ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes
Mechanical Engineering Education
Electrical Engineering Education
Building Construction Education

Provided by
Universitas Negeri Surabaya

Version: 24 June 2022

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Pendidikan Teknik Mesin	Undergraduate Programme in Mechanical Engineering Education	ASIIN	-	01
Pendidikan Teknik Elektro	Undergraduate Programme in Electrical Engineering Education	ASIIN	-	02
Pendidikan Teknik Bangunan	Undergraduate Programme in Building Construction Education	ASIIN	-	03
Date of the contract: 01.09.2020 **Submission of the final version of the self-assessment report:** 23.11.2020 **Date of the meetings:** 15.-17.12.2020 **Via video conference**				
Peer panel: Prof. Dr. Madhukar Chandra, Chemnitz University of Technology				

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[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.

Maximilian Dauer, Siemens AG Fakhri Ghiffari, student, Gadjah Mada University Prof. Dr.-Ing. Johannes Weinig, Bielefeld University of Applied Sciences Prof. Dr.-Ing. Olaf Wünsch, University of Kassel	
Representative of the ASIIN headquarter: Jan Philipp Engelmann	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria, as of 28.03.2014 Subject-Specific Criteria of Technical Committee 01 – Mechanical Engineering/Process Engineering as of 09.12.2011 Subject-Specific Criteria of Technical Committee 02 – Electrical Engineering/Information Technology as of 09.12.2011 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of 28.09.2012	

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
Mechanical Engineering Education	Bachelor of Education	-	6	Full time	-	8 Semesters	148 SKS (ca. 235 ECTS)	Annually 1982
Electrical Engineering Education	Bachelor of Education	-	6	Full time	-	8 Semesters	151 SKS (ca. 240 ECTS)	Annually 1999
Building Construction Education	Bachelor of Education	-	6	Full time	-	8 Semesters	151 SKS (ca. 240 ECTS)	Annually 1982

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

„Based on the formulation of the vision and mission of Unesa, the Faculty of Engineering, and the Department of Mechanical Engineering, the Undergraduate Program in Mechanical Engineering Education has the goal of producing graduates as vocational education teachers, vocational training instructors, supervisors/service advisors in the automotive service industry, technopreneurship, researchers, innovators, and community empowerment drivers who can compete on a national and international scale which have the following characteristics:

1. Having the ability to plan, implement, evaluate, and develop the curriculum for scientific knowledge taught in vocational education that is relevant to the development of the global industry.
2. Having initiatives to adapt, innovate, and think positively to build technology-based networks based on Faith and Taqwa to God.

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

3. Having technopreneurship capabilities that are relevant to the development of the global industry.
4. Having the ability to perform maintenance, repair, and mechanical engineering that has environmental insight."

Programme Learning Outcomes:

a. "Able to align the curriculum of scientific knowledge in vocational education that is relevant to the demands of global industrial development.
b. Able to plan, implement, and evaluate innovative and effective learning programs in vocational engineering education that are relevant to the development of the global industry.
c. Able to apply applied research for innovation in vocational learning methods, optimization of production process technology, and mechanical engineering services that are relevant to the needs of industrial development.
d. Able to think critically, creatively, analytically, synthesize-solutive, have a high work ethic, work together, build networks, and communicate oral-written in the vocational engineering field by following the development of the global industry.
e. Have a positive, honest, disciplined, diligent, aesthetic, efficient-effective, and responsible personality.
f. Able to operate mechanical and digital-based production machines to produce work-pieces and maintain and repair motorized vehicles according to standard procedures relevant to the development of the global industry.
g. Able to apply technopreneurship, service advisor, supervisor of the mechanical engineering industry relevant to the development of the global industry.
h. Able to adapt to the development of science-technology, social environment, and continuous learning throughout life.
i. Able to apply concepts and theories of economic-business, ecology, occupational health safety, and the environment in designing and carrying out relevant professional work in a sustainable manner."

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

"The S1 Electrical Engineering Education study program is to produce graduates of Bachelor of Education in the field of Electrical Power Engineering and Communication Electronics Engineering who can work as Teachers, Researchers in the Field of Education, Academics, and Entrepreneurs with the following descriptions:

1. Mastering and applying teacher competencies which include pedagogical, personal, social, and professional competencies.
2. Mastering Science and Technology and knowing the field of electrical engineering.
3. Mastering analytical techniques and scientific methods to solve problems in practice in the field of electrical engineering.
4. Ability to design products in the field of electrical engineering.
5. Have skills in developing products in the field of electrical engineering.
6. Ability to transfer knowledge and skills in the field of electrical engineering."

Programme Learning Outcomes:

1. "Able to synchronize the curriculum of electric power and electronic engineering training in vocational education that is relevant to the demands of global industrial development.
2. Able to plan, implement, and evaluate innovative and effective learning programs in vocational electrical engineering education that are relevant to the development of the global industry.
3. Able to apply applied research to innovate vocational learning methods, optimize production process technology and electrical engineering services that are relevant to industry.
4. Having extensive knowledge in the field of general knowledge, social, and humanities.
5. Able to communicate in Indonesian and English, both speaking, listening, reading, and writing.
6. Has a responsible character and is committed to professional ethics.
7. Having extensive knowledge of mathematics, science, and electrical engineering. Being able to solve complex problems that are typical in the electrification engineering and electronics engineering expertise program by following the rules of scientific writing.
8. Can analyze the research and development of electrification engineering and electronic engineering expertise program by following the rules of scientific writing.
9. Able to design series, devices, and products in the electricity expertise and electronics engineering program.
10. Being able to become a practitioner who can apply his knowledge and skills to develop products in the electrification engineering and electronics engineering expertise program in a comprehensive manner.
11. Having the ability to project management and business practices in entrepreneurship as a form of lifelong learning through education/training formally and informally."

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

"The Undergraduate Program in Building Construction Education has the aim of producing professional staff, such as lecturers, teachers, building construction experts, and entrepreneurs, with the following characteristics:

1. Able to use their competence to solve problems related to the field of Building Engineering Education and construction
2. Able to learn throughout life by continuing education and training both through formal and informal activities.
3. Able to communicate well and work in teams, and be active in professional organizations in the field of Building Engineering Education and construction.
4. Able to become professional who are ethical and responsible in the field of Building Engineering Education and construction."

Programme Learning Outcomes:

1. "Able to harmonize the curriculum of the eyes of his scientific training in vocational education that is relevant to the demands of the development of the global industry.
2. Able to plan, implement, and evaluate innovative learning programs in Building Engineering vocational education that are relevant to the development of the global industry.
3. Able to apply applied research for innovation in vocational learning methods and optimization of building technology products and services that are relevant to industry needs.
4. Having the basic character of an educator and professional who is responsible and has good ethics.
5. Able to master and apply basic knowledge that supports expertise in the field of building construction, communicating and presenting building engineering knowledge to various problem areas
6. Able to implement ideas to develop entrepreneurial activities
7. Able to develop themselves and learn to live a lifetime to continue their education to a higher level, both formal and informal
8. Able to design construction work in the form of surveys, design drawings, structural analysis, budget analysis and management.
9. Able to apply construction work ranging from surveys, work drawings, structural analysis, budget analysis and management.
10. Able to evaluate construction work in the form of finished drawings, structural analysis, budget analysis, and management."

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:

- The Educational Objectives and the Programme Learning Outcomes are published in the Academic Guidelines for each programme

- Diploma Supplements for all three degree programmes inform about the aim and content of the programmes

- Objective-Modules-Matrices for each programme correlate the modules with the PLOs that they help achieve

- The Self-Assessment Report entails details about the objectives of each study programme

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives, and students

Preliminary assessment and analysis of the peers:

Unesa has described and published programme educational objectives (PEOs) and programme learning outcomes (PLOs) for each of the three degree programmes. While the PEOs are developed based on the vision and mission of the university as well as the respective faculty and are rather general and concise, the PLOs describe in greater detail the competences, which the students should acquire during their studies. By means of being published in the Academic Guidelines for each programme, the PEOs and PLOs are well-anchored, binding, and accessible online.

