/

Preliminary assessment and analysis of the peers:
Academic regulations are governed by the rector's office of UNJ. To graduate, the students are required to complete 144 SKS credit units with a minimum grade of C and a minimum grade of B for internships and the final project. Studies can be completed up to a total duration of 14 semesters excluding intermission. During the first and second semesters, the students take a pre-determined amount of courses, which will later be managed by the GPA system (see criterion 2.2). All rights and obligations are further discussed between the students and their advisors and are available online in the Academic Information System and the Integrated Curriculum Information System.

The students confirmed to the peers, they are well aware of their relevant regulations and considered them easy to find on the Faculty's webpage, findable also with a google search. The main rules and regulations are summarized in an Academic Information System available for download, which also includes details on how to postpone exams (e.g. due to illness) or re-sit exams. Therefore, the peers are satisfied with the presentation and transparency of all relevant rules of all programmes under review.

As illustrated in criterion 2.1 of this report, the peers notice a discrepancy between the official duration of the internship based on the SAR and the actual internships carried out by the students. Thus, they insist on formalizing all relevant rules of both the vocational and industry internship in terms of duration, workload, etc. These rules also must be made transparently to all stakeholders.

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

In conclusion, the peers see some deficits in the context of transparency and documentation. Thus, they require UNJ to prepare new module descriptions including the workload/ECTS points and the calculation of the final grade from different types of examinations. The edited module descriptions must be made accessible for all stakeholders. Furthermore, UNJ must include descriptions in the model handbooks regarding the duration, organization, grading and content of the internships at both schools and industry. Finally, UNJ has to match the titles and duration of the programmes in all documents including the Diploma Supplement.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion not fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- UNJ webpage https://penmaba.unj.ac.id/
- Academic Information System http://siakad.unj.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
UNJ has implemented several levels in their quality management to aim for continuous improvement. The university set standards in the internal quality assurance system focusing on education and learning, research and community service. Monitoring and evaluation of learning is carried out each semester, annually and after student graduation to ensure all lectures are in accordance with the plans, objectives, standards and/or targets. The Internal Quality Assessment and Development Programme team coordinates the quality management at UNJ, in cooperation with a quality assurance team in each study programme. Surveys are performed at three different clusters; (1) at the university level, (2) at the faculty level and (3) at the programme level. Feedback at all three levels can lead to improvements of the programme and the individual modules.

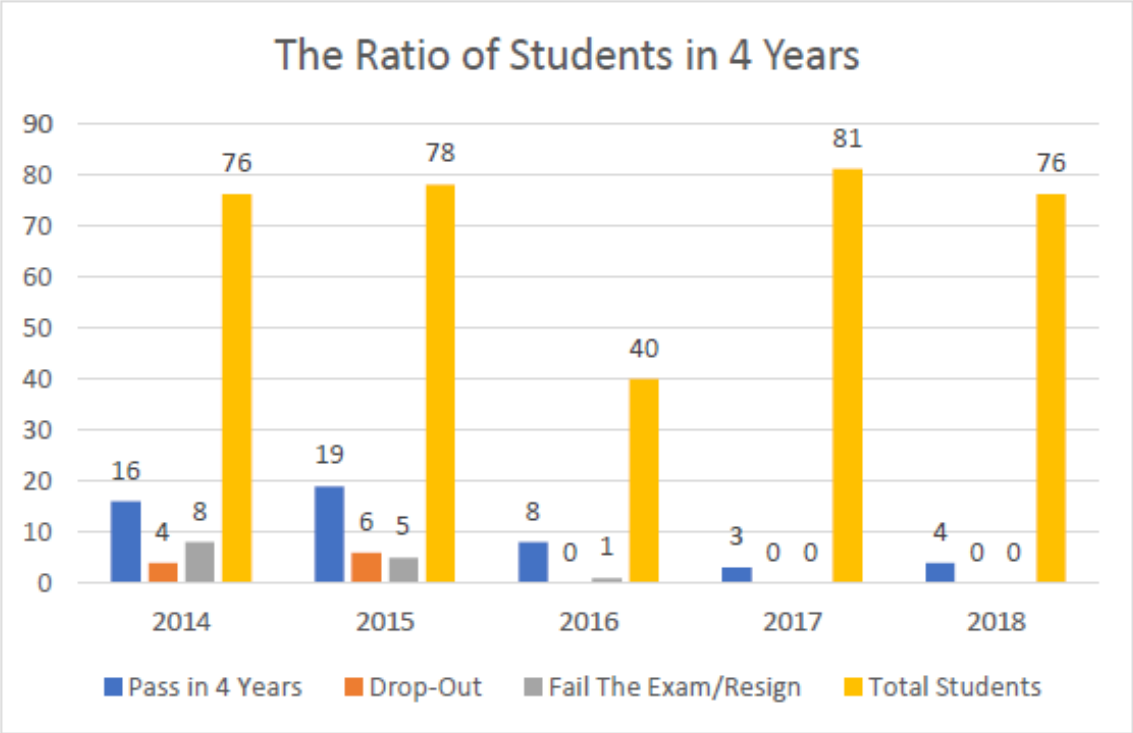
Students and stakeholders confirm they are included in the process of quality assurance. Students indicate their feedback is collected at the end of each lecture using questionnaires. Questions include the delivery and explanation quality, the workload, learning methods, communication, technology, attitude and if the lecture was in accordance to the learning objectives of the module. During the pandemic, online survey using google forms were integrated to collect the students' feedback. Additionally, the programme representatives mention, that surveys among the alumni are conducted. Annual surveys include also

surveys of the stakeholders (internal and external) to ensure partners in school and industry are satisfied with the knowledge and skills of the students.

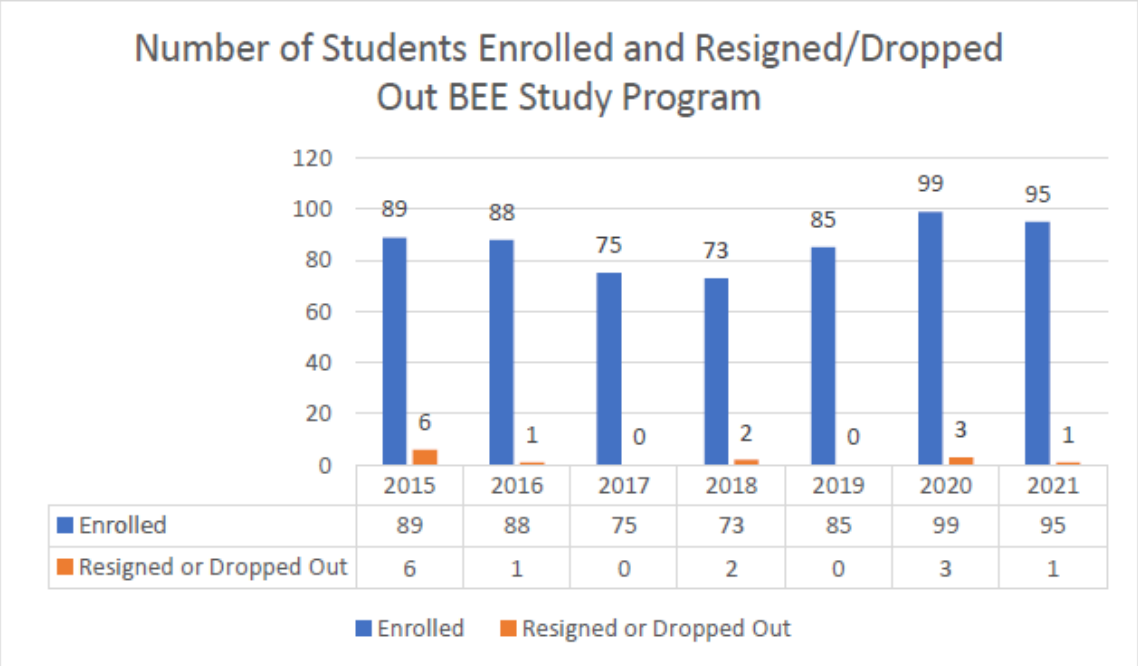
The programme coordinators explained, the questionnaires at the end of each module are mandatory questionnaires. The students are required to fill out the in order to be able to see the grade of a module. The survey process is conducted online. Adjustments in the course content and methodology is evaluated at the end of every semester by the lecturer team following the input from the students, science groups and stakeholders. Improvements are made every year on the basis of these surveys.

The programme coordinators verify, the quality and content of the curriculum is discussed at a minimum period of every five years. If needed, larger changes and revisions of the curriculum can be conducted in this frequency. Stakeholders confirmed to the peers, they are invited to discuss potentially new modules to implement changes in the industry and teaching sector to ensure good job market opportunities of all graduates. During one of the last surveys among the stakeholders, the graduates of UNJ received excellent results in their abilities in teaching and soft skills such as teamwork building and attitude. However, some graduates lack certain basic qualities in science (e.g. mathematics, physics) to solve problems in engineering. As a result of the survey, basic subjects of science were expanded in the curriculum during the last review process.

The HEI also monitors their student progress until graduation. The dropout rate of students in all programmes is low with the exception of the Informatics and Computer Engineering programme. During the last three years, in this program only about 54% of the students graduated within the observed period (2019 to 2021).



Example Electronic Engineering Programme



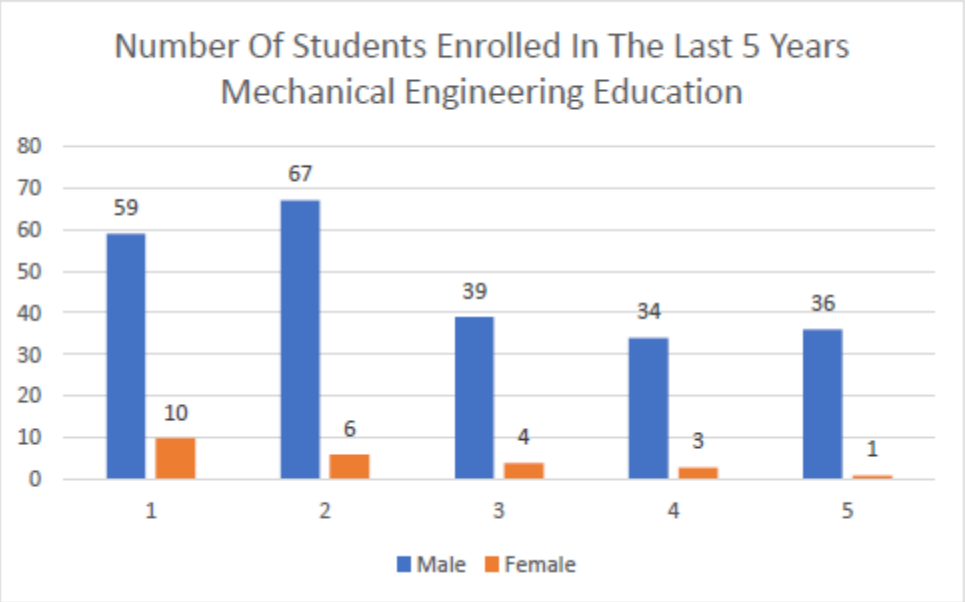
Example Buildings Engineering Education

Table E.6.5 Key Performance Indicators of Informatics Computer Engineering Education

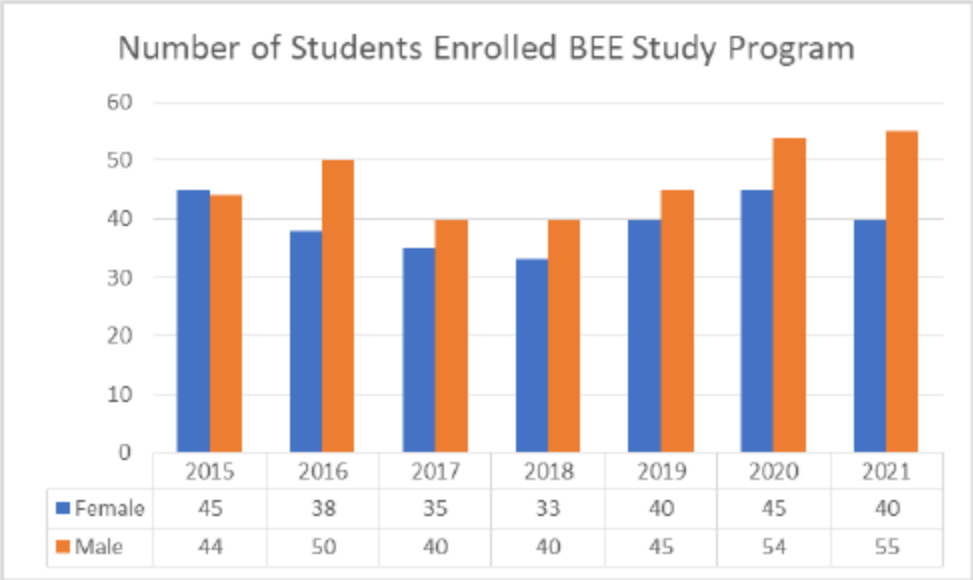
No	Key Performance Indicator	Year			Average
		2019	2020	2021	
1	Average of IPA (Academic Achievement Index)	3,37	3,395	3,415	3,39
2	Study Period (year)	4,65	4,32	5,16	4,71
3	Number of new students	85	104	97	95,00
4	Number of graduating students	84	37	51	57,33

The number of female students in the programmes is lower than of the male students. Discrepancy is highest in the programme of Mechanical Engineering Education and lowest in Building Engineering Education (shown below).

c. Mechanical Engineering Education



d. Building Engineering Education



However, the average study time of the students is higher than intended ranging closer to five academic years instead of eight semesters.