From the documents presented and the discussions with the representatives of Unesa, the peers understand that graduates of the Mechanical Engineering Education programme are supposed to possess basic knowledge in natural sciences as well as in mechanical engineering. They should be able to design and implement curricula for vocational education in the field of mechanical engineering, but also to operate production machines and to repair

motorised vehicles. Furthermore, graduates should have an honest and responsible personality and should be able to consider economic as well as ecological issues regarding their professional occupation.

According to the documents and the discussions, graduates of the Electrical Engineering Education programme are to be able to work as teachers, researchers, academics, and entrepreneurs in the field of electrical engineering. Based on sound knowledge in mathematics, science, and electrical engineering, they shall acquire the competences to develop learning programmes in vocational education, to conduct research in engineering education, and to design products as a professional engineer. Additionally, the graduates should have a responsible character, be committed to professional ethics and to life-long learning.

Graduates in Building Construction Education are supposed to possess knowledge in construction and building engineering as well as pedagogical competences to work as vocational teachers, lecturers or professionals in the field of building construction. This includes the skills to design and implement innovative learning programmes as well as the abilities to design, apply, and evaluate construction work. Furthermore, the graduates should have a responsible character, professional ethics, and be able to collaborate and communicate effectively.

The peers agree that the qualification objectives of all programmes are adequate to level 6 of the European Qualification Framework, which relates to Bachelor's programmes, and to the respective ASIIN Subject-Specific Criteria of the Technical Committees of Mechanical Engineering/Process Engineering, Electrical Engineering/Information Technology and Civil Engineering, Geodesy and Architecture. They aim at the acquisition of specific competences and are generally formulated clearly and precisely. However, the peers have the impression that the qualification objectives are very broad and are thereby difficult to accomplish within a single degree programme. They are particularly sceptical about whether it is feasible to train vocational teachers and professional engineers in the same programme, especially considering that Unesa also offers full-fledged degree programmes in electrical and mechanical engineering. Inquiring about this, the peers learn that Unesa has traditionally focussed on educational programmes, which still constitute the majority of the degree programmes and that it has recently broadened its scope to include a growing number of non-educational programmes. As a result of this development, it is still the primary aim of the programmes at hand to train teachers in vocational education. This is confirmed by the representatives of employers, who particularly emphasise the pedagogical and social skills of the graduates. The clear majority of the graduates appears to be employed as vocational teachers or in the broader educational sector while only a minority is working for local engineering companies. Based on the documents as well as the discussions, the peers detect a certain imbalance between the broad PLOs and the actual learning

outcomes of the students that seem to focus on an occupation in vocational education (see also criterion 1.3).

The peers learn from the documents that the PEOs and PLOs are continuously revised and updated based on government regulations, the demand of the labour market and input from relevant stakeholders. The representatives of schools and businesses confirm that Unesa has established a solid link to the local employers. However, despite the fact that the university's system of quality management as described in the Self-Assessment Report appears to be vast and sophisticated, the peers cannot determine whether there is an institutional participation of these stakeholders in modifying and updating the qualification objectives as well as the curricula of the programmes (see also criterion 6). Therefore, they ask for additional information from Unesa regarding this issue.

Criterion 1.2 Name of the degree programme

Evidence:

- The Academic Guidelines define the names of each degree programme

- The Diploma Supplements specify that the programmes are taught in Indonesian

- Curricula of all three study programmes show whether the contents taught match the title of the programmes

Preliminary assessment and analysis of the peers:
The titles of the degree programmes follow the rules for naming study programmes set by the Indonesian Ministry of Education. The abbreviation "S1" indicates undergraduate programmes, the word "Pendidikan" signifies educational degree programmes. The peers agree that the names of all three degree programmes adequately reflect their intended aims and learning outcomes as well as the main course language (Indonesian).

Criterion 1.3 Curriculum

Evidence:

- A curriculum for each study programmes allows an overview of the taught contents and how the intended learning outcomes of the programmes are supposed to be achieved

- Objective-Modules-Matrices for each programme correlate the modules with the PLOs that they help achieve and thereby show the significance of each module for the achievement of the PLO

- Module descriptions available to students and teaching staff inform about the aim and the content of each module

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives, and students

Preliminary assessment and analysis of the peers:

The curricula of the degree programmes are designed to match the PEOs and PLOs and to that end, they are continuously examined and revised (see criterion 6). They consist of 8 semesters, each comprising 16 weeks of studies. The degree programmes utilise the Indonesian credit-point system called SKS (Satuan Kredit Semester, see criterion 2.2 for more details). The average workload for each semester is 18 SKS, while outstanding students may take up to 24 SKS depending on the achievements of the last semesters. This means that theoretically, students can finish their studies in less than 8 semesters, but due to the high workload in general, this is a rather rare phenomenon. The maximum period of study is 7 years.

Based on the Indonesian National Qualification Framework (KKNI) and Unesa's curriculum framework, the curricula comprise Core Personality Development Courses, Scientific and Skills Courses, Institutional Personality Development Courses, Community-Based Courses and Expertise Work Courses. In all three degree programmes, the scientific and skill courses constitute a clear majority of the curriculum. These mainly stretch over the first six semesters of the programmes. In the sixth semester, the students perform their obligatory Community Service. The seventh semester comprises internships while the final semester is mainly dedicated to the undergraduate thesis. In the Self-Assessment Report, Unesa describes in detail how the PLOs of each programme are to be achieved in the individual modules and thus explains the significance of each module for the programmes as a whole.

The peers are satisfied with the extensive documentation of how the curriculum is supposed to contribute to achieving the PLOs. However, they gain the impression that <u>in all three programmes</u> there are only relatively few basic courses in mathematics and other basic subjects such as mechanics or the fundamentals of electrical engineering respectively. Unesa elaborates that the students should already have acquired a certain competence in these areas in high school, which only has to be enhanced and that they also have to be taught important educational matters in the first few semesters. For this reason, Unesa considers the amount of courses covering these areas to be adequate. Due to the vast scope of civil engineering, the peers ask about how aspects such as mobility, project management, water supply and soil mechanics are incorporated in the curriculum of the <u>Building Construction Education</u> programme. They learn that the programme focusses on education and therefore cannot cover all aspects of civil engineering. However, elective courses in the later semesters enable the students to specialise in certain fields and their

academic advisors advise them on which courses to choose depending on their career interests.

These discussions strengthen the peers in their impression that not all of the PLOs can be achieved equally with the curricula of the programmes. The focus on educating the students for a career in vocational education seems to entail that not all matters can be taught in the depth necessary for a high-level, professional occupation in civil, mechanical or electrical engineering. Therefore, the peers urge Unesa to concentrate on the core of the programmes, namely training vocational educators, especially considering that the university also offers non-educational programmes in engineering. To represent the programmes accurately to all stakeholders as well as for the sake of consistency in developing Unesa's range of study programmes, the claims to educate professional engineers in the programmes under review should be toned down. The PEOs and PLOs should be narrowed down to match more precisely the actual focus of the programmes, which lies in educating vocational educators.

Criterion 1.4 Admission requirements

Evidence:

- The Academic Manual and the admission website inform about the requirements and procedures at Unesa

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives and students

- The Self-Assessment Report explains in great detail the admission process and its requirements

Preliminary assessment and analysis of the peers:
There are three different paths of admission into the programmes:

1. National Selection of Higher Education or University (Seleksi Nasional Masuk Perguruan Tinggi Negeri, SNMPTN), a national admission system, which is based on the academic performance during high school.

2. Joint Selection of Higher Education or University (Seleksi Bersama Masuk Perguruan Tinggi Negeri, SBMPTN). This national selection test is held every year for university candidates. It is a nationwide written test (subjects: mathematics, Bahasa Indonesia, English, physics, chemistry, biology, economics, history, sociology, and geography).

3. Independent Selection (Seleksi Penerimaan Mahasiswa Baru, SPMB): Students are selected based on a written test (similar to SBMPTN) specifically held by Unesa for prospective students that haven not been accepted through SNMPTN or SBMPTN.

The admission website informs potential students in great detail about the requirements and the necessary steps to apply for admission into the programmes. Since the rules are based on decrees by the ministry of education and on Unesa's written regulations, the peers deem them binding and transparent. Inquiring whether there are any special admission requirements for international students, they learn that international applicants are indeed subject to a special selection procedure and, among other things, have to prove their proficiency in Indonesian, which the peers consider appropriate.

The number of students accepted into each of the degree programmes is determined at the faculty level. It mainly takes into account the lecturer-student ratio of 1:20, which is considered ideal for the natural sciences by the Indonesian ministry of education. Every year, between 60 and 90 students are accepted into the Mechanical Engineering Education programme, around 40 into the Building Construction Education programme, and between 40 and 75 into the Electrical Engineering Education programme.

The tuition fee, which every student has to pay, depends on their admission route and on their parents' income. For undergraduate students admitted via SNMPTN or SBMPTN, the maximum tuition fee is Rp 5.800.000 (341 Euros) per semester. For undergraduate students admitted via independent selection (SPMB), the maximum tuition fee is Rp 5.200.000 (305 Euros) per semester, with an additional one-time fee of Rp 20.000.000 (1175 Euros). The Indonesian government funds a scholarship programme called Bidikmisi, which financially supports students from underprivileged families to be able to afford the tuition fees (for further support by Unesa see criterion 2.4).

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

The peers thank Unesa for providing additional information on the involvement of stakeholders in the design and development of the degree programmes. They understand that stakeholders, especially teachers, are involved in the first draft of a curriculum as well as in the regular process to update it. They specifically learn that there are advisory boards consisting of school principals, teachers, and industry representatives for all three programmes, who give advice on the competences graduates should have acquired.

Regarding the relation between the PEOs and PLOs and the curricula of the three degree programmes, the peers recognise that the former have been focussed towards the education of vocational teachers and thus have been aligned with the graduates' actual learning outcomes.

The peers consider criterion 1 fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Objective-Modules-Matrices for each programme correlate the modules with the PLOs that they help achieve and thereby show the significance of each module for the achievement of the PLO

- Module descriptions available to students and teaching staff inform about the aim and the content of each module

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives, and students

- The Academic Manual contains some regulations concerning the recognition of external achievements.

Preliminary assessment and analysis of the peers:

After analysing the module descriptions and the study plans, the peers confirm that all degree programmes under review are divided into modules, and that each module is a sum of coherent teaching and learning units. All three degree programmes share a number of basic courses which are mandatory for all programmes at Unesa, e.g. Pancasila (the five fundamental philosophical principles of the Indonesian state), religious education and English. Furthermore, the students take similar courses regarding educational matters such as educational psychology. The degree programmes utilise the Indonesian credit-point system called SKS (Satuan Kredit Semester, see criterion 2.2 for more details).

The Mechanical Engineering Education programme comprises a total of 148 SKS. 111 SKS are allotted to Science and Skills Courses, 22 SKS to Personality Development Courses, 10 SKS to Work Skills Courses and 5 SKS to Work Behaviour Courses. The bulk of the courses are mandatory with only one course being elective, which amounts to 2 SKS. The curriculum starts with basic subjects such as mathematics and material science and progresses to a

diverse array of more specific courses such as automotive electricity, heat transfer, or engine performance analysis.

The <u>Electrical Engineering Education</u> programme follows a similar structure. Its courses amount to 151 SKS in total, of which 93 fall into the category of Scientific Subjects and Skills, 24 into Personality Development Courses, 19 into Basic Skills Courses, 12 into Job Expertise Courses and 3 into Community Life Courses. The students can choose elective courses amounting to 10 SKS either in the field of communication electronics or electric power engineering. In the first semesters, they learn the basics of engineering mathematics and physics. Afterwards, they take courses on electric circuits, electromagnetic fields, telecommunications systems, sensors, actuators, and electric power systems, among other things.

The programme in <u>Building Construction Education</u> comprises 151 SKS. 93 SKS are distributed onto Science and Skills Courses, 24 onto Personality Development Courses, 19 onto Basic Skills Courses, 3 onto Community Life Courses, and 12 onto Work Skills Courses. Following basic courses in mathematics, drawing and materials sciences, the students learn about concrete and steel structures, the construction of houses and bridges, irrigation, and seismic engineering. They choose elective courses such as drainage, wood structure, highway construction or constructions quality control for a total of 10 SKS.

The peers consider the curricula to be reasonably structured at large. As has already been mentioned (see criterion 1.3), they are of the opinion that the curricula cannot guarantee the achievement of all PLOs due to the latter's vast scope. Furthermore, basic skills and especially educational courses rightly make up significant portions of the courses. Therefore, the peers consider the curricula appropriate for educational programmes that mainly aim at training vocational teachers. The graduates confirm that they generally feel very well prepared for teaching after having finished the programmes. This is partly due to the courses they take in microteaching, educational methods and psychology and partly to the three months of school internship. The peers appreciate these practical elements and consider them to be well integrated into the curriculum. While the general structure of the curricula concerning the progression from basic to more advanced matters appears very plausible to the peers, they find that in some cases the content of consecutive modules could be coordinated in a better way. Judging from the module descriptions, the content of some basic modules seems rather advanced and some advanced modules appear to rely on knowledge, which is not explicitly taught in the preceding basic course.

They inquire how transparent the module structure and the options for the elective modules are for the students and learn that they can access the general course structure

through the public Academic Guidelines of the programmes. The peers opine that the elective modules and the internships provide satisfactory opportunities for the students to define their own focus of study.

The courses of all three programmes are generally taught in Indonesian. While the peers are not generally opposed to this, they would deem it helpful to hold some courses in English to strengthen further the English proficiency of the students and to support Unesa's internationalisation strategy.

From the documents and the discussions they learn that most of the students are not able to finish the programmes in the regular duration of 8 semesters and that the average duration of study is rather around 11 semesters. They express their serious concerns about this fact and discuss potential reasons. Ultimately, they agree that the issues do not lie in the module structure of the programmes, but rather in the workload of the students (see criterion 2.2).

International Mobility

The Self-Assessment Report as well as the discussions make it very clear that international recognition is one of Unesa's primary goals for the next years. The peers point out that international mobility, with regard to the lecturers as well as to the students, is a key factor in these efforts.

They learn that Unesa already offers some support for international mobility. There are various programmes to promote international internships, for example in Japan or the Philippines. Lecturers are encouraged and financially supported to participate in international conferences and to pursue further qualifications, such as a PhD, abroad. Unesa invites international visiting professors to strengthen its international network. There are cooperation agreements with various international universities to enable the students to spend some time abroad. Unesa has also set rules concerning the recognition of achievements acquired at other universities, which rely on a Memorandum of Understanding between Unesa and the respective university.

The peers appreciate these efforts. At the same time, they are unable to determine the actual amount of student mobility in the programmes under review and request additional information on this subject. They wonder how the credit transfer works if there is no Memorandum of Understanding with the respective university. In the discussion, the students mention the possibility of a national student exchange based on a programme sponsored by the ministry of education, but do not seem very eager for international mobility. The peers suspect that there may be room for improvement in the communication of existing opportunities to the students. Furthermore, they believe that holding a number of courses

in English may contribute to increasing the international student mobility, outgoing as well as incoming.

Criterion 2.2 Work load and credits

Evidence:

- The module descriptions for each study programme inform about the work load and credits of each module

- Curricula for all study programmes detail the amount of credits to be gained in each semester

- The Self-Assessment Report elaborates on the Indonesian Credit System and its relation to ECTS

- The Self-Assessment Report contains statistical data about the amount of time the students need for the programmes

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives, and students

Preliminary assessment and analysis of the peers:
Based on the National Standards for Higher Education of Indonesia (SNPT), all three programmes under review use a credit point system called SKS. According to the legal requirements, an undergraduate programme in Indonesia can have between 144 and 160 SKS, while the actual numbers of the programmes under review are 148 and 151 SKS, respectively.