Table A6.6 Key Performance Indicators of Electronic Engineering Education Program

No	Key Performance Indicator	Year				
		2018	2019	2020	2021	Average
1	GPA average	3.56	3.485	3.53667	3.46	3.51
2	Length of study (semester)	8	8,7	9.55	9.44	8.925
3	Skripsi/final project completion time (semester)	1	1,8	2	2	1,7
4	Number of Student Intake	70	79	83	71	77.5
5	Number of students graduated	72	41	34	34	45.25
6	Waiting period for work after graduating (months)	Less than 6 months	Less than 6 months	Less than 6 months	Less than 6 months	Less than 6 months

Table D.6.1 Key Performance Indicator of Building Engineering Education

No	Key Performance Indicator	Years			Average
		2019	2020	2021	
1	Average GPA	3,24	3,3	3,44	3,33
2	Study period (years)	5,09	5,20	4,31	4,87
3	Time to complete Final Project (months)	7,57	8,98	9,08	8,54
4	Number of student intake	85	99	96	93,33
5	Number of students graduate	79	60	39	59,33
6	Waiting time after graduation (months)	1,41	2,37	1,22	1,67

The peers recognized a discrepancy between the duration of four academic years stated at the introduction of each programme and the duration of four to five years given in the diploma supplements (criterion 5.2). The HEI confirmed, students on average take longer than the four years. In the opinion of the HEI, one factor to extend the duration of the study period might be that some students already have an employment, especially during the last years of the studies. The students confirmed to own a job next to their studies, although the number was limited to single individuals among the entire group. Therefore, the peers suspect the extended duration until graduation could be connected to the high workload of the students. As discussed in criterion 2.2., the students are supposed to take 20 SKS (30 ECTS) each semester. Students with good grades can increase the number of credits per semester while poor performing ones are recommended by their mentors to decrease the number of credits. However, the HEI has never assessed the workload per SKS and likewise never assessed the actual workload for each module. The peers highlight particularly the period of individual learning (60 min/week/semester) as a risk factor for high workload.

A thorough review of the actual workload of each module could potentially lead to changes in the awarded credits to reflect the actual workload for each module. The peers insisted, an evaluation of the workload per credit is necessary to prevent a too-large workload for the students and ensure their ability to study successfully.

Thus, the peers suggest re-assessing the workload for the students on a regular basis and adapting the curriculum if necessary. The number of credits in the module handbooks need to be updated accordingly.

Further issues with the module handbooks are the incomplete and standardized descriptions of each module. The peers note errors in the variety of examination methods, missing regulations for grading practical work as well as incomplete descriptions of the teaching methods integrated into each module. Furthermore, the mandatory internships are not included as an individual module in the handbooks. The teaching staff has confirmed errors in the module handbooks. The peers recommend, it is necessary to update the module handbooks to reflect the conditions in the classroom in order for the students to prepare for the module accordingly.

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

To conclude, the peers require UNJ to assess the students' workload formally, evaluate it regularly and adapt it if necessary, in respect to the number of ECTS points given for the respective module.

UNJ submits a statement in this regard (see below chapter E).

The peer group gratefully acknowledges the beginning revision of the programmes according to the peers' comments. However, since there is still work to be done that needs more time and considerations, the peers maintain their list of recommendations and requirements until UNJ has submitted all remaining documents and proven the fulfillment of the requirements.

Criterion not fulfilled.

D Additional Documents

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

D 1. New module handbooks for all study programmes with a detailed description on teaching methods, examinations and workload/ECTS and information on the internships in both schools and industry.

E Comment of the Higher Education Institution (15.11.2022)

The following quotes the comment of the institution:

No	Peers Comment	HEI Answer
1.	**Criteria 1.1** The peer's comment that three programmes Electrical Engineering Education, Electric Engineering Education, Informatics and Computer Engineering Education show a significant thematic overlap in topics and courses. The university representatives and the programme coordinators assure the peers, these programmes are managed cross-intersectionally by the faculty. The division into three programmes is created to match the specific demands of the job market. The faculty of engineering has various vocational	Three study programs, namely Electrical Engineering Education Study Program, Electronics Engineering Education Study Program and Informatics Education Study Program are 1 cluster which has several characteristics of the same topic and course, consist of: • Programming Algorithms • Digital Engineering (Electrical and Electronics) • Microprocessors (Electrical and Electronics) • Multimedia System • Basic Electronics (Electrical and Electronics) • Electrical Sequences I, II (Electrical and Electronics) • Data Communication (Informatics and Electronics)

No	Peers Comment	HEI Answer
	study programmes, whose programme coordinators meet on a regular basis to discuss the status of each programme. According to the students, the aims of each course are clearly stated. In conclusion, the peers agree, that the amount and content of the modules on engineering are sufficient within all the programmes under review. Therefore, the peers are satisfied with the qualifications and learning outcomes of each degree programme fulfilling the respective ASIIN SSC, and that they are continuously evaluated, developed by all relevant stakeholders, and published transparently.	
	Criteria 1.2 The peers confirm that the English translation and the original Indonesian names of the degree programmes under review correspond with the intended aims and learning out-comes with the exception of the "Informatics and Computer Engineering Education". The peers state, the title of the programme "Informatics and Computer Engineering Education" does not fulfil the ASIIN SSC criteria of the technical committee Informatics since the modules of this study programme do not cover the topics that are usually associated with computer engineering programmes, e.g. electrical engineering, VLSI design, semi-conductor technology, circuit design, or embedded systems. After a detailed discussion with the programme coordinators, the problem was identified to be a mistranslation from the original title "Pendidikan Teknik Informatika dan Komputer"	**Informatics and Computer Engineering Education** Thank you for the suggestions and responses from peers. we decided for adding computer engineering specialization, for that reason we have to improve our curriculum by add around 7 subject with 14 – 21 credits ASIIN's suggestion to change the name of the study program to be Informatics Engineering and Computer Science Education was difficult because the nomenclature change procedure had to reach the ministry and the change would also affects the data in PD-Dikti (National Data Base of Higher Education in Ministry of Education). The most suitable step to overcome this is to open a Computer Engineering specialization by adding seven courses totally 14 - 21 credits.

No	Peers Comment	HEI Answer
	during the review of the study programme by the government. Until now, the imprecise name did not lead to any misunderstanding or wrong expectations by the students. The peers agree on "Informatics and Computer Science Education" as the most suitable name for the programme and suggest changing the name of the study programme if possible	
2.	**Criteria 2.1** Therefore, the peers recommend standardizing the duration of the internship, to assign the adequate amount of credits to the workload of the entire module and make the information accessible and transparent to all stakeholders.	We agree with the peers recommend standardizing the duration of the internship. Engineering academic faculty already planning to standardization internship for all study programs. For the duration of the implementation of PKM (internship in school) and PKL (internship in industry) has been regulated in the Chancellor's Decree number: 951/UN39/KM.03.05/2021 https://drive.google.com/file/d/1kLriZaMWJljA8wh7NkiiaG-hbkkQU0C-/view?usp=sharing
	Also due to the incomplete module handbook the peers were not able to decide whether all subjects relevant for the resp. programmes are covered. For instance, for the Informatics and Computer Engineering Education programme, from the titles of the modules (see Table E.1.5) it is suspected that some fundamental subjects of computer science are missing, e.g. computability, formal languages, Chomsky hierarchy, computational com-plexity (P and NP), Turing machines, syntax analysis and many more.	The basic course material is already use in Informatics and Computer Engineering Education programme, for example formal languages and computational complexity and Chomsky hierarchies are in Analysis and Design Algorithms course and Turing Machines are in the Artificial Intelligence course. https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8OxbgQ0dbk4whg7?usp=share Modul Description Algorithm Design.docx - Google Docs Modul Description Artificial Intelligence.docx - Google Docs

No	Peers Comment	HEI Answer
	Unfortunately, the module handbooks of all programmed were not completely available during the time of the online visit. The main problem identified by the peers is the fragmentary description of the individual modules as well as entirely missing module descriptions for the mandatory internships. The presented descriptions in the module handbooks appear not to match the classroom or laboratory teaching and examination methods (see criterion 5.1). Certain descriptions appear to be standardized, e.g. the examination form of an "essay" (see criterion 3).	All study program of engineering education already improve and can be found in this link. https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing
	Also due to the incomplete module handbook the peers were not able to decide whether all subjects relevant for the resp. programmes are covered.	https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing
	The other study programmes did not specify the inbound and outgoing student mobility in the SAR	Thank you for the responses, for inbound and outbound on electrical Engineering Education Programs. We have been rewritten what has been written into the SAR page B-61 Document has been provided on link below: https://drive.google.com/drive/folders/1u8eQf-pWp0lK35GwsEbbopld-5ObN4Hj?usp=share_link

No	Peers Comment	HEI Answer
		The programme of Electrical Engineering Education has many outbound students at the Universitas Negeri Ganesha (32 students), Universitas Negeri Makasar (8 students), Universitas Palangka Raya (5 students), Universitas Airlangga (1 students), Universitas Lambung Mangkurat (3 students), Universitas Negeri Padang (1 students), Universitas Bengkulu (1 students), Universitas Negeri Malikussaleh (1 students), Institus Teknologi Sepuluh November (1 students), Universitas Sebelas Maret (1 students), Universitas Gadjah Mada (1 students), Universitas Negeri Malang (1 students), PT. Jakarta Industrial Estate Pulogadung (1 students), Dinas Sosial Kabupatem Badung Bali (1 students), SMKN 29 Jakarta (4 students), SMK Kemala Bayangkari 1 Jakarta (3 students), SMKN 1 Jakarta(4 students), SMK Muhaamadiyah 1 Jakarta (4 students), SMKN 34 Jakarta (3 students), SMK Bunda Kandung Jakarta (4 students), SMKN 26 Jakarta (4 students), SMKN 5 Jakarta (3 students), SMKN 56 Jakarta (4 students). There were three programmes for intern students such as Universitas Negeri Ganesha (32 students), Universitas Negeri Makasar (7 students), and Universitas Negeri Gorontalo (1 students)
	To start an internship, 100 SKS credits in all study programmes with the exception of 120 SKS (Mechanical Engineering Education industry internship) are required of the students. In the discussion with the students and the stakeholders, the duration of the internship is mentioned to vary between one and three months. . Furthermore, the peers receive different information on the days per week of the internship. Some say that the internship is one day per week whereas others say that it is two to three days. According to the students, it is still possible to schedule	The mechanical engineering study program is slightly different because the curriculum design for the mechanical engineering education study program that we have developed is by dividing the Industrial Internship Program (PKL) and Teaching Practice (PKM) in different semesters. Normally, students are allowed industrial internships after doing teaching practice, this is carried out with the aim of seeing the limits of students' ability to understand mechanical engineering science when students are doing teaching practice. For the completeness criteria, we will immediately resend the attachment regarding the module handbook, which we have made more complete, especially regarding Industrial Internship Program (PKL) and Teaching Practice (PKM).