For regular classes, 1 SKS of academic load is equivalent to 3 academic hours, which equals 150 minutes, per semester week. This includes:

- one academic hour of scheduled contact with the teaching staff in learning activities,
- one academic hour of structured activities related to lectures, such as doing the assignments, writing papers, or literature study,
- one academic hour of independent activity to obtain a better understanding of the subject matters and to prepare academic assignments such as reading references.

For lab work, final projects, internships, fieldwork, and similar activities, 1 SKS is equivalent to 3 to 6 hours of student's activities per semester week. The details and the students' total workload are described in the respective module descriptions. The peers acknowledge that a credit point system based on the students' workload is in place.

In the Self-Assessment Report, Unesa explains that the students' workload per semester is roughly equivalent to the amount envisaged by ECTS. 18 SKS times 3 hours/week times 16 semester weeks times 2 semesters/year equals 1728 hours per year, which is in the European range of 1500 to 1800 hours per year. While this may be approximately true for the degree programmes as a whole, the peers point out that there can be no fixed conversion rate between SKS and ECTS points, since the number of hours per SKS depends on the type of activity. However, a conversion can be done for each individual module based on the total workload given in the module descriptions.

To complete the degree programme in time, the students need to take on average between 18 and 19 SKS per semester. However, the regular schedules of the programmes cover around 20-23 SKS per semester for the first six semesters and a lot less for the last two. The peers consider this imbalance remarkable and they inquire about the reasons for and the consequences of this structure. Unesa points out that a similar structure is a typical feature of Indonesian undergraduate programmes. While the students are subject to a relatively strict timetable at the beginning of their studies, they are meant to possess greater freedom to pursue their individual interests in the later phase of their studies. Furthermore, during the first semesters, the students have to take many regular university courses which exhibit a high amount of SKS. Important elements of the later semesters are internships, field practice, community service, and theses, which feature less SKS.

While the peers can partly follow these explanations, they express their concerns that not all parts of the curriculum are adequately taken into account in the credit point system. Especially the amounts of SKS for the internships (2-3 SKS) and the theses (5-6 SKS) appear not to match the actual workload of the students, even taking into account that for these activities 1 SKS equals 3-6 hours per semester week. In the discussions, it is mentioned that students normally work on their theses long before they are officially written, for example by gathering data, searching literature and specifying the subject. These activities, however, do not appear to be taken into account sufficiently in the amount of SKS of the respective modules.

According to the Self-Assessment Report and the discussions during the audit, there seems to be no systematic monitoring of the students' actual workload for the structured activities as well as for individual learning. This entails particular consequences in modules with a high share of independent activity. Therefore, the peers urge Unesa to ensure that the amount of SKS corresponds to the actual workload of the students for each module, especially in the practical trainings, internships, and theses.

As has already been mentioned, the students need an average of around 11 semesters to finish the programmes, while they are supposed to graduate in 8 semesters. Based on the

documents and the discussions during the audit, the peers cannot easily determine the causes of this issue. The students confirm that Unesa has established a functioning advisory system to support them with their academic and non-academic problems (see criterion 2.4). The peers agree that the module structures of the programmes are reasonable. Therefore, they conclude that the causes of this issue lie mainly in the mentioned fact that the actual workload of the students in a number of modules is not covered by the amount of SKS awarded for these modules. As this conclusion is far from established, they would like Unesa to inquire systematically into the reasons why most of the students do not manage to finish their studies in time. Either way, the university has to ensure that the students are able to finish the degree programmes in the regular duration of 8 semesters.

Criterion 2.3 Teaching methodology

Evidence:

- The module descriptions inform about the teaching methodology applied in each module

- The Self-Assessment Report delivers details about the didactical methods applied in the degree programmes

- Discussions during the audit, especially with lecturers and students, allow an insight into the teaching methodology actively applied

Preliminary assessment and analysis of the peers:

Unesa has implemented various teaching and learning methods, which mainly focus on student-centred learning. As such, the use of teaching methodology and media is adjusted to the characteristics of each course and its learning objectives and learning outcomes. The peers especially appreciate the Micro-Teaching Lab, which allows teachers to record students holding a presentation or a simulation lecture so the students' performance can be assessed in detail afterwards.

The most common method of teaching is class session, with several courses having integrated laboratory practices. Lecturers generally prepare presentations to aid the teaching process. Individual or group assignments, such as discussions, presentations, or written tasks, are supposed to help the students improve their academic as well as their soft skills. There is a good balance between teaching in class, structured assignments and independent learning. Unesa has established various e-learning opportunities, which support the lectures in the programmes under review by providing documents and strengthening academic exchange between the students and the lecturers. Through several courses, the students are familiarised with academic work.

In summary, the peers consider the teaching methodologies employed in the degree programmes to be diverse and to support reaching the PEOs and PLOs. They are well adapted to the aims and conditions of the individual courses.

Criterion 2.4 Support and assistance

Evidence:

- The Self-Assessment Report provides an overview of the programmes implemented and the measures taken to support students

- Discussions during the audit, especially with the programme coordinators and the students, allow an insight into the assistance provided in the study programmes

Preliminary assessment and analysis of the peers:

In order to support students in completing their studies on time with good achievements, the university and the faculty provide academic and personal support and assistance through various means: In the first semester, each student is assigned an academic advisor, who assists them in academic as well as non-academic matters. Amongst other things, the academic advisor, who has to be a lecturer with a permanent position, provides help with adjusting to campus life, arranging a course schedule and choosing elective courses based on personal or career interests. Additionally, the Faculty of Engineering provides a council of lecturers, one from each study programme, who assist the students both with academic and personal problems. The academic information system facilitates an easy access to course information, examination results and other crucial data to students and lecturers.

Unesa provides scholarships for various types of students, e.g. for those who otherwise could not afford studying or for those with special achievements in sports or leadership potential. A centre for disabilities has been established to assist students with disabilities. It is responsible to ensure that the university infrastructure is accessible to students with disabilities, for example by providing accessibility ramps to university facilities and Braille printers. Students with disabilities can also receive special scholarships covering the tuition fees and living expenses.

The peers notice the good and trustful relationship between the students and the teaching staff. There are enough resources available to provide individual assistance, advice, and support for all students. The support systems help the students to achieve the intended learning outcomes to complete their studies successfully. The peers inquire how the university supports the students establishing contact to potential future employers. They learn that some information is passed through the lecturers who have contact to local employers. Furthermore, Unesa is strengthening its efforts in this regard. This year, a university-

wide job centre was established as a central point of contact and a virtual job fair was organised. The peers appreciate these efforts, but think that there is still room for improvement. They recommend establishing an institutional pathway of information regarding potential career paths and employers to facilitate the students' individual career orientation.

As an example, one of the peers from Universitas Gadjah Mada gives an illustration of his university's perspective on this matter. In Gadjah Mada's Mechanical Engineering Bachelor Programme, aside from the mandatory Industrial Field Work that is embedded in the curriculum and the Industrial Field Work Report that the students must write afterwards, students also have many opportunities to get in touch with their potential employers through seminars, discussions, conferences, etc. Through these events, students can ask questions regarding their future occupation, the status quo of the industry, the challenges, etc. By gaining information about the industry, the university hopes that the students are then able to make the best decisions regarding their studies.

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

The peers thank Unesa for providing more information on the amount of student mobility in the three programmes and on how credit transfer works. They understand that the university has been strengthening its effort to facilitate national and international student mobility. As credit transfer requires a formal cooperation with the respective university, they would like Unesa to continue expanding its network of partner universities worldwide.

The peers also thank Unesa for listing the didactic research undertaken in the department. They learn that there have been some research projects, especially regarding the use of innovative forms of teaching and learning.

The peers understand from the statement of the university that Unesa has started the process identify the causes why many students do not manage to finish their studies in time. They appreciate talking directly to the respective students to figure out what the issues are and encourage Unesa to tackle structural problems, which might be brought to light in these discussions.

The peers consider criterion 2 partly fulfilled.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- The module descriptions inform about the examination of each module

- Unesa's Academic Manual determines the rules and regulations of examination in all three study programmes

- The Self-Assessment Report gives details about the forms of exams utilised in the five study programmes

- Exemplary examinations and final theses are provided in preparation of the virtual audit

- Discussions with representatives of Unesa management, programme coordinators, lecturers, business representatives, and students

Preliminary assessment and analysis of the peers:

The examination of the students' achievements of the PLOs is conducted according to the Academic Manual as well as the quality management regulations. Each course has to determine objectives, which support the achievement of the PLOs of the respective programme. Accordingly, each course must assess whether all defined learning outcomes stated in the module description have been achieved. For this purposes, Unesa utilises various types of examination. In each course, the students have to pass written mid-term and final examinations. These are either closed book or open book exams and commonly feature short answers, essays, problem-solving or case-based questions, and calculation problems. Additionally, according to the Self-Assessment Report, quizzes, laboratory practices, assignments, small projects, simulations, reports, and presentations are employed to assess the students' achievement of the PLOs. At the first meeting of a course, the students are informed about what exactly is required to pass the module. The exam questions are compiled in an institutionalised process with the participation of the lecturers of each subject and the Quality Assurance Unit to make sure that they adequately assess the achievement of the PLOs. At first, the peers are worried that the great number of examinations may result in a very high workload for the students. However, in the discussions the students appear satisfied with this structure since it makes them permanently keep track with the content of the courses in contrast to a single final exam.

Unesa's Academic Manual regulates that the final score of each module is determined using the assessment of class participation (20 %), assignments (30 %), mid-term exams (20 %), and final exams (30 %). To be allowed to take the final exams, the students have to attend at least 12 of the 15 meetings of the course, including the mid-term exam. A grade point system ranging from A (excellent) to E (fail) is utilised. The students' answer sheets of the exams are handed back to them afterwards so that they can verify that the grade

has been correctly determined. If a student fails an exam, they can repeat the entire module in the following academic year. Depending on the approval of the lecturer, it is possible to just retake the exam as well. The same holds true if a student wants to improve their grades, which is possible if their grade does not exceed a D. There is no limitation as to how often a module can be repeated. If a student cannot participate in the exam due to illness and is able to provide a doctor's certificate, they can take the respective exam at a date individually scheduled. Unesa has not yet adopted special regulations for students with disabilities, but it has recently established a Disability Centre, which is in the process of drafting such regulations. Every student of the three degree programmes is required to do a final project in the form of a Bachelor's thesis. There are special regulations in place concerning the thesis in the Academic Manual. The thesis is conducted independently under the guidance of a supervisor and usually consists of literature study, practical research, and data analysis. As a first step, the student has to write a proposal and submit it to the head of the study programme, who approves the subject and determines a supervisor. Once this process is concluded, the student can start working on their thesis. In addition to the written thesis, a comprehensive oral examination (final defence) is compulsory for all students for the completion of their undergraduate programme. The peers inquire on what topics the students typically write their theses and learn that they either choose an engineering topic or focus on approaches and innovations in vocational education.

The examination schedule is based on Unesa's academic calendar, which is communicated to the students at the beginning of each semester. The mid-term exam always takes place at the 8th, the final exam at the 16th meeting of each course.

All in all, the peers are satisfied with the regulations of exams in the three degree programmes. They appreciate the transparent procedures set up in Unesa's Academic Manual and the students confirm that the module requirements and exam dates are indeed communicated to them at the beginning of each semester. The students also emphasise that the grading system is fair and transparent. The peers were able to inspect a sample of exams and final theses in preparation of the audit and are generally pleased with them. However, they would like to get access to some more exams and theses to be able to give a final verdict.

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

The peers thank Unesa for providing numerous additional examples of final theses and exams. They conclude that the exams are oriented towards competences and adequate to the level of understanding, at which they refer. The final theses show that the students of the programmes are able to work on a task independently.

The peers consider criterion 3 fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Staff Handbooks for all three degree programmes inform about the composition of the staff as well as its qualifications

- The Self-Assessment Report gives details about the members of staff and their tasks, the teaching capacity and the relation between teaching staff and students

- Discussions during the audit, especially with the members of staff as well as the students

Preliminary assessment and analysis of the peers:

At Unesa, the staff members have different academic positions. There are professors, associate professors, assistant professors, and teaching assistants. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. Every lecturer has responsibilities in the fields of teaching, research, and community service. Some are furthermore involved in the management of the programmes, the faculty or other university bodies.

The peers learn that there is a central procedure to hire new staff members in which the university as well as the ministry of education is involved. The head of each degree programme submits the need for new lecturers and other staff to the dean, who determines how many positions are to be filled. Before a new lecturer can be employed, they have to pass two tests. Firstly, every lecturer has to pass a test of basic abilities organised by the ministry. Secondly, they have to pass a test of specific competences to gain a teaching pass at Unesa. The university elaborates that most of the lecturers have permanent positions, while some are employed for a limited time only.

In the Mechanical Engineering Education programme, there are currently 42 lecturers (3 professors, 12 associate professors, 12 assistant professors, 15 teaching assistants) and the lecturer-student ratio is approximately 1:8. In the Electrical Education programme, the lecturer-student ratio is 1:18.9, with a total of 39 lecturers (4 professors, 10 associate professors, 13 assistant professors, 13 teaching assistants). The Building Construction Education programme features 43 lecturers (3 professors, 12 associate professors, 11 assistant professors, 17 teaching assistants) and a lecturer-student ratio of 1:21.4.

The peers take note of the information about the individual workload of each lecturer in the Self-Assessment Report and inquire about what is the minimum teaching load. They learn that this depends on the position but that the general minimum workload for lecturers is 12 SKS. The peers also discuss with the teaching staff and the students whether there are enough technical assistants for supervising the lab work, repair work, installation etc. and find out that each lab has at least one technician, sometimes supported by student assistants. They inquire if there is any teaching staff taken from industrial companies and learn that several professors have gathered experience working in the industry before coming to Unesa. Furthermore, the university states that there is a close collaboration between staff of the programmes under review and industrial companies in certain regards, e.g. in developing alternative fuels. The peers appreciate this and to be able to fully assess this aspect, they ask for a complete overview of the research projects in the field of the three programmes that are conducted in cooperation with the industry.

In summary, the peers confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes.

Criterion 4.2 Staff development

Evidence:

- Staff Handbooks for all three degree programmes inform about the composition of the staff as well as its qualifications

- The Self-Assessment Report gives details on the mechanisms to facilitate the continuing professional development of the teaching staff

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, Unesa encourages the continuing professional development of its staff. For this purpose, opportunities are provided for lecturers who wish to acquire further formal qualifications (e.g. a PhD). Furthermore, lecturers are encouraged to collaborate with colleagues at renowned universities in Indonesia and abroad, to publish papers in international journals and to present their research at national and international conferences. These efforts are supported by various university funds.

To facilitate the further development of professional and teaching skills, Unesa offers a wide range of trainings for lecturers, such as trainings for writing proposals and research papers, English certificates, and didactic seminars. Every new lecturer has to go through a so-called Applying Approach training programme that is designed particularly for junior faculty members to introduce various teaching methods, as well as syllabus and course content development. As has already been mentioned, all lecturers have to have an official

teaching certificate gained through tests by the ministry and the university (see criterion 4.1). At the beginning of the Covid-19 pandemic, workshops were provided for all lecturers on how to establish forms of online teaching.

The peers discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the lecturers are satisfied with the internal qualification programme at Unesa, their opportunities to improve further their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars.

The peers consider the support mechanisms for the continuing professional development of the teaching staff adequate and sufficient.