No	Peers Comment	HEI Answer
	the internship and fill the rest of the semester with additional modules because the internships only take place on several days a week. The students explained having sufficient time on other days of the week to partake in their courses at the faculty. However, other students reported to be present at their internship the entire week. The peers therefore gain the impression the duration and workload of the internship are not properly formalized. Therefore, the peers recommend standardizing the duration of the internship, to assign the adequate amount of credits to the workload of the entire module and make the information accessible and transparent to all stakeholders.	
	The peers agree the duration of both internships currently appears to be rather short in order to gain a substantial insight into the practical tasks of a teacher and for the students to gain experiences in teaching themselves. Therefore, the peers recommend extending the length of both internships.	We agree also to the peers, far extanding the length of both
	Therefore, the peers recommend standardizing the duration of the internship, to assign the adequate amount of credits to the workload of the entire module and make the information accessible and transparent to all stakeholders.	We deeply explan at point 2.2 (next point)
	The presented descriptions in the module handbooks appear not to match the classroom or laboratory teaching and examination methods (see criterion 5.1). Certain descriptions appear to be standardized, e.g. the	

No	Peers Comment	HEI Answer
	examination form of an "essay" (see criterion 3).	
3.	**Criterion 2.2** In discussion, the peers note that the university appears to have not yet systematically assessed the correct amount of workload per credit. The peers consider a specific focus has to be put on the individual learning time per credit, which could easily exceed the presumed 60 min per week per credit. This leads the peers to recommend, UNJ needs to properly assess the workload per credit and implement their results in the curriculum accordingly.	https://drive.google.com/drive/folders/1EMpb37fJZlCp_LYPic_IgH_C0dCg1Ajh?usp=share_link
	As mentioned in the criterion before, the peers see discrepancies in the lived practice of the length of the internships. This also regards the workload of the internships. Each internship is eligible for two SKS credits (three ECTS), equivalent to 170 hours (duration of 1 month). In the opinion of the peers, the workload of two SKS might be adequate for the working for 2 days a week for one month, which represents only the minimum duration of the internship. However, if longer internships are common, the higher workload is not rewarded with a higher amount of credits. The module descriptions of both internships were not included in the module handbooks of each programme and could thus not clarify if further regulations are in place. The peers therefore gain the impression the duration and workload of the internship are not properly formalized. **Therefore,**	1. We will conduct an assessment to evaluate the workload of each student by giving the instrument at the end of semester 2. Faculty of Engineering routinely to carry out internal quality audits by referring to eight educational standards in accordance with the SN-DIKTI (Directorate of Higher Education) Guidelines and UNJ Quality Standards Guidelines.

No	Peers Comment	HEI Answer
	the peers recommend standardizing the duration of the internship and to assign the adequate amount of credits to the workload of the entire module.	
	In addition, the regulations of both duration and assigned credits need to be included in the module handbooks of all programmers under review and need to be further clearly communicated with the stakeholders. The curriculum should be adapted accordingly following the proper assessment of the workload of the internship and the courses (particularly the individual learning period).	We agree with the peers. We plan to Focus Group Discussion with stakeholders and adapted accordingly following the proper assessment of the workload of the internship and the courses. For the determination and evaluation of the module handbooks carried out by the Science Field Group (KBI), Quality Assurance Team on program study level (TPJM), and Quality Assurance Team on Faculty level (GPJM), and FGDs were conducted with stakeholders.
	The peers noticed the average study time is often exceeding this period. In the opinion of the peers, it seems the workload of the students in the programmes under review is exceptionally high. Considering the long working hours per semester and the amount of 20 SKS, the peers consider a discrepancy between the numbers of assigned credits and the total workload of each module. The peers consider a specific focus has to be put on the individual learning time per credit, which could easily exceed the presumed 60 min per week per credit. This leads the peers to recommend, UNJ needs to properly assess	The responses of that statements had been agree by Quality Assurance Team on Faculty level (GPJM)

No	Peers Comment	HEI Answer
	the workload per credit and implement their results in the curriculum accordingly.	
	In the opinion of the peers, the workload of two SKS might be adequate for the working for 2 days a week for one month, which represents only the minimum duration of the internship. The peers therefore gain the impression the duration and workload of the internship are not properly formalized. Therefore, the peers recommend to standardize the duration of the internship and to assign the adequate amount of credits to the workload of the entire module.	In Building Engineering Education Study Program, Internship has 4 credit points with duration of 4 months (680 minutes per week) and practice teaching skills has 2 credit points with duration of 4 months (2 days per week). As per 2021, Faculty of Engineering given other options for both internships (internship and practice teaching skills) in format of 20 credit points with duration of 6 months (5 days per week, 1 day 8 hours). For the Internship and Practice Teaching Skills Guidance can be seen through: Additional Document for ASIIN There are 2 (two) guidelines for internships consists of: general guidelines from universities and specific guidelines by study programme because there are several adjustments that are fit to characteristic of the study program. The guidelines and curriculum documents for the internship program are the result of a link and match with the industry, PT Wijaya Karya (Persero) Tbk. The internship document has also produced the Intelectual Copy Right (HKI) and The Reward by Indonesia World Record Museum (MURI). The following is proof of acceptance of HKI and MURI which is also the result of collaboration between study programs and industry.

E **Comment of the Higher Education Institution (15.11.2022)**

No	Peers Comment	HEI Answer
		  (News of BEE and WIKA on National News Outlet) (News of BEE and WIKA on BEE Website)

No	Peers Comment	HEI Answer
		The Guidelines of Internship Industry (PKL) and Teaching Practice (PKM) (still processing to translate) can see on link below: Additional Document for ASIIN
	the peers questioned further if one month represents sufficient time for the students to apply and learn their practical skills. Still, the peers consider the practical aspect of the internship of outstanding importance and therefore strongly recommend to extent the duration of the internship. It is suggested, the students should be allowed to decide themselves, if they want to extend the period spend in their internship at the industry or at the (vocational) schools.	Thank you for the feedback, module handbook of BEE Study Program can be seen through: Additional Document for ASIIN
	In addition, the regulations of both duration and assigned credits need to be included in the module handbooks of all programmes under review and need to be further clearly communicated with the stakeholders.	For the variation of teaching methods according to the government regulation for courses are Project Base Learning (PBL) and Case Based Learning (CBL). Details can be seen on the module handbook through: Additional Document for ASIIN
	Criterion 2.3 The peers notice the described variety of teaching methods is not integrated in the module handbooks. Therefore, the peers recommend improving the module handbooks recording all teaching methods applied in each module. The current situation is not transparent towards the students, who are entitled to a precise description of all teaching methods applied in each module.	All of the study programme are revised and improved the module handbooks and can be seen in this link. https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link

No	Peers Comment	HEI Answer
	The peers notice the described variety of teaching methods is not integrated in the mod-ule handbooks. Therefore, the peers recommend improving the module hand-books re-cording all teaching methods ap-plied in each module. The current situation is not transparent towards the students, who are entitled to a precise description of all teaching methods applied in each module.	Thank you for the response, the course teaching method module has been improved in the following link. The document is available on column beside 1. Modul Description - Google Drive https://drive.google.com/drive/folders/1u8eQf-pWp0lK35GwsEbbopld-5ObN4Hj?usp=share_link
4.	**Criterion 3** The peers note the descriptions of the exams in the module handbooks of all programmes do not match the descriptions in the SAR.	Thanks for peer's comment. We apologize about state-ment exam (essay) for all SAR. HEI are revised and improved exam method (Essay) in the module handbooks and can be seen in this link.
	The peers note the descriptions of the exams in the module handbooks of all programmes do not match the descriptions in the SAR. Currently, the handbooks label all written ex-ams as "essays." The peers ask the teaching staff to clarify their examination methods and if they represent an essay (a written exam). The teaching staff explains to the peers, they include a large variety of exami-nation methods in their modules. These range from written and oral exams, presen-tations to practical work. The teaching staff mentions, the examination methods are cho-sen based on the content of the modules. Written examinations might be a part of an exam, but the exams often also contain cal-culations, proofs, algorithms and pro-	following link. https://drive.google.com/drive/fold-ers/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=shar-ing https://drive.google.com/drive/folders/1u8eQf-pWp0lK35GwsEbbopld-5ObN4Hj?usp=share_link https://drive.google.com/drive/fold-ers/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link

No	Peers Comment	HEI Answer
	grammes and should therefore not be labeled as an “essay”. The peers agree that the module handbooks need to reflect the variety of examinations and the staff confirmed to adapt the module handbook accordingly. In addition to the missing variety of examination forms, the peer noticed an assessment system for practical work/modules is also not included in the module handbooks. The staff explained to the peers, that lab report is considered in the calculation of the grade next to the practical skill rated by the lecturer in a 15-20 min demonstration of the student, which needs to be added to the module descriptions. In the opinion of the peers, the examination rules are organized quite informal and not transparent to the students. Therefore, the peers request a more formal version of the exam variety that is also bindingly reflected in the module handbooks of all study programmes.	
	In addition to the missing variety of examination forms, the peer noticed an assessment system for practical work/modules is also not included in the module handbooks. The staff explained to the peers, that lab report is considered in the calculation of the grade next to the practical skill rated by the lecturer in a 15-20 min demonstration of the student, which needs to be added to the module descriptions. In the opinion of the peers, the examination rules are organized quite informal and not transparent to the students. Therefore, the peers request a more formal version of the exam variety that is also bindingly	All study programare ready improve the module handbooks due to the missing variety examination forms

No	Peers Comment	HEI Answer
	reflected in the module handbooks of all study programmes.	
	Criterion 4.1 After reviewing the documents, the peers note that the student to staff ratio is very high (one lecturer to 25-30 students) Therefore, the peers recommend for all study programmes to aim to reduce the lecturer-student-ratio to meet the national guidelines in order to ensure the quality of mentoring, teaching and student learning.	Thank you for the response. The needs of lecturers have been mapped to overcome this. Efforts to reduce the lecturer-student ratio in order to meet the national standard of 1:20 can be done in two ways, first by increasing lecturer resources and reducing the number of students accepted. The most appropriate step is to add lecturer resources. HEI has compiled for the next few years namely: • Staff recruitment (attached is the HR mapping document at the Faculty of Engineering) • Teaching Practitioners • Collaborative teaching across study programs FT has a plan to improve PhD become Professor and collaboration research with abroad universities. Building Engineering Education study programme is currently sending 3 lecturers for further doctoral studies, one of which is at Tokyo university. https://drive.google.com/drive/folders/1HY8T-Mspy-bJezJBoiOQqCYU9RwxGYmKi?usp=share_link
	Criterion 4.3 Therefore, the peers strongly support the HEI's plans and actions to modernize the infrastructure and recommend expanding and modernizing the technical equipment.	The Faculty of Engineering always to strive for infrastructure development by allocating a cost calculate every year for each study program in updating their equipment.

No	Peers Comment	HEI Answer
		The equipment data for each study program is continuously updated based on suggestions from each study program according to available cost. In addition, the Mechanical Engineering Education study program received grants from the industry consist of several industrial machine tools that can be used for student practice and lecturer research in laboratories. https://drive.google.com/drive/folders/1HY8T-Mspy-bJezJBoiOQqCYU9RwxGYmKi?usp=sharing
5	**Criterion 5.1** The peers closely examined the module handbooks of all study programmes and found several inaccuracies within single modules. First, the teaching methodologies were not fully listed in the module handbooks. The staff confirmed a greater variety of teaching methods were used in the classrooms and laboratories than included in the module handbooks. In the staff's opinion, modifications in the teaching methods are applied to accommodate the special needs of each class and its students to achieve the best learning outcomes. Nevertheless, the peers consider this practice informal and not transparent, therefore they insist to update the module descriptions in the handbooks to resemble the methods used in the classroom. Furthermore, the information on the examination methods is not in accord with the methods used (see criterion 3). The lecturers deliberately adapt the examination system informally if considered necessary for each	All of the study programme are revised the module handbooks according to peers in this link https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link

No	Peers Comment	HEI Answer
	class. However, the peers agreed, all examination methods and grading criteria need to be clearly stated in the module handbook to be transparent for everyone. This refers particularly to the grading systems of laboratory classes and workshops.	
	Furthermore, the information on the examination methods is not in accord with the methods used (see criterion 3). The lecturers deliberately adapt the examination system informally if considered necessary for each class. However, the peers agreed, all examination methods and grading criteria need to be clearly stated in the module handbook to be transparent for everyone. This refers particularly to the grading systems of laboratory classes and workshops.	The entire of examination methods of all the study programme will be adjusted to the teaching method has been corrected in the link https://drive.google.com/drive/folders/1u8eQf-pWp0lK35GwsEbbopld-5ObN4Hj?usp=share_link https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link
	Criterion 5.2 The peers are satisfied with this version of the diploma and diploma supplement. However, they noted inconsistencies regarding the name of the programme (see criterion 1.2) and the duration of the programmes (see criterion 2.2). While different translations of the programme names appear between the SAR and the diploma supplement, the duration varies between four academic years in the SAR to four and five academic years in the diploma supplement. During the discussion with the peers, the HEI agreed to check the entire SAR and correct all to a consistent use of one translation only for each	All of study programme are revised and can be seen in this link Attachment: Certificate of Degree and SKPI (Reference of Degree Supplement) https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link

No	Peers Comment	HEI Answer
	programme. The peers appreciate this and require that the titles and the duration of the programmes must be consistent in all documents including the Diploma Supplement.	
	Criterion 5.3 As illustrated in criterion 2.1 of this report, the peers notice a discrepancy between the official duration of the internship based on the SAR and the actual internships carried out by the students. Thus, they insist on formalizing all relevant rules of both the vocational and industry internship in terms of duration, workload, etc. These rules also must be made transparently to all stakeholders.	Currently, the Faculty of Engineering has a Chancellor's Decree (SK Rektor) regarding PKM (Teaching Practice) and PKL (Internship Industry) guidelines published on 2021 (data attached). The standards in the SK Rektor about PKL/PKM can be implemented by all study programs. In accordance with the Chancellor's Decree number: 951/UN39/KM.03.05/2021 https://drive.google.com/file/d/1kLriZaMWJljA8wh7Nki-iaG-hbkkQU0C-/view?usp=sharing
6	**Criterion 6** Thus, the peers suggest re-assessing the workload for the students on a regular basis and adapting the curriculum if necessary. The number of credits in the module handbooks need to be updated accordingly.	Thank you for your suggestions. Currently, UNJ has followed the SN-DIKTI (National Standards by Directorate General of Higher Education) in terms of undergraduate qualifications. Every 4 years, we evaluate and update the curriculum. Rules of curriculum are discussed in the Academic Guide Line.
	The HEI also monitors their student progress until graduation. **The dropout rate of students in all programmes is low with the exception of the Informatics and Computer Engineering programme**. During the last three years, in this program only about 54% of the students graduated within the observed period (2019 to 2021).	Thank you for your response. The meaning of table E.6.5. is not showing a number of drop out 42.7%, but the truth is that the average graduation rate on time is 57.33%.