Criterion 4.3 Funds and equipment

Evidence:

- The Self-Assessment Report informs about the funding and equipment of the three degree programmes
- Videos of the facilities show the laboratory equipment
- Discussions during the audit

Preliminary assessment and analysis of the peers:
As a public university, Unesa is mainly funded by the Indonesian state. Besides the public funding, Unesa also generates income via tuition fees and society funding. As one of nine Indonesian universities, Unesa has the status of Badan Layanan Umum (BLU/Public Service Body) which comes along with an independent budget management of the university. Each faculty is allotted a certain sum per year (based on workload, amount of students and other factors) for which it has to propose a budget. The Faculty of Engineering determines the budget for each degree programme. In the Self-Assessment report, Unesa provides information about the funding each degree programme has received within the last three years. Apart from a decline in 2020 due to reduced government spending because of the Covid-19 pandemic, the peers detect a stable financial situation.

In preparation of the audit, Unesa provides a number of videos showing the laboratories of the three programmes. At first glance, the peers do not recognise a clear lack of equipment or technical infrastructure. However, it appears quite difficult to get to a final judgment based on the documents, the videos, and the discussions during the audit. Some questions remain unanswered, for example regarding the exact state of the labs, how the students learn how to teach in a laboratory, or the safety measures. Similarly, while there arise no critical problems concerning the libraries during the discussions, the details about (among other things) access to (international) journals, remote access and work stations are not

sufficiently clear to the peers. Therefore, they consider it necessary to visit and assess the technical infrastructure, safety measures, and facilities on site at Unesa as soon as the pandemic situation allows it.

The peers ask the students whether they have access to all required software. As far as they understand, there seems to be no institutional access to critical software such as LabVIEW and Matlab. Some students indicate that access has been provided through lecturers in individual cases and that there may be some relevant software installed on university computers. However, the situation as a whole remains unclear to the peers. Consequently, they ask Unesa to provide more information about what software the students of the programmes under review have access to and in which way this access is guaranteed.

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

The peers thank Unesa for providing a list of research project at the faculty of engineering, which are conducted in cooperation with the industry. They recognise that there is some form of cooperation with local industrial partners, which can also prove to be beneficial for the degree programmes.

They also thank Unesa for elaborating which software the students have access to. In many cases, the university refers the students to open source software. Additionally, there are licenses for Matlab, AutoCAD and LabVIEW.

The peers consider criterion 4 mostly fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:
- Module Handbooks, containing module descriptions, for each of the three degree programmes

Preliminary assessment and analysis of the peers:
The module handbooks for all three programmes have been published on Unesa's website and are thus accessible to the students as well as to all stakeholders. The peers observe that they contain information about the persons responsible for each module, the teaching methods and workload, the credit points awarded, the intended learning outcomes, the applicability, the admission and examination requirements, and the forms of assessment,

and details explaining how the final grade is calculated. However, they consider the information in some of these categories not detailed enough. This mainly refers to the module content, but also the examination requirements, which could comprise more details about the exams as well as the assignments. Consequently, they urge Unesa to revise the module descriptions with special regards to the mentioned categories.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Sample Transcript of Records for each degree programme

- Sample Diploma certificate for each degree programme

- Sample Diploma Supplement for each degree programme

Preliminary assessment and analysis of the peers:
The peers confirm that the students of all three degree programmes under review are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Diploma Supplement contains all necessary information about the degree programme. The Transcript of Records lists all courses that the graduate has completed, the achieved credit points, grades, and cumulative GPA.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Report

- All relevant regulations (statute, Academic Manual, Academic Guidelines, Thesis Guidelines, Industrial Practice Guidelines, Guidebook for Introduction to School Field) as published on the university's website

Preliminary assessment and analysis of the peers:
The auditors confirm that the rights and duties of both Unesa and the students are clearly defined and binding. All rules and regulations are published on the university's website in Indonesian as well as in English and hence available to all stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester.

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

The peers appreciate that Unesa has already started to revise the module descriptions. However, the module handbook provided for Electrical Engineering Education appears to be incomplete. Moreover, the peers encourage Unesa to improve the module descriptions further, particularly to distinguish more clearly between learning outcomes and contents of the modules.

The peers consider criterion 5 mostly fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- The Self-Assessment Report details the methods Unesa utilises to control and improve the quality of its degree programmes and entails data gathered about the three degree programmes
- Unesa quality manuals determine various procedures to control and improve the quality of the degree programmes
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The peers learn that there is an institutional system of quality management aiming at continuously improving the degree programmes. This system relies on internal (SPMI) as well as external (SPME) quality assurance. SPMI encompasses all activities focused on implementing measures for improving the teaching and learning quality at Unesa. SPME focuses on both national and international accreditations. Every degree programme and every Higher Education Institution in Indonesia has to be accredited by the national Accreditation Agency (BAN-PT). Unesa as an institution as well as all three degree programmes under review have received the highest accreditation status (A) from BAN-PT.
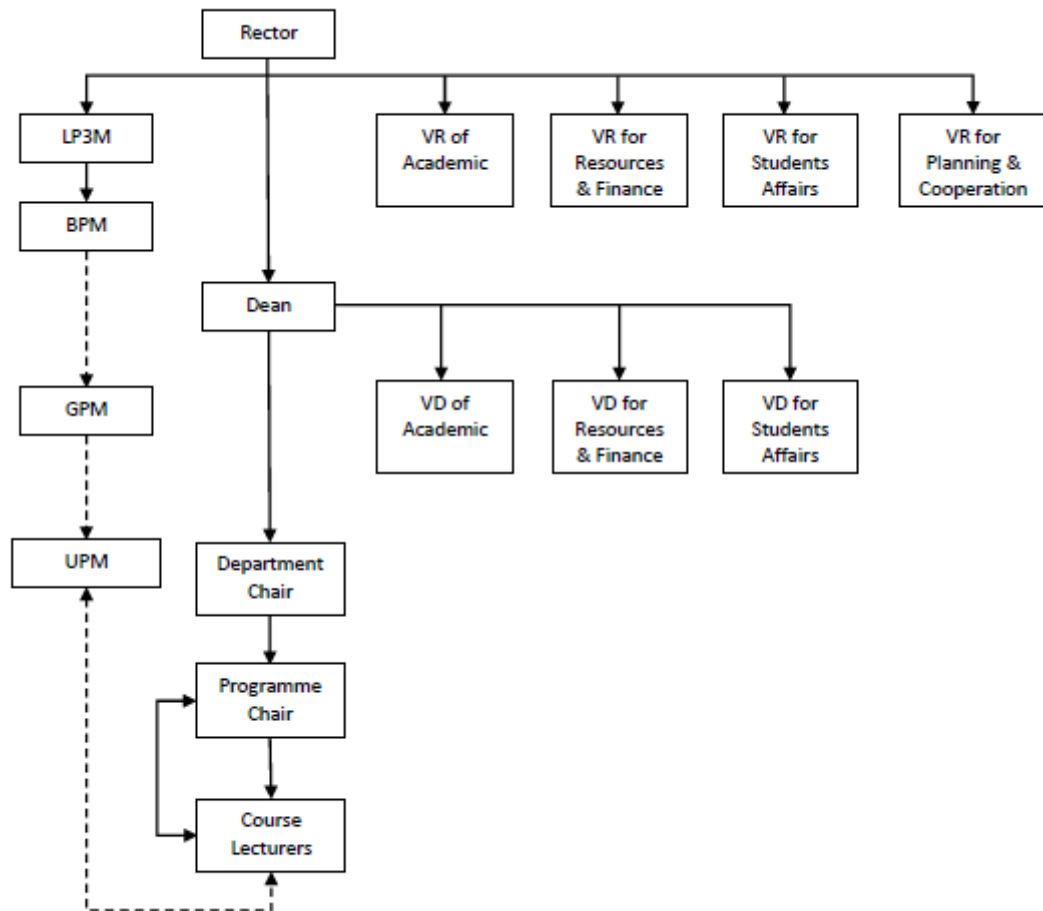
Figure 6.1. Learning quality assurance diagram

Unesa features a number of bodies tasked with the internal quality assurance. At university level, there is the Quality Assurance Center (BPM). BPM is responsible for establishing quality standards and procedures, drafting quality manuals assessment forms and self-assessment checklists, and monitoring the implementation of the standards and procedures. At faculty level, the Quality Assurance Group (GPM) working under the respective dean monitors the quality of educational processes and research activities in each study programme. At the level of the individual study programme, the main responsibility lies with the head of the study programme. There is also a Quality Assurance Unit (UPM) responsible for ensuring that the PLOs and the learning outcomes for each course are accomplished.