No	Peers Comment	HEI Answer
	Further issues with the module handbooks are the incomplete and standardized descriptions of each module. The peers note errors in the variety of examination methods, missing regulations for grading practical work as well as incomplete descriptions of the teaching methods integrated into each module. Furthermore, the mandatory internships are not included as an individual module in the handbooks. The teaching staff has confirmed errors in the module handbooks. The peers recommend, it is necessary to update the module handbooks to reflect the conditions in the classroom in order for the students to prepare for the module accordingly.	All of study programs already improve the module handbooks and can be seen at the link besides. https://drive.google.com/drive/folders/1XC7uHNE5WtcT-I2ciWpkOkKMff3ul2K2?usp=sharing https://drive.google.com/drive/folders/1ArTM8xkNnesnzmSUb8Ox-bgQ0dbk4whg7?usp=share_link

F Summary: Peer recommendations (17.11.2022)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Electronics Engineering Education	With requirements for one year	30.09.2028
Ba Electrical Engineering Education	With requirements for one year	30.09.2028

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Mechanical Engineering Education	With requirements for one year	30.09.2028
Ba Building Engineering Education	With requirements for one year	30.09.2028
Ba Informatics and Computer Engineering Education	With requirements for one year	30.09.2028

Requirements

For all degree programmes

A 1. (ASIIN 2.1,5.3) Establish formal regulations for the internships regarding length and workload and make them transparent to all stakeholders.

A 2. (ASIIN 5.1) Prepare new module descriptions including the workload/ECTS points and the calculation of the final grade from different types of examinations. The edited module descriptions must be made accessible for all stakeholders.

A 3. (ASIIN 5.1) Include descriptions to the module handbooks regarding the duration, organization, grading and content of the internships at both schools and industry.

A 4. (ASIIN 5.2) Match the titles and duration of the programmes in all documents including the Diploma Supplement.

A 5. (ASIIN 6) Assess the students' workload formally, evaluate it regularly and adapt it if necessary, in respect to the number of ECTS points given for the respective module.

Recommendations

For all degree programmes

E 1. (ASIIN 2.1) It is recommended to extend the length of the teaching or industry internship.

E 2. (ASIIN 3.1) It is recommended to expand the variety of examination forms.

E 3. (ASIIN 4.1) It is recommended to adjust the student-teacher ratio to the government regulations.

E 4. (ASIIN 4.3) It is recommended to expand and modernize the technical equipment.

E 5. (ASIIN 4.3) It is recommended that students should access to further international journals.

For the Bachelor's degree programme: *Informatics and Computer Engineering Education*

E 6. (ASIIN 1.2) It is recommended to change the title into "Informatics and Computer Education".

G Comment of the Technical Committees

Technical Committee 01 - Mechanical Engineering (21.11.2022)

Assessment and analysis for the award of the ASIIN seal:

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	Maximum duration of accreditation
Ba Mechanical Engineering Education	With requirements for one year	30.09.2028

Technical Committee 02 - Electrical Engineering/Information Technology (25.11.2022)

Assessment and analysis for the award of the ASIIN seal:

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

The Technical Committee 02 – Electrical Engineering/Information Technology recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Electronics Engineering Education	With requirements for one year	30.09.2028
Ba Electrical Engineering Education	With requirements for one year	30.09.2028
Ba Informatics and Computer Engineering Education	With requirements for one year	30.09.2028

Technical Committee 03 - Civil Engineering, Geodesy and Architecture (21.11.2022)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accreditation procedure and point out that there is probably a typo in the requirement 3 and replace model with module. Otherwise, the TC follows the assessment of the peers without any changes.

The Technical Committee 03 – Civil Engineering, Geodesy and Architecture recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Building Engineering Education	With requirements for one year	30.09.2028

Requirements

For all degree programmes

A 3. (ASIIN 5.1) Include descriptions to the module handbooks regarding the duration, organization, grading and content of the internships at both schools and industry.

Technical Committee 04 - Informatics/Computer Science (29.11.2022)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accreditation and concludes, due to the number and severity of the requirements, the processes should be put on hold until the university has submitted their revised documents. In the opinion of the Technical Committee, fundamental information and evidences were not submitted prior the on-site visit, therefore an adequate assessment of the program(s) was unfeasible. The Technical Committee highlights requirement A2 in this regard, which in their opinion represents a condition for the resumption of the accreditation. In addition, the recommendation E needs to be upgraded as an additional requirement to ensure the content and the title of all study programs are in agreement. Changes in the concept of the recommendation A5 are also necessary because the current version does not allow an evaluation after one year. Instead, the Technical Committee suggests using the phrase “Establish a process.” The Technical Committee further declares to withdraw the recommendation E3 since the accreditation of the ASIIN seal is in no relation to government regulations concerning the ratio of lecturers to students and the Technical Committee considers the current situation as acceptable. The Technical Committee further states to rephrase the requirement A3 and A4 as well as the recommendation E5.

The Technical Committee 04 – Informatics/Computer Science recommends the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Ba Informatics and Computer Engineering Education	Suspension	30.09.2028

Conditions for resumption of the procedure

For all degree programmes

V1. (ASIIN 5.1) Prepare new module descriptions including the workload/ECTS points and the calculation of the final grade. The edited module descriptions must be made accessible for all stakeholders.

Requirements

For all degree programmes

A 1. (ASIIN 2.1, 5.3) Establish formal regulations for the internships regarding length and workload and make them transparent to all stakeholders.

A 2. (ASIIN 5.1) Include descriptions to the module handbooks regarding the duration, organization, grading and content of the internships at both schools and industry.

A 3. (ASIIN 5.2) Unify the titles and durations of the programmes in all documents including the Diploma Supplement.

A 4. (ASIIN 6) Establish a process to assess the students' workload formally, evaluate it regularly and adapt it if necessary, in respect to the number of ECTS points given for the respective module.

For the Bachelor's degree programme: Informatics and Computer Engineering Education

A 5. (ASIIN 1.2) The title of the study programme must be in accordance with the study content.

Recommendations

For all degree programmes

E 1. (ASIIN 2.1) It is recommended to extend the length of the teaching or industry internship.

E 2. (ASIIN 3.1) It is recommended to expand the variety of examination forms.

E 3. (ASIIN 4.3) It is recommended to expand and modernize the technical equipment.

E 4. (ASIIN 4.3) It is recommended that students should get access to further international journals.

H Decision of the Accreditation Commission (09.12.2022)

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

The accreditation comission follows the suggestions of the technical committee 03 as well as the rephrasing of the additional rephrasing of the requirements A4 and A5 and the recommendation of E3. After reviewing further changes suggested by the technical committee 04, the accreditation commision decides to follow the original assessment of the peer panel regarding the requirement A2 and the recommendation E6 since it cannot observe an offset in the documents submitted by all study programs.

The Accreditation Commission decides to award the following seals:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**
Ba Electronics Engineering Education	With requirements for one year	30.09.2028
Ba Electrical Engineering Education	With requirements for one year	30.09.2028
Ba Mechanical Engineering Education	With requirements for one year	30.09.2028
Ba Building Engineering Education	With requirements for one year	30.09.2028
Ba Informatics and Computer Engineering Education	With requirements for one year	30.09.2028

Requirements

For all degree programmes

A 1. (ASIIN 2.1,5.3) Establish formal regulations for the internships regarding length and workload and make them transparent to all stakeholders.

A 2. (ASIIN 5.1) Prepare new module descriptions including the workload/ECTS points and the calculation of the final grade from different types of examinations. The edited module descriptions have to be made accessible for all stakeholders.

A 3. (ASIIN 5.1) Include descriptions to the module handbooks regarding the duration, organization, grading and content of the internships at both schools and industry.

A 4. (ASIIN 5.2) Unify the titles and durations of the programmes in all documents including the Diploma Supplement.

A 5. (ASIIN 6) Establish a process to assess the students' workload formally, evaluate it regularly and adapt it if necessary, in respect to the number of ECTS points given for the respective module.

Recommendations

For all degree programmes

E 1. (ASIIN 2.1) It is recommended to extend the length of the teaching or industry internship.

E 2. (ASIIN 3.1) It is recommended to expand the variety of examination forms.

E 3. (ASIIN 4.1) It is recommended to adjust the student-teacher ratio to the government regulations.

E 4. (ASIIN 4.3) It is recommended to expand and modernize the technical equipment.

E 5. (ASIIN 4.3) It is recommended that students should get access to further international journals.

For the Bachelor's degree programme: Informatics and Computer Engineering Education

E 6. (ASIIN 1.2) It is recommended to change the title into "Informatics and Computer Science Education"

I Fulfilment of Requirements (08.12.2023)

Requirements

For all degree programmes

A 6. (ASIIN 2.1,5.3) Establish formal regulations for the internships regarding length and workload and make them transparent to all stakeholders.

Initial Treatment	
Experts	Fulfilled. Justification: UNJ has presented a new document on the regulation for internships. The document serves as a technical manual and explains the workload of an internship taken within the MBKM programme. It defines the internship with six Indonesian credits (equal to 9 ECTS credit points) and a duration of six months. The document furthermore gives information on the intended learning outcomes and assessment of the internship. The experts consider the new regulations as sufficient if these regulations are available to students.
TC 01	Fulfilled Justification: The TC follows the vote of the experts.
TC 02	Fulfilled Justification: The TC follows the vote of the experts.
TC 03	Fulfilled. Justification: The TC 03 follows the assessment of the peers without any changes.
TC 04	Fulfilled Justification: The TC follows the experts' assessment.
AC	Fulfilled. The Accreditation Commission follows the vote of the experts and the Technical Committees

A 7. (ASIIN 5.1) Prepare new module descriptions including the workload/ECTS points and the calculation of the final grade from different types of examinations. The edited module descriptions have to be made accessible for all stakeholders.

Initial Treatment	
Experts	Fulfilled. Justification: UNJ has submitted new module handbook for each study programme. The new module handbooks list the workload in Indonesian credit points as well as the ECTS conversion. The forms of assessment are differentiated in the new version. The presented

	assessment forms in one module are weighted with percentages for the final grade.
TC 01	Fulfilled Justification: The TC follows the vote of the experts.
TC 02	Fulfilled Justification: The TC follows the vote of the experts.
TC 03	Fulfilled. Justification: The TC 03 follows the assessment of the peers without any changes.
TC 04	Fulfilled Justification: The TC follows the experts' assessment.
AC	Fulfilled. The Accreditation Commission follows the vote of the experts and the Technical Committees

A 8. (ASIIN 5.1) Include descriptions to the module handbooks regarding the duration, organization, grading and content of the internships at both schools and industry.

Initial Treatment	
Experts	Fulfilled. Justification: The new module handbooks do not contain a module description for the internship. However, UNJ has presented an additional document on the regulations, learning outcomes and assessment methods of the internship.
TC 01	Fulfilled Justification: The TC follows the vote of the experts.
TC 02	Fulfilled Justification: The TC follows the vote of the experts.
TC 03	Fulfilled. Justification: The TC 03 follows the assessment of the peers without any changes.
TC 04	Fulfilled Justification: The TC follows the experts' assessment.
AC	Fulfilled. The Accreditation Commission follows the vote of the experts and the Technical Committees

A 9. (ASIIN 5.2) Unify the titles and durations of the programmes in all documents including the Diploma Supplement.