These bodies utilise various measures to assess the quality of the degree programmes. At the end of each semester, the students are asked to evaluate the lecturers and courses. All graduates are supposed to fill out a questionnaire regarding their experiences with the respective programme as a whole. The university has established an alumni tracer study for alumni with a lot of professional experience to reflect on their studies with special regards to their later professional development. At the end of each semester, the students'

achievement of the PLOs is evaluated based on their grades in the categories of participation, assignments, mid-term exam and final exam. At least every five years, the university reviews the curricular structure of each degree programme.

The peers are impressed by the sophisticated quality management system, which the university and the faculty have established. Yet, they inquire in which way the students are informed about the results of the course evaluations and the actions, which may have been taken based on these results. It appears that this feedback is informal at best as the results of the questionnaires are not officially discussed with the students in the respective courses. The peers consider it necessary to close the feedback loops to involve the students more actively in the process of continuous improvement of the programmes. In the same vein, they ask whether the students are directly involved in the university bodies and the decision-making processes. According to the programme coordinators, the student councils at faculty and university level are the points of contact for the university administration. There is a bi-annual open dialogue at university and faculty level in which the students are informed about recent developments and are given the chance to voice complaints. However, students are not directly involved in the decision-making processes about the degree programmes. The peers believe that an institutional participation of the students, e.g. by having a student member in the quality assurance bodies, could prove beneficial for the quality of the programmes.

In the Self-Assessment Report as well as in the discussions during the audit, it is mentioned that external stakeholders such as industrial companies or educational institutions are involved in revising and updating the PEOs and PLOs as well as the curricula of the degree programmes. However, it remains unclear to the peers in which way this participation takes place and whether there is an institutional process for this involvement. Consequently, they ask for additional information on this point.

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

The peers understand that Unesa has already conducted a meeting with students to inform them about the results of satisfaction surveys. They appreciate this effort and urge the university to establish a regular process to inform the students about the results of the teaching evaluations and the resulting measures.

The peers consider criterion 6 mostly 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:

1. Provide more examples of theses and exams.
2. Provide more information on the software the students have access to and in which ways.
3. Provide more information on how exactly the stakeholders are involved in modifying the goals and the curricula of the programmes.
4. Provide an overview of the research projects that are conducted in cooperation with the industry.
5. Provide an overview of the didactic research conducted at Unesa and of how it is reflected in developing the programmes.
6. Provide more information on the amount of student mobility in the programmes at hand and on how credit transfer works if there is no Memorandum of Understanding with the respective university.

E Comment of the Higher Education Institution (21.02.2021)

The institution provided the following statement and numerous additional documents:

1. THE DEGREE PROGRAMME: CONCEPT, CONTENT AND IMPLEMENTATION

Criterion 1.1 Objectives and Learning Outcomes of a Degree Programme (Intended Qualifications Profile)

According to the peers, the qualification objectives of all programmes are adequate to level 6 of the European Qualification Framework, which relates to Bachelor's programmes, and to the respective ASIIN Subject-Specific Criteria of the Technical Committees of Mechanical Engineering/Process Engineering, Electrical Engineering/Information Technology and Civil Engineering, Geodesy and Architecture. The aim to acquire specific competences are also generally clearly and precisely defined.

However, the peers provide feedbacks that must be addressed regarding to the objectives and learning outcomes as follows:

1) The peers have the impression that the program has a very broad qualification objectives and, therefore it is difficult to achieve in a single degree program. They are also particularly skeptical about whether it is feasible to train vocational teachers and professional engineers in the same program, especially considering that Unesa also offers full-fledged degree programs in civil, electrical and mechanical engineering (see also Criterion 1.3)

2) The first issue has also brought a question about a certain imbalance between the broad PLOs and the actual learning outcomes of the students that seem to focus on an occupation in vocational education.

3) Due to the vast and sophisticated of quality management system as reported in Self-Assessment Report, the peers cannot determine whether there is an institutional participation of these stakeholders in modifying and updating the qualification objectives as well as the curricula of the programmes (see also Criterion 6)

Response:

1) We appreciate the suggestions from the peers that we should concentrate on preparing vocational education teachers. The curriculum was developed according to the Indonesian National Qualification Framework (KKNI) 2016 (see Annex 5). This curriculum refers to the Spectrum issued by the Director General of Primary and Secondary Education, Ministry of Education and Culture of the Republic of Indonesia No. 4678/D/Kep/MK/2016 concerning the Spectrum of Vocational Education Expertise (see Annex 4). This Spectrum describes the skills possessed by vocational students. The current curriculum applied is in accordance with the KKNI 2016 and the Spectrum set by the Ministry of Education and Culture of the Republic of Indonesia. However, based on the results of the tracer study, it is stated that some of our graduates are able to work in industries. Thus, we include a professional engineer as one of the graduate profiles in this 2016 curriculum. Based on the peers comment, we revise our graduate profile according to the core programmes as follows:

• Curriculum summary of Electrical Engineering Education: See Annex 1
• Curriculum summary of Mechanical Engineering Education: See Annex 2
• Curriculum summary of Building Construction Education: See Annex 3

In the curriculum, we will concentrate on preparing vocational teachers. However, if there are graduates that working in industry/non-education sector (based on the result of tracer study), this inseparable from the competencies of graduates that are related to the curriculum applied to the needs of the industries at that time.

2) In the KKNI 2016 curriculum, professional engineer is one of the graduate profiles for all programmes. We agree with the peers feedback to revise the programme objective in line to the core programme, i.e. preparing vocational teachers. The revised of curriculum summary (profile, PEO, and PLO) of Electrical Engineering Education (see Annexes 1), Mechanical Engineering Education (see Annexes 2), and Building Construction Education (see Annexes 3) are attached.

3) The curriculum of all programmes are developed based on the KKNI 2016 curriculum (Annexes 5), the Spectrum issued by the Ministry of Education and Culture (see Annexes 4), the vision and mission of Unesa, the vision and mission of Engineering Faculty, and Unesa Curriculum Guidelines 2016 (see Annexes 15). It involves stakeholders from vocational school and industries. The development process of the curriculum for each programme is described in more detail as follows:

• Curriculum development process of Electrical Engineering Education: See Annexes 12
• Curriculum development process of Mechanical Engineering Education: See Annexes 13
• Curriculum development process of Building Construction Education: See Annexes 14

The involvement of stakeholders with institutional (Advisory Board) can be seen as follows:

• Advisory Board of Electrical Engineering Education: See Annexes 6
• Advisory Board of Mechanical Engineering Education: See Annexes 7

• Advisory Board of Building Construction Education: See Annexes 8
• Update Data of Programme Advisory Board: See Annexes 9
• Update Data of Engineering Faculty Advisory Board: See Annexes 10
• Link of Advisory Board can be accessed through http://ft.unesa.ac.id/page/advisory-board

Criterion 1.2 Name of The Degree Programme
We appreciate the positive responses from the peers regarding to the names of the three degree programmes (Electrical Engineering Education, Mechanical Engineering Education, and Building Construction Education) stating that the name of the degree programme has adequately reflect the objectives and learning outcomes, as well as the main course language (Indonesian).