Initial Treatment	
Experts	Fullfilled.

	Justification: New diploma supplements were submitted for all the study programmes. The names of the study programmes in the diploma supplement match the names during the accreditation procedure as well as the university webpage.
TC 01	Fulfilled Justification: The TC follows the vote of the experts.
TC 02	Fulfilled Vote: unanimous Justification: The TC follows the vote of the experts.
TC 03	Fulfilled. Justification: The TC 03 follows the assessment of the peers without any changes.
TC 04	Fulfilled Justification: The TC follows the experts' assessment.
AC	Fulfilled. The Accreditation Commission follows the vote of the experts and the Technical Committees.

A 10. (ASIIN 6) Establish a process to assess the students' workload formally, evaluate it regularly and adapt it if necessary, in respect to the number of ECTS points given for the respective module.

Initial Treatment	
Experts	Fulfilled (3); not (completely) fulfilled (2) Justification: UNJ has submitted an official document illustrating defining the amount of workload for one credit point based on regulations of the Indonesian Ministry of Education and Culture. Additional material gives an exemplary overview of student surveys calculating their workload in for one module. Categories include class meetings, reading assignments, writing assignments, other assignments, project-based assignments and exams. UNJ has provided diagrams summarizing the data for each of the study programmes. The expert panel remarks that this survey results are difficult to understand for outsiders. It is unclear to the experts, how the workload estimates for the different components of a module in the questionnaires are computed. For a valid result these numbers should be derived from a detailed list of working hours per student per semester. In addition, the experts had difficulties to understand how the workload analysis for modules/courses were transferred to the study programme.

	[The university did not include a reference number for us to compare the results to, therefore it is hard to conclude much from the survey results. Despite that, the compiled survey sheets show that the students' perceived workload are similar or just slightly under the designed workload of the course/module, hence the experts mark this point as not completely fulfilled.]
TC 01	Fulfilled. Justification: It can understand that the survey on student workload appears confusing to third parties. However, as it is primarily the university to work with the survey, the committee agrees with the majority of auditors and considers the requirement to be fulfilled. However, he recommends that the university be advised to make the evaluation of student workload more transparent for third parties
TC 02	Not (completely) fulfilled Justification: The TC notes that the University has provided documents, but as one of the experts pointed out, it does not seem entirely clear from the documents how the workload for the different components of a module is calculated based on the survey results. They suggest that UNJ provides clearer and more accurate documentation of the process.
TC 03	Fulfilled. Justification: The TC 03 follows the assessment of the majority of the peers and suggests to add the following recommendation: E 1. It is recommended to make all statistical markers for the survey available for all stakeholders.
TC 04	Fulfilled Justification: The TC agrees with the majority of the experts and considers the requirement to be fulfilled. However, the TC is in favour of giving the university a hint that more comprehensible documents should be provided
AC	Fulfilled. The Accreditation Commission discusses the different statements by the experts and the Technical Committees. Although the Accreditation Commission confirms that the submitted documentation does not provide a clear overview of the workload analysis of the five study programmes, it identifies that a mechanims has put in place to analyse the students' workload. The Accreddita-tion Commission emphasizes that the analysis of the workload should be comprehensible for stakeholders and third parties-Neverthless, the Accreditation Commission considers the requirement as fullfilled.

Decision of the Accreditation Commission (08.12.2023)

The Accreditation Commission discusses the fullfillment of the requirements. In paritcular, it focuses on the requirement A5

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Electronic Engineering Education	All requirements fulfilled	-	30.09.2028
Ba Electrical Engineering Education	All requirements fulfilled	-	30.09.2028
Ba Mechanical Engineering Education	All requirements fulfilled	-	30.09.2028
Ba Buildings Engineering Education	All requirements fulfilled	-	30.09.2028
Ba Informatics and Engineering Education	All requirements fulfilled	-	30.09.2028

Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Electronics Engineering Education:

"By the vision and mission of the Faculty of Engineering thus the objectives of the Electronics Engineering Education Programme are formulated as follows,

1.1.1. Programme Education Objective (PEO)

Produce graduates who:

1. Able to improve professional service in the field of education and electronic engineering.
2. Able to excel in improving their field of knowledge including the ability to communicate scientifically and cooperate with other disciplines.
3. Able to develop professional excellence in the broader fields in society including teamwork, leadership, safety, ethics, service, economy, environmental awareness, and professional organization.
4. Equipped with basic skills to solve various problems in society through scientific reasoning especially in education and Electronics engineering fields.

1.1.2. Programme Learning Outcomes (PLOs)

This programme gives chance to the graduates to:

1. Apply the knowledge and the teaching skill in Electronics engineering education
2. Apply the basic knowledge in solving Electronics engineering problems
3. Apply the Electronic engineering competence to solve engineering problems
1. Perform managerial skills, effective communication, and teamwork building in a professional career.
4. Act with responsibility, professional ethics, and awareness of work-related health and safety.
2. Apply the self-development attitude through education, research, professionalism, and entrepreneurship as a long-life learner at both national and international levels.

1.1.3. Intended Learning Outcomes (ILOs)

To achieve the set PLO, ILO is needed to bridge the achievement of CPMK. ILO then will be explained as Attitude, Knowledge, Skill, and Competence in line with Indonesian Qualification Framework (IQF) Level 6. Intended learning outcomes are shown in Table A1.1."

Tabel A1.1 Intended Learning Outcome

Area	Code	Learning outcomes
Attitude (A)	A1	Having faith in God Almighty and understand Pancasila dan UUD 45 as the basic of the state and have honesty and responsibility for a professional career.
	A2	Be able to collaborate as a team, communicate effectively both oral and written in an academic, professional ethics and professional environment.
	A3	To demonstrate high patience attitude and adapt to future challenge as long life learner.
Knowledge and Understanding (K)	K1	To apply mathematics, basic science and basic engineering to design and analysis for solving problems in electronics engineering.
	K2	To apply electronics engineering principles to solve problems in electronic engineering systems.
	K3	Understand, plan, implement and evaluate the learning process of electronic engineering education
Engineering and Education Skill (S)	S1	Able to design principles and application electronic engineering systems.
	S2	Able to analyze work principles and application of electronic engineering systems
	S3	Able to find alternative solutions and problem-solving in the field of electronics engineering.
	S4	Able to identify the characteristics of students for learning electronic engineering.
	S5	Able to select and apply learning approaches and models, teaching materials, and assessments for learning electronic engineering.
	S6	Able to improve the quality of learning based on process assessment and assessment of learning outcomes in electronic engineering.
Competence (C)	C1	To apply new technology in the field of engineering by considering technical standards, aspects of performance, reliability, applicability and sustainability.
	C2	Able to manage and develop process, operation systems, and equipment by considering the technical and non-technical effects of industrial activities in electronics engineering.
	C3	Able to plan, implement and evaluate electronic engineering education curriculum.

The following **curriculum** is presented:

APPENDIX A.3 MATRIX COURSE – PLO

Table A1.4 Matrix COURSE-PLO

No	MK	PLO					
		PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
Semester 1							
1	Pancasila					√	
2	English				√		
3	Basic Educational Science	√					
4	Mathematics I		√				
5	Physics I		√				
6	Introduction Electrical Engineering			√			
7	Electrical Measurement			√			
8	Electrical Circuit I			√			
9	Mechanics Workshop			√			
Semester 2							
1	Civic Science				√		
2	Educational Psychology	√					
3	Mathematics II		√				
4	Physics II		√				
5	Electrical Materials			√			
6	Technical Drawing Practice			√			
7	Electrical Circuit II			√			
8	Electronics I			√			
9	Logic Circuit			√			
10	Electrical Circuit Practice			√			
11	Electronics I Practice			√			
Semester 3							
1	Religious education					√	
2	Learning and Teaching Theories		√				
3	Science Philosophy		√				
4	Mathematics III		√				
5	Physics III			√			
6	Electronics II			√			
7	Algorithm and Programming			√			
8	Digital Electronics			√			
9	Electronics II Practice			√			
10	Digital Electronics Practice			√			
Semester 4							
1	Indonesian Language				√		
2	Basic Culture Social Science					√	

3	Educational Profession	√					
4	Statistics		√				
5	Electronics III			√			
6	Computer Programming II			√			
7	Electromagnetic Field Theory			√			
8	Data Communication			√			
9	System Engineering			√			
10	Telecommunication System			√			
11	Electronics III Practice			√			
12	Data Communication Practice			√			
Semester 5 (Communication Electronics Specialization Courses) Major 1							
1	Research Methods	√					
2	Industrial Electronics			√			
3	Control System			√			
4	Microprocessor System			√			
5	Signal Processing Techniques			√			
6	Industrial Electronics Practice			√			
7	Microprocessor System Practice			√			
8	Control System Practice			√			
9	Radio Communication Technology			√			
10	Radio Communication Practice			√			
11	Industrial Management				√		
12	Design Instructional	√					
13	Instructional Competency	√					
Semester 5 (Control Electronics Specialization Course) Major 2							
1	Research Methods						√
2	Industrial Electronics			√			
3	Control System			√			
4	Microprocessor System			√			
5	Signal Processing Techniques			√			
6	Industrial Electronics Practice			√			
7	Microprocessor System Practice			√			
8	Control System Practice			√			
9	Interface Techniques			√			
10	Interface Techniques Practice			√			
11	Industrial Management				√		
12	Design Instructional	√					
13	Instructional Competency	√					
Semester 5 (Audio Video Electronics Specialization Course) Major 3							
1	Research Methods						√

2	Industrial Electronics			√			
3	Control System			√			
4	Microprocessor System			√			
5	Signal Processing Techniques			√			
6	Industrial Electronics Practice			√			
7	Microprocessor System Practice			√			
8	Control System Practice			√			
9	Audio Video System Circuit			√			
10	Audio Video System Circuit Practice			√			
11	Industrial Management				√		
12	Design Instructional	√					
13	Instructional Competency	√					
Semester 6 (Communication Electronics Specialization Course) Major 1							
1	Industrial Practice				√	√	
2	Transmission Line			√			
3	Communication Electronic Circuit			√			
4	Antenna and Wave Propagation			√			
5	Optical Communication System			√			
6	Satellite Communication			√			
7	Communication Electronic Circuit Practice			√			
8	Antenna and Wave Propagation Practice			√			
9	Teaching Evaluation	√					
Semester 6 (Control Electronics Specialization Course) 2							
1	Industrial Practice				√	√	
2	PLC and Control System			√			
3	Sensor and Transducer			√			
4	Microcontroller System			√			
5	Pneumatic Control Techniques			√			
6	PLC Practice			√			
7	Pneumatic Control Techniques Practice			√			
8	Microcontroller System Practice			√			
9	Teaching Evaluation	√					
Semester 6 (Audio Video Electronics Specialization Course) Major 3							
1	Industrial Practice				√	√	
2	Multimedia System			√			
3	Audio Video Technology			√			

4	Radio Communication Technology			√			
5	Audio Video System Design and Testing			√			
6	Multimedia System Practice			√			
7	Audio Video Technology Practice			√			
8	Audio Video System Design and Testing Practice			√			
9	Teaching Evaluation	√					
Semester 7 (Communication Electronics Specialization Courses) Major 1							
1	Thesis Proposal Seminar						√
2	Transmission System Design			√			
3	Mobile Communication			√			
4	Practice Teaching Skills	√					
5	Elective Courses			√			
Semester 7 (Control Electronics Specialization Course) Major 2							
1	Thesis Proposal Seminar						√
2	Power Electronics			√			
3	Industrial Instrumentation			√			
4	Industrial Instrumentation Practice	√					
5	Practice Teaching Skills			√			
Semester 7 (Audio Video Electronics Specialization Course) Major 3							
1	Thesis Proposal Seminar						√
2	Broadcasting System			√			
3	Digital Image Processing			√			
4	Digital Image Processing Practice			√			
5	Practice Teaching Skills	√					
6	Elective Courses			√			
Semester 8							
1	Final Project						√

According to the Self-Assessment Report, the following objectives and learning out-comes (intended qualifications profile) shall be achieved by the Bachelor's degree programme Electrical Engineering Education:

"1.1.1 Programme Educational Objectives

The objectives of the Electrical Engineering Education study programme include:

1. Have academic professional abilities, become a professional who is innovative, communicative, adaptive, competitive, and own leadership as well as lifelong learning. (PEO 1)
2. Have the ability to plan, implement, and evaluate electrical engineering education learning programmes professionally. (PEO 2)

3. Have competence in the field of electricity. (PEO 3)

1.1.2 Learning Outcomes

a. Programme Learning Outcomes (PLOs)

Based on the objectives of the study programme, the results of the learning programme can be described as follows:

Tabel. B.1.1 Program Learning Outcomes (PLOs)

Area	Code	Learning Outcome
Social	PLO 1	Able to apply religious attitudes, responsibility, leadership, communication skills, professionalism, and can work individually and collaborate in groups
	PLO 2	Able to apply logical, critical, systematic, innovative thinking, collaborative skills to build networks, self-development, and argue scientifically to solve career, community, nation, and global problems.
Knowledge and understanding	PLO 3	Possess a broad and deep understanding in the fields of basic, applied, and relevant engineering in the electricity sector.
Engineering analysis	PLO 4	Able to apply their expertise in conducting experiments and simulations in the electricity sector
Engineering design	PLO 5	Able to design content and applications in the field of electricity for technical engineering and engineering education curriculum
Engineering practice and product development	PLO 6	Able to apply knowledge to acquire practical and problem-solving skills through research, design, and product development analysis methodologies
Transferable skills	PLO 7	Possess basic skills in oral communication, building teamwork, and management skills, as well as an entrepreneurial mindset as a form of lifelong independent learning
	PLO 8	Able to design and apply electrical engineering learning based on pedagogical content knowledge technology (TPACK).

The relevance between PLO and PEO is the implementation of learning programme results that facilitates the embodiment of the programme objectives. Special subject criteria of Electrical Engineering Education were developed referring to the objectives of the education as well as the result of the learning. Special Subject Criteria (SSC) is stated as follows:"

Table B.1.2. SSC of Electrical Engineering Education

Educational objectives	Number of SSC	Learning outcomes
Knowledge and understanding	SSC 1	gained a broad and sound knowledge in mathematics, natural sciences, and engineering, enabling them to understand the complex phenomena peculiar to electrical engineering/information technology.
	SSC 2	gained an understanding of the broader multidisciplinary context of Engineering Sciences.
Engineering analysis	SSC 3	to select and apply actual modelling, calculating, and testing methods concerning their field of specialization.
	SSC 4	to make research of technical literature and other sources of information relating to given problems
	SSC 5	to design and run experiments and computer simulations and to explain the results
	SSC 6	to consult database systems, information on norms, guidelines ("codes of good practice"), and safety regulations for these purposes.
Engineering design	SSC 7	have unique abilities to develop analog and digital electric and electronic circuits, devices, and products
	SSC 8	control in their design works the use of elements like modelling, simulation, and tests as well as their integration in a problem-oriented way.
	SSC 9	are able to design products for the global market
	SSC 10	can apply their knowledge and understanding to acquire practical skills for problem-solving, for research tasks, and the design of systems and procedures.

Educational objectives	Number of SSC	Learning outcomes
Engineering practice and product development	SSC 11	have access to experience concerning possibilities and limits of the application of materials, computer-based model designs, systems, processes, and tools for the solution of problems when solving complex problems,
	SSC 12	know the practice and its demands in production plants,
	SSC 13	are capable of searching technical literature and other information sources,
	SSC 14	demonstrate awareness of the health, safety, and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context
	SSC 15	commit to professional ethics, responsibilities, and norms of engineering practice,
	SSC 16	use the appropriate scientific methods and new findings of the engineering and science environment in their practical work while taking into consideration the economic, ecological, technical, and social requirements
	SSC 17	are aware of the nontechnical effects of engineering activities
	SSC 18	are in the position to develop marketable products for the global market
Transferable skills	SSC 19	analyze and present technical contexts understandingly in their own and neighbour fields;
	SSC 20	operate on technical working tasks in a team and to coordinate it if necessary;
	SSC 21	demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations
	SSC 22	recognize the need for, and have the ability to engage in independent, life-long learning.

The following **curriculum** is presented:

Tabel B.1.6 Curriculum Structure Mapping towards PLO

Semester	Course Code	Courses	Credits	ETC S	Program Learning Outcomes							
					1	2	3	4	5	6	7	8
	0005-106-2	Civics	**2**	3	x							
	0005-210-2	Student Development Psychology	2	3	x	x					x	
	5005-410-2	Science Phylosophy	2	3		x	x					
	5115-075-3	Math I	3	4,5			x	x		x		
	5115-078-3	Physics I	3	4,5			x	x				
	5115-029-2	Electrical Materials	2	3			x					
	5115-042-2	Electrical Measurement	2	3				x				
	5115-033-2	Technical Drawing	2	3					x	x		
	5115-035-2	Introduction to Electrical Engineering	2	3			x					
I	5115-081-2	Mechanic Workshop	2	3			x			x		
		Total Credits	22									
	5115-111-2	Thermodynamics	2	3			x	x				
	0005-113-2	Introduction to Education	4	6							x	x
	5115-076-3	Math II	3	4,5			x	x		x		
	5115-079-3	Physics II	3	4,5				x				
	5115-084-2	Computer Programming	2	3			x					
	5115-003-3	Electrical Circuits I	3	4,5			x	x				
2	5115-045-3	Electrical Installation Engineering	3	4,5			x		x	x		
		Total Credits	20									
	0005112-2	Pancasila	**2**	3	x							
	0005-126-2	Basic Culture and Social Science*	2	3	x	x						
	0005-231-2	Professional Development in Education	2	3							x	x
	5115-077-3	Math III	3	3			x			x		
	5115-085-2	Electromagnetic Field	2	3			x	x				
	5115-080-2	Physics III	2	3			x					
	5115-037-2	Electrical Circuits II	2	3			x					
	5115-082-3	Electronics	3	4,5		x		x		x		
3	5115-083-2	Logic Circuits	2	3		x			x	x		
		Total Credits	20									
	0005-114-2	Indonesian Language	2	3		x					x	
	0005-113-2	English Language	2	3		x					x	
	5115-053-2	Regulatory Engineering	2	3				x	x			
	5115-050-2	Transformer	2	3			x			x		
	5115-086-3	Industrial Electronics	3	4,5			x	x	x			
	5115-044-2	Power Plant	2	3				x		x		
	5115-046-3	Direct Current Machine	3	4,5			x	x				
	0005-201-2	Research Methodology	2	3			x	x		x		
4	5005-018-2	Instructional Design	2	3								x
		Total Credits	20									
	5115-062-2	Power System Protection	2	3			x	x				
	5115-090-3	Programmable Logic Controller	3	4,5			x	x	x	x		
	0005-11x-3	Education of Religion	3	4,5	x	x						
	5115-054-2	Electrical Power Distribution	2	3			x	x		x		
	5005-014-2	Statistics	2	3			x	x		x		
	5115-049-2	Power Transmission	2	3			x		x			
	5115-055-3	Alternating Current Machine	3	4,5			x	x				
5	5005-019-2	Learning Evaluation	2	3			x	x				
		Total Credits	19									
	5115-092-3	Computer Utilization in Electrical Power System	3	4,5			x		x			
	5115-063-2	Electrical Power System Analysis	2	3			x	x				
	5115-072-2	Motor Settings	2	3			x	x		x		
	5115088-2	High Field Symptoms	2	3		x						
	5005-007-1	Physics Practicum	1							x		
	5115-073-2	Industrial Management	2	3							x	
	0005-214-4	Learning and Teaching Theories	4	6							x	x
	5005-020-2	Instructional Competency	2	3								x
6	0005-301-1	Elective Course I *	2	3								
7	5115-146-2	Entrepreneurship	2	3						x	x	

Semester	Course Code	Courses	Credits	ETCS	Program Learning Outcomes							
					1	2	3	4	5	6	7	8
	5115-019-2	Internship	2	3	x						x	
	5115-592-2	High Voltage Engineering	2	3			x					
	5115-140-2	Teaching Practice	2	3								x
	5005-304-1	Research Proposal Seminar	1	1,5	x	x	x	x	x	x	x	x
		Elective Course II *	2	3								
Electrical Power Plant Engineering Specialization												
	5115-107-2	Altemative Energy	2	3			x					
	5115-145-2	Turbine Power Plant	2	3			x	x				
	5115-118-2	Power Plant Unit Control Instruments	2	3			x			x		
	5115-119-2	Electrical Power Panel Unit Planning	2	3			x		x			
Transmission Engineering and Electrical Power Distribution Specialization												
	5115-120-2	High Voltage Equipment	2	3								
	5115-121-3	Planning of Electrical Power Lines from the Substation	2	3								
	5115-123-2	AC High Voltage Transmission	2	3			x	x	x			
	5115-124-2	DC High Voltage Transmission	2	3								
Electrical Power Installation Engineering Specialization												
	5115-125-2	Household Appliances Repair and Maintenance	2	3						x	x	
	5115-126-2	Illumination Techniques	2	3								
	5115-199-2	Electrical and Power Installation	2	3			x	x	x			
	5115-128-2	Custom Installation Design	2	3								
Industrial Automation Engineering Specialization												
	5115-133-2	Robotics	2	3			x		x			
	5115-073-2	Fuzzy Logic	2	3			x			x		
	5115-133-2	Electro Pneumatic Control System	2	3			x		x	x		
	5115-135-2	Microprocessor Based Control System	2	3			x		x	x		
Refrigeration Engineering Specialization												
	5115-112-2	Heat Transfer	2	3								
	5115-137-2	Refrigerant and Air Conditioning	2	3								
	5115-138-2	Spatial Air Condition System Planning	2	3								
	5115-139-2	Cooling System Maintenance	2	3								
			19									
	5005-402-4	Thesis *	4	6	x	x	x	x	x	x	x	x
	5005-403-1	Comprehensive Exam *	1	1,5	x	x	x	x	x	x	x	x
			5									
		Total	144									

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Mechanical Engineering Education:

1.1.1. Study Programme Objectives

Produce graduates who:

1. Able to foster and develop science and technology in the field of mechanical engineering education that can improve the quality of human life and the environment.
2. Able to advance and develop qualified, responsible, and independent professional people in the field of mechanical engineering education and have academic ethics oriented to scientific development.
3. Able to develop professional research and community service in the field of mechanical engineering education to develop science, technology, and art as well as answer problems in society.
4. Able to foster and develop cooperation with various institutions at home and abroad in the field of mechanical engineering education.
5. Able to grow and develop an entrepreneurial culture (technical entrepreneur).

1.1.2 Learning Outcomes

A. Programme Learning Outcomes (PLOs)

This programme provides opportunities for graduates:

1. Have high soft skills, managerial competence, and a passion for lifelong learning.
2. Have the ability to apply mathematics and basic science as well as other disciplines as a mechanical engineering vocational foundation to handle any professional work/project
3. Have critical and creative thinking in identifying, formulating, solving problems, and evaluating various problems in the field of Mechanical Engineering Education with the most appropriate and effective scientific method.
4. Have a reliable ability to design, manufacture, and operate machines.
5. Have a reliable ability to design, organize and evaluate the education and learning process in Mechanical Engineering Education.

The relationship between the learning outcome programme (PLO) and the Subject-Specific Criteria (SSC) of ASIIN is as follows: PLO-1 contains soft skills, managerial, and lifelong learning abilities, which are multidisciplinary skills (knowledge and understanding/SSC-1) and communication skills, managerial and lifelong learning (transferable skills/SSC-6). PLO-2 contains math and science skills in line with the criteria (knowledge and understanding/SSC-1) and problem solving on the engineering analysis criteria (SSC-2). PLO-3 contains the ability to think critically and creatively, which are the criteria for problem solving skills using the scientific method (engineering analysis/SSC-2) and the criteria for mastering engineering design skills (SSC-3). PLO-4 contains the ability to design and operate machines as criteria for the ability to practically understand design methods (engineering design /SSC-3) and be able to apply engine theory and practice (engineering practice/SSC-5). Meanwhile, PLO-5 contains the ability to design and evaluate mechanical engineering learning, which is a criterion for multidisciplinary ability (knowledge and understanding/SSC-1) and communication and knowledge transfer skills in mechanical engineering (transferable skills/SSC-6).

B. Intended Learning Outcomes (ILOs)

To achieve the PLO mentioned above, 15 ILOs were formulated. The ILO consists of attitude, basic knowledge, engineering science, mechanical engineering competence, educational competence."

Table A2.1 *Intended Learning Outcome*

C	Code	Learning Outcomes
Attitude	A1	Have the ability to think critically and creativity
	A2	Have clear and effective communication skills
	A3	Ability to cooperate and lifelong learning
Knowledge	K 1	Have a good understanding and can apply the basic concepts of mathematics and natural sciences to solve every problem in the field of engineering
	K 2	Able to implement mechanical engineering principles in solving problems in the field of mechanical engineering systems.
	K 3	Able to understand, plan and implement and evaluate the learning process in the field of mechanical engineering
	K 4	Understanding of health, safety, legal issues, and responsibilities of engineering practice in the field of mechanical engineering.
Engineering Skill	S1	Able to analyze problems that exist in the field of mechanical engineering through the process of investigation, data analysis and interpretation.
	S2	Able to design systems, models and process realization in the field of mechanical engineering.
	S3	Able to conduct research in the field of mechanical engineering including identification, formulation, and problem analysis using simulation and experimental models.
	S4	Able to choose the learning process, learning materials and assessment
	S5	Able to develop the quality of learning through the assessment process in mechanical engineering education
Competency	C1	Able to apply new technology in the field of mechanical engineering in accordance with National and International standards.
	C 2	Able to manage and develop processes, operating systems and mechanical engineering equipment taking into account technical and non-technical matters and their impact on industrial activities.
	C 3	Able to design, implement and evaluate mechanical engineering education curriculum.

The following **curriculum** is presented:

Appendix C.1.3 MATRIX COURSE – PLO

Se-mes-ter	No	Code	Course	Credit Point (CP)	ECTS	Program Learning Outcomes (PLO)					
						1	2	3	4	5	
I	1	0005-112-2	Pancasila / National Principle	2	3	V					
	2	0005-215-2	Developmen Psycology	2	3					v	
	3	5305-077-2	Calculus I	2	3		v				
	4	5305-079-2	Physics 1	2	3		v				
	5	5305-045-2	Chemical Engineering	2	3			v			
	6	5305-124-3	Production Process	3	4.5				v		
	7	5305-082-2	Drawing Techniques	2	3				v		
	8	5305-125-3	Automotive Fundamental	3	4.5				v		
	9	5305-074-2	Science of Materials	2	3			v			
				20	30						

Se-mes-ter	No	Code	Course	Credit Point (CP)	ECTS	Program Learning Outcomes (PLO)					
						1	2	3	4	5	

II	10	0005-106-2	Nationality	2	3	V					
	11	5005-007-1	Basics Physycs Practicum	1	1.5		V				
	12	5305-078-2	Calculus 2	2	3		v				
	13	5305-080-2	Physics 2	2	3		v				
	14	5305-083-2	Machines Drawing	2	3				v		
	15	5305-084-2	Physical Metallurgi	2	3				v		
	16	5305-001-3	Engineering Mechancs I	3	4.5			v			
	17	5305-005-2	Thermodynamics	2	3				v		
	18	5305-079-2	Beach & Plate Work Practice	2	3				V		
	19	0005-305-4	Educational Science Foundation	4	6					V	
				22	34.5						

Se-mes-ter	**No**	**Code**	**Course**	**Credit Point (CP)**	**ECTS**	**Program Learning Outcomes (PLO)**					
						1	**2**	**3**	**4**	**5**	
	20	0005-113-3	English	2	4.5	V					
	21	0005-212-2	Development Of Education Profession	2	3					V	
	22	5305-123-2	Engineering Math	2	3		V				
	23	5305-003-2	Fluid Mechanics	2	3			V			

III	24	5305-004-2	Heat Transfer Transfer	2	3				V		
	25	5305-081-2	Engineering Mechanics II	2	3				V		
	26	5305-127-2	Basic Machinery Practice	2	3				V		
	27	5305-128-2	Energy Conversion Machine	2	3			V			
	28	5305-085-2	Welding Technique	2	3			V			
	29	5305-006-2	Machine Element 1	2	3			V			
	30	5305-000-2	Development Of Education Profession	2	3			V			
	31	0005-200-2	Philosophy of Science	2	3		V				
				24	37.5						

Se-mes-ter	No	Code	Course	Credit Point (CP)	ECTS	Program Learning Outcomes (PLO)					
						1	2	3	4	5	
IV	32	0005-214-4	Instructional Learning Theory	4	6					V	
	33	5005-018-2	Instructional Design	2	3					V	
	34	5305-115-2	Kinematics And Dynamics 1	2	3				V		
	35	5305-021-2	Welding Practice	2	3				V		
	36	5305-121-2	Machine Element Ii	2	3				V		
	37	5305-011-2	Electronic Engineering	2	3		V				
	38	5305-060-2	Occupational Health & Safety, Labor Law & Wallfare	2	3		V				
	Optional Course for Production Engineering Concentartion										
	39	5305-089-3	Machining Processes (Production Machine Concentration)	3	4.5				V		
	40	3505-129-2	Practice Of Machining Processes	2	3				V		
	Optional Course of Automotive Concentration										
	41	5325-012-3	Gasoline Engine Mechanics	3	4.5				V		
	42	5305-111-2	Fuel And Lubricant	2	3				V		
	Optional Course of Production Design Concentration										
	43	5305-052-2	Aerodynamics	2	3				V		
	44	5315-019-2	Numerical Method	2	3				V		
	Optional Course of Material Concentration										
	45	5315-012-2	Metal Casting Technology	2	3				V		
	46	5315-015-3	Metal Forming Technology	3	4.5				V		
				35	52.5						

Semester	No	Code	Course	Credit Point (CP)	ECTS	PLO 1	PLO2	PLO 3	PLO 4	PLO5
V	47	0005-155-2	Religius Education	2	3	V				
	48	5005-019-3	Instructional Evaluation	3	4.5					V
	49	5305-120-2	Electrical Power Engineering	2	3			V		
	50	5305-007-2	Pump and Compressor	2	3			V		
	51	5305-099-2	Engineering Economy	2	3			V		
	52	5005-014-2	Statistics	2	3		V			
	53	5305-126-2	Measurement System	2	3			V		
	54	5315-003-2	Industrial Management	2	3			V		
	Optional Course for Production Engineering Concentartion									
	55	5305-090-2	CAD/CAM	2	3				V	
	56	5305-062-2	Maintenance Engineering	2	4.5				V	
	Optional Course of Automotive Concentration									
	57	5315-217-3	Diesel Engine	3	4.5				V	
	58	5325-014-3	Chassis	3	3				V	
	Optional Course of Production Design Concentration									
	59	5305-102-2	Mechanical Vibration	2	3				V	
	60	5315-018-2	Kinematics & Dynamics 2	2	3				V	
	Optional Course of Material Concentration									
	61	5315-013-2	Theory & Practice of Pattern	2	3				V	
	62	5215-014-2	Theory & Practice of Mold	2	4.5				V	
				35	52.5					

Semester	No	Code	Course	Credit Point (CP)	ECTS	PLO 1	PLO2	PLO 3	PLO 4	PLO5
VI	63	0005-126-2	Basic Social and Culture Science	2	3	V				
	64	0005-000-2	Coding dan Big Data	2	3		V			
	65	5005-020-3	Instructional Competency Kompetensi Pembelajaran	3	4.5					V
	66	5305-026-2	Pneumatic and Hydraulic Engineering	2	3				V	
	Optional Course for Production Engineering Concentartion									
	67	5305-092-3	Numeric Control Machine (CNC)	3	4.5				V	

	68	5305-100-2	Mechatronics	2	3				V	
	69	5305-130-2	Maintenance and Reparation of Machinery	2	3				V	
	70	5305-108-2	Materials and Processes Selection	2	3				V	
	Optional Course of Automotive Concentration									
	71	5325-013-3	Automotive Electric	3	4.5				V	
	72	5325-015-2	Automotive Body / Bodi	2	3				V	
	73	5325-016-2	Motor Cycle and Small Engine	2	3				V	
	Optional Course of Production Design Concentration									
	74	5305-107-2	Finite Element Method	2	3				V	
	75	5305-101-2	Heavy Equipment	2	3				V	
	76	5315-023-2	Computer-Aided Design (CAD)	2	3				V	
	77	5315-024-3	Automation & Robotics	3	4.5				V	
	Optional Course of Production Design Concentration									
	78	5305-134-2	Metallurgy of Metal Forming	2	3				V	
	79	5315-017-2	Advance Welding Practice	2	3				V	
	80	5305-119-2	Heat Treatment	2	3				V	
	81	5305-091-2	Materials Testing	2	3				V	
	82	5315-003-2	Industrial Management	2	3				V	
				44	66					

Semester	No	Code	Course	Credit Point (CP)	ECTS	PLO 1	PLO2	PLO 3	PLO 4	PLO5
VII	83	0005-303-3	Teaching Skills Practice	3	4.5					V
	84	0005-201-2	Research Methods	2	3				V	V
	85	5305-086-2	Industrial Attachment	2	3				V	
	86	5005-307-2	Proposal Seminar	2	3				V	V
	Optional Course for Production Engineering Concentartion									
	87	5305-131-3	Product Design	3	4.5			V		
	Optional Course of Automotive Concentration									
	88	5305-095-3	Painting Technology	3	4.5				V	
	Optional Course of Production Design Concentration									
	89	5305-116-4	Machine Design	4	6				V	
	Optional Course of Production Design Concentration									
	90	5315-016-2	Welding Metallurgy	2	3				V	
	91	5305-118-2	Coating	2	3				v	
	Optional Course for Universal knowledgmen for Minimum 4 SKS									
	92	5305-105-2	Quality Control	2	3				v	
	93	5305-112-2	Instrumentation and Control	2	3				V	
				27	40.5					

Semester	No	Code	Course	Credit Point (CP)	ECTS	PLO 1	PLO2	PLO 3	PLO 4	PLO5
VIII	94	5005-402-4	Theses	4	6				v	V
				4	6					

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Buildings Engineering Education:

"D.1.1.1. Programme Education Objective (PEO)

The objectives of the Building Engineering Education (BEE) study programme are based on the KKNI (Indonesian National Qualification Framework) (see Appendix – 8), tracer study results, and input from users. BEE Study Programme aims to produce graduates who are:

1. Using professional, pedagogical, social and personality competences in applying technical and managerial skills in planning, implementing, and evaluating learning theory and practice in the field of building engineering education.
2. Initiated an active programme of life-long learning, including studies leading to professional licensure or an advanced degree in building engineering education, that provides for continued development of their technical abilities and management skills, and attainment of professional expertise.
3. Developed their communication skills in oral, written, visual and graphic modes when working as team members or leaders, so they can actively participate in their communities and their profession in the field of building engineering education.
1. Established an understanding of professionalism, ethics, quality performance, and
4. sustainability that allows them to be professional leaders and contributors to society, and produce solutions to problems in the field of BEE.

D.1.1.2. Programme Learning Outcomes (PLOs)

Building Engineering Education (BEE) Study Programme has designed Programme Learning Outcomes (PLO) by referring to the specific subject criteria (SSC) of ASIIN. Because BEE is an educational programme, the PLO was formulated concerning the ASIIN SSC as well as the development to adjust to the characteristics in the field of education. Programme Learning Outcomes (PLO) of The Undergraduate Programme in BEE as follow:

1. Able to apply the discipline of pedagogy specifically through the planning, implementing, and evaluating learning programmes in building engineering education.
2. Able to apply basic and applied research through the implementation of relevant theory based analysis approach in the field of building engineering education teaching
3. Able to demonstrate an attitude as a professional, ethical educator, nationalist, and piety to God the Almighty.
4. Able to apply basic science that supports personal expertise in the field of building engineering education.
5. Able to self-develop by practicing lifelong learning in the field of building engineering education.
6. Able to solve building engineering problems to support the learning process by keeping the planning based on the latest science and technology.
7. Able to carry out building engineering practices in laboratories and workshops by applying the standards set in vocational education of building engineering education.

D.1.1.3. Intended Learning Outcomes (ILOs)

To achieve PLO mentioned above, 14 ILOs are formulated. The ILO is also formulated in accordance with SKKNI level 6 and adapted to the SSC. These ILOs comprise: Knowledge, Attitude, General Competence, and Special Competence."

Table D.1.1 Intended Learning Outcome

Area	Code	ILO
Knowledge	K1	Able to apply learning and learning theory according to the age development of vocational students based on the foundation of Indonesian education
	K2	Able to implement the planning, implementation, and evaluation of learning in vocational schools majoring in Building Engineering by vocational education management.
	K3	Able to apply research methodologies and applied statistics in basic and applied research in the field of building engineering education
Attitude	A1	Able to collaborate in teams by appling professional oral and written communication
	A2	Able to demonstrate the attitude of an educator who are professional, ethical, loyal to Pancasila and the 1945 Constitution, and piety to God the Almighty
General Competence	GC1	Able to apply basic knowledge of mathematics and physics in the concept of engineering mechanics to support the learning process
	GC2	Able to apply science in building construction relevant to infrastructure, both physically and its impact on the environment, to support the learning process
	GC3	Able to self-develop by practicing lifelong learning to be able to solve problems in the field of building engineering education

Area	Code	ILO
Special Competence	SC1	Able to apply the basic concepts of building design and construction by utilizing the latest technology to support the learning process
	SC2	Able to analyze building structures according to the materials used so that they can support expertise in the field of building engineering education
	SC3	Able to practice jobs in the field of building engineering education using hardware
	SC4	Able to operate software related to job analysis in the field of building engineering education
	SC5	Able to investigate the construction process based on applicable rules and construction management concepts according to the field of building engineering education
	SC6	Able to identify data and present it in the form of a comprehensive written report and present it to support the learning process

The following **curriculum** is presented:

Appendix D.1.4 Matrix Course - PLO

Sem	No.	Code	Courses	CP	ECTS	PLO							
						1	2	3	4	5	6	7	8
1	1	00051122	Pancasila Education	2	3			x					
	2	00052102	Student Development	2	3	x							
	3	54150082	Engineering Mechanics I	2	3				x				
	4	54151302	Mechanics of Materials	2	3						x		
	5	50050014	Mathematics I	4	6				x				
	6	54150702	Building Construction I	2	3				x				
	7	50050032	Basic Physics I	2	3				x				
	8	54150232	Engineering Drawing I	2	3				x				
	9	00052002	Philosophy Science	2	3			x					
	10	00051142	Indonesia Language	2	3				x				
2	11		Religion Education	3	4.5			x					
		00052033	Moslem										
		00051033	Catholicity										
		00051023	Protestant										
		00051042	Hinduism										
		00051052	Buddhism										
		00052202	Konghucu										
	12	00053074	Educational Foundation	4	6	x							
	13	54150112	Engineering Mechanics II	2	3						x		
	14	50050022	Mathematics II	2	3						x		
	15	54150712	Building Construction II	2	3						x		
	16	54150792	Stone Practice	2	3							x	
	17	54151292	Engineering Drawing II and CAD	2	3							x	
	18	54150822	Concrete Technology	2	3						x		
	19	54150042	Building Material Science	2	3						x		
	20	50050071	Basic Physiscs Practice	1	1.5							x	
3	21	00051062	Citizenship Education	2	3			x					
	22	00051262	Basic Socio – Cultural Science	2	3			x					

Sem	No.	Code	Courses	CP	ECTS	PLO							
						1	2	3	4	5	6	7	8
	23	00052312	Educators and Education Professionals	2	3	x							
	24	54050192	Engineering Mechanics III	2	3						x		
	25	54150862	Steel Structure I	2	3						x		
	26	54150882	Wood Structure I	2	3						x		
	27	54150832	Concrete Structure I	2	3						x		
	28	54151252	Soil Mechanics	2	3				x				
	29	54151272	Practice Material Testing	2	3							x	
	30	54150532	Occupational Health and Safety	2	3						x		
	31	00051132	English	2	3				x				
4	32	54151022	Economic of Planning Engineering	2	3						x		
	33	50050182	Lesson Planning	2	3	x							
	34	00052144	Learning and Learning Theory	4	6	x							
	35	54150872	Steel Structure II	2	3						x		
	36	54150892	Wood Structure II	2	3						x		
	37	54150842	Concrete Structure II	2	3						x		
	38	54150782	Soil Mechanics Practice	2	3							x	
	39	54151282	Structure Analysis Program	2	3							x	
	40	54150763	Mechanical Soil Transfer / Highway	3	4.5				x				
	41	54151102	Theory and Practice Land Measurement I	2	3				x			x	
5	42	50050193	Learning Evaluation	3	4.5	x							
	43	54150962	Budget Plan	2	3						x		
	44	54150362	Environmental Management and Impact Analysis	2	3				x				
	45	54150802	Wood Practice	2	3							x	
	46	54150732	Engineering Mechanics IV	2	3						x		
	47	54150922	Hydrology	2	3				x				
	48	54150932	Foundation Engineering I	2	3						x		
	49	50050222	Research Methodology	2	3		x						

Sem	No.	Code	Courses	CP	ECTS	PLO							
						1	2	3	4	5	6	7	8
	50	54151112	Theory and Practice Land Measurement II	2	3						x	x	
	51	54151352	Entrepreneurship	2	3					x			
6	52	50050142	Statistics	2	3		x						
	53	50050203	Learning Competencies	3	4.5	x							
	54	54150952	Construction Management	2	3						x		
	55	54150512	Healthy Techniques	2	3				x				
	56	54150942	Foundation Engineering II	2	3						x		
	57	54150472	Hydraulics	2	3						x		
	58	54151362	Interior Design*	2	3				x				
	59	54151472	Building Maintenance*	2	3				x				
7	60	54150182	Urban Drainage	2	3						x		
	61	54151123	Plumbing Theory and Practice	3	4.5						x	x	
	62	54151602	Construction Management Application*	2	3							x	
	63	54151542	Learning Strategies and Media*	2	3	x							
	64	54151532	Vocational Education Management*	2	3	x							
	65	54151482	Earthquake Engineering*	2	3						x		
	66	54150444	Internship	4	6				x	x			x
	67	50052292	Practice Teaching Skills	2	3	x		x		x		x	x
8	68	50054024	Final Project	4	6	x	x	x	x	x	x	x	x

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Informatics and Computer Engineering Education:

"1.1.1. Aims of The Programme

Produce graduates capable of:

1. Improving professional services in education, informatics, and computer engineering.

2. Excelling in the advancement of their scientific fields, including the ability to communicate scientifically and collaborate with other disciplines.
3. Achieving professional excellence in a broader range of societal areas such as teamwork, leadership, safety, ethics, service, economics, environmental awareness, and professional organization.
4. Equipped with the fundamental ability to solve a wide range of community problems through scientific reasoning, particularly in informatics and computer engineering.

1.1.2. Programme Learning Outcomes (PLOs)

The programme provides an opportunity for graduates to be able:

1. To conduct the ICT learning process.
2. To conduct educational research which includes identification, formulation, and analysis of problems.
3. To identify, analyze, and design computer-based systems that use computational principles to solve problems.
4. To implement computer-based system design based on the concepts of mathematics, basic science, and software engineering methods.
5. To identify, analyze, design, and implement network systems based on network concepts, network management and network security.
6. To implement the multimedia design and convert it into multimedia products.

1.1.3. Intended Learning Outcomes (ILOs)

To achieve the PLO mentioned above, 14 ILOs are formulated. These ILOs comprise attitude, knowledge, skills, and competence.”

Table E.1.2 Intended Learning Outcome

Area	Code	Learning Outcomes
Attitude (A)	A1	Cooperation, social sensitivity, and concern for society and the environment
	A2	Internalizing academic values, norms, and ethics
	A3	Being responsible for the duties by the expertise independently
Knowledge and Understanding (K)	K1	Mastering literature search techniques, data collection techniques, data processing techniques, and scientific writing techniques.
	K2	Mastering theoretical concepts of Software Engineering, Multimedia and Computer Networks.
	S1	Capable of studying the implications of science and technology development or implementation and applying humanities values in accordance with their expertise
	S2	Capable of being accountable for the achievement of group work results as well as supervising and evaluating the completion of work assigned to workers under their supervision.
Engineering and Education Skill (S)	S3	Able to design, analyze and implement computer-based systems based on software engineering method
	S4	Able to design, analyze and implement network systems based on computer network concepts
	S5	Able to design, analyze and implement multimedia technology based on multimedia development method concept
	S6	Able to apply, design, analyze, and evaluate education curriculum
Competence (C)	C1	Able to apply mathematical foundations, simulation, algorithmic principles, and computer science theory in the modeling and design of computer-based systems
	C2	Able to apply knowledge of computing and mathematics within technical domains.
	C3	Capable of putting knowledge of teaching methods to use.

The following **curriculum** is presented:

Table E.1.5 Matrix Course - PLO

No	MK	PLO					
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO6
Semester 1							
1	Pancasila	√					
2	Student Development Psychology	√					
3	Philosophy	√					
4	Computer Organization and Architecture			√			
5	Physics	√					
6	Calculus				√		
7	Discrete Mathematics			√	√		
8	Introduction to Systems and Information Technology			√			
9	Programming Concepts			√	√		
Semester 2							
1	Education of Religion	√					
2	Citizenship	√					

3	Basic Educational Science	√					
4	Enterpreneurship	√					
5	Linear Algebra				√		
6	Algorithm and Programming			√	√		
7	Data Communication			√			
8	Computer Technique Practice			√			
Semester 3							
1	English	√	√				
2	Basic Culture and Social Science	√					
3	Educational Profession	√	√				
4	Numerical Methods			√	√		
5	Data Structures			√	√		
6	Computer Networks			√		√	
7	Web Design			√	√		√
8	Instructional Design	√	√				
Semester 4							
1	Indonesian Language	√	√				
2	Learning and Teaching Theories	√					
3	Operating Systems			√			
4	Database			√	√		
5	Human Computer Interaction			√	√		√
6	Artificial Intelligence			√	√		
7	Multimedia Systems			√			√
8	Teaching Evaluation	√	√				
Semester 5 (Computer Networks Specialization Courses) Major 1							
1	Data Science and Analytics			√	√		
2	Software Engineering			√	√		
3	Systems Analysis and design			√	√		
4	Object Oriented Programming			√	√		
5	Computer Networks Design					√	
6	Wireless Networks					√	
7	Computer Networks Management					√	
8	Elective Course (maximum: 4 sks)						
Semester 5 (Software Engineering Specialization Course) Major 2							
1	Data Science and Analytics			√	√		
2	Software Engineering			√	√		
3	Systems Analysis and design			√	√		
4	Object Oriented Programming			√	√		
5	Object Oriented Systems Analysis and Design				√		
6	Software Project Management				√		
7	Advanced Database				√		
8	Elective Course (maximum: 4 sks)						
Semester 5 (Multimedia Specialization Course) Major 3							

1	Data Science and Analytics			√	√		
2	Software Engineering			√	√		
3	Systems Analysis and design			√	√		
4	Object Oriented Programming			√	√		
5	Advanced Multimedia Systems			√			√
6	Computer Animation			√			√
7	Visual Communication Design			√			√
8	Elective Course (maximum: 4 sks)						
Semester 6 (Computer Networks Specialization Course) Major 1							
1	Research Methods	√	√				
2	Statistics		√				
3	Algorithm Analysis and Design			√	√		
4	Coding and Big Data	√		√			
5	Instructional Competency	√					
6	Internship	√					
7	Network Security Systems					√	
8	Network Programming					√	
9	Elective Course (maximumL 6 sks)						
Semester 6 (Software Engineering Specialization Course) 2							
1	Research Methods	√	√				
2	Statistics		√				
3	Algorithm Analysis and Design			√	√		
4	Coding and Big Data	√		√			
5	Instructional Competency	√					
6	Internship	√					
7	Advanced Object-Oriented Programming				√		
8	Data Warehouse				√		
9	Elective Course (maximumL 6 sks)						
Semester 6 (Multimedia Specialization Course) Major 3							
1	Research Methods	√	√				
2	Statistics		√				
3	Algorithm Analysis and Design			√	√		
4	Coding and Big Data	√		√			
5	Instructional Competency	√					
6	Internship	√					
7	Advanced Web Design						√
8	Advanced Computer Animation						√
9	Elective Course (maximumL 6 sks)						
Semester 7 (Computer Networks Specialization Courses) Major 1							
1	Final Project Proposal Seminar	√	√				
2	Teaching Skills Practice	√					
3	Protocol Engineering					√	

4	Distributed Systems					√	
5	Elective Course (maximum: 4 sks)						
Semester 7 (Software Engineering Specialization Course) Major 2							
1	Final Project Proposal Seminar	√	√				
2	Teaching Skills Practice	√					
3	Software Building				√		
4	Software Development Methods				√		
5	Elective Course (maximum: 4 sks)						
Semester 7 (Multimedia Specialization Course) Major 3							
1	Final Project Proposal Seminar	√	√				
2	Teaching Skills Practice	√					
3	Broadcasting						√
4	Digital Video Project						√
5	Elective Course (maximum: 4 sks)						
Semester 8							
1	Final Project	√	√	√	√	√	√
The Elective Courses							
1	Image Processing			√	√		
2	Data Mining		√	√	√		
3	Cryptography				√		
4	e-commerce			√			
5	Information Systems Strategic Planning			√			
6	Information Retrieval		√	√	√		
7	IT Based Instructional Media	√		√			
8	Decision Support Systems			√	√		
9	Web Programming	√		√	√		
10	e-learning	√			√		√