Criterion 1.3 Curriculum
Despite the peers satisfy with the submitted documentation of how the curriculum is supposed to contribute to achieving the PLOs, the peers have the impression that not all of the PLOs can be achieved equally with the curricula of the programmes. The focus on educating students for careers in vocational education teachers seems to require that not everything can be taught in depth in high-level professional occupation in civil, mechanical or electrical engineering. Therefore, the peers urge Unesa to concentrate on the core of the programmes, i.e. training vocational educators, especially considering that the university also offers non-educational programmes in engineering. The PEOs and PLOs should be narrowed down to match more precisely the actual focus of the programmes, which lies in educating vocational educators.

Response:
We agree with the peers feedback to revise the programme objective in line to the core programme, i.e. preparing vocational teachers. The revised of curriculum summary (profile, PEO, and PLO) of Electrical Engineering Education (see Annexes 1), Mechanical Engineering Education (see Annexes 2), and Building Construction Education (see Annexes 3) are attached. (Please see Criterion 1)

Criterion 1.4 Admission requirements
We appreciate the positive responses from the peers regarding to the admission process. However, the peers inquire whether there are any special admission requirements for international students.

Response:
We have Standard Operating Procedure (SOP) of the admission requirements for international students as shown in SOP Document No. SOP-BUK.HK.26 regarding to the Admission of Foreign Students (see Annexes 21)

2. THE DEGREE PROGRAMME: STRUCTURES, METHODS AND IMPLEMENTATION

Criterion 2.1 Structure and Modules
We appreciate the positive feedback from the peers in terms of structure and module. There are several main issues that need to be addressed by all programmes as follows:
1) The peers consider the curricula to be reasonably structured at large. They are of the opinion that the curricula cannot guarantee the achievement of all PLOs due to the latter's vast scope (see also Criterion 1.3).

2) The peers are unable to determine the actual amount of student mobility in the programmes under review and request additional information on this subject. They wonder how the credit transfer works if there is no Memorandum of Understanding with the respective university

Response:
1) We have committed to focus on the core objectives of the programme, namely preparing vocational teachers. The PLO of each programme has been adjusted according to the peers feedback, i.e. preparing vocational teachers, and the detail of revised PLO of all programmes can be seen in Annexes 1 (Electrical Engineering Education programme), Annexes 2 (Mechanical Engineering Education programme), and Annexes 2 (Building Construction Education programme).
2) Unesa already has Memorandum of Understanding (MoU) with Universiti Tun Hussein Onn Malaysia (UTHM). The activity that has been carried out is student mobility exchange with UTHM with the name of the student and subject/courses. (see Annexes 20 – 23).
The transfer credit procedure is regulated by the Dean's Decree No 64/UN38/LN/2014 about MoU between Universiti Tun Hussein Onn Malaysia (UTHM) with Unesa (see Annexes 19).

Criterion 2.2 Work Load and Credits
We appreciate the constructive feedback from the peers in terms of workloads and credits. According to the peers, there are several main issues which is required to be addressed by the programmes as follows:
1) The peers are concern that the amount of SKS for the internship (2-3 SKS) and theses (5-6 SKS) appear not to match the actual workload of the students. They urge Unesa to ensure that the amount of SKS corresponds to the actual workload of the students for each module, especially in the practical trainings, internships, and theses.
2) The peers express their serious concerns about the length of the study. Most of the students are not able to finish the programmes in the regular duration of 8 semesters and that the average duration of study is rather around 11 semesters According to the peers, these issues do not lie in the module structure of the programmes, but rather in the workload of the students (see Criterion 2.1)

Response:
1) In terms of work load, we admit that the work loads of course for 1 SKS is equal to 50 minutes + 60 minutes + 60 minutes, while work loads of internship is equal to 8 hours x 5 days x 2 months. Starting in 2020, the government policy through Ministry of Education and Culture launches a new concept "Merdeka Belajar Kampus Merdeka" (MBKM) which states that the internship program is equivalent to 20 SKS (the program has run for 1 semester). This internship must be in accordance with the PLO programme.
2) To find out the causes/factors that cause students who not graduate on time, the Engineering Faculty holds a meeting with students who have passed semester 8. The results of the meeting are:
1. Students do not have a thesis title at semester 8 so this affects study time
2. Communication with supervisors is not well established, especially in the pandemic era and sometimes the supervisor is not quick to respond
3. Some students have worked before graduating
4. Takes longer time when completing the thesis
5. Students do not manage time well during semester 8
To overcome this, the faculty issued a letter of appeal addressed to the students mentioned above. The results above were discussed with all deans and heads of study programs.
The results of the Meeting are:
point no. 12

Each semester is scheduled to hold meetings with students who exceed 8 semesters.
− The function of Academic Advisors is reactivated to monitor students through the information system, and is communicated when there are problems.
− To further activate the counseling guidance function in the Department.
− Preventive measures are research methods courses that help students plan their theses.
− Monitoring thesis guidance is more orderly and firm through the academic information system at Unesa.
− Communicate to students who are over 8th semester by conducting online / offline meetings to find solutions.
− Students are asked to make a statement letter to immediately complete their theses for those who have exceeded semester 8.
− For students who have not yet received a research topic, a lecturer will provide research topics from the lecturers' research three.
− Assistance by lecturers intensively.

Criterion 2.3 Teaching Methodology

We would to thank the peers for the positive response regarding to teaching methodologies. According to the peers, the teaching methodologies are well adapted in achieving the objectives and conditions of individual courses to support the achievement of PEO and PLO. These conditions will be maintained and improved, especially in teaching process, structured assignments and independent learning areas, as well as to establish the various e-learning opportunities.

Criterion 2.4 Support and Assistance

We appreciate the positive feedback from the peers regarding to the support and assistance. They also notice that there is a good and trustful relationship between the students and the teaching staff. This condition will be maintained to keep the academic environment in all programmes to ensure the students' performance. However, the peers inquire how the university supports the students establishing contact to potential future employers. Therefore, they recommend establishing an institutional pathway of information regarding potential career paths and employers to facilitate the students' individual career orientation.

Response:

Unesa has Unesa Crisis Center (UCC) unit. This unit facilitate students to develop their careers. In addition, each program will increase the role and involvement of the alumni.
The UCC link can be accessed through link: http://careerfair.unesa.ac.id/
The carrier path activities of all programmes and faculty can be seen in Annex 28.

3. EXAMS: SYSTEM, CONCEPT AND ORGANISATION

Criterion 3 Exams: System, Concept and Organisation

We are grateful for the positive comments from the peers regarding to the regulations of exams. The peers appreciate the transparent procedures stipulated in the Unesa Academic Manual. In addition, the students also ensure that module requirements and exam dates are communicated to them at the start of each semester. The students also emphasize a fair and transparent scoring system. We will continue to maintain this condition to ensure the implementation of the exam process properly, as well as its transparency.
However, in order to give the final verdict, the peers would like to get access to some more theses and exams.

Response:

The example of the thesis and exam from the best to the worst results of three programmes can be
seen in Table 1 (Please see Additional Documents No. 1) and Annex 32 – 34.

4. RESOURCES
Criterion 4.1 Staff
We would like to thanks the peers for the positive feedback on the assessment and analyze of the composition, scientific orientation and qualification of the teaching staff. We will continue to maintain the lecturer's workload and the lecturer-student ratio to ensure the quality of learning program. Further, we also try to improve the staff qualification and the staff academic positions, as well as to increase close collaboration between staff of the programmes and industrial companies. However, the peers would like to get a complete review the research projects in the field of the three programmes that are conducted in cooperation with the industry

Response:
The complete review the research projects in the field of the three programmes that are conducted in cooperation with the industry can be seen in Annexes 35.

Criterion 4.2 Staff Development
We are grateful for the positive feedback from the peers regarding to the staff development. We will improve the continuing professional development of the teaching staff by providing more opportunities to acquire further formal qualifications, and professional development and teaching skills. We will also to provide more opportunities for the staff to improve further their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars.

Criterion 4.3 Funds and Equipment
We appreciate the feedback from the peers in terms of funds and equipment. Unesa has provided a number of videos showing the laboratories of the three programmes. However, the peers have concern regarding to the infrastructure and equipment as follows:
1) Details about journal access (international), remote access and workstations (IT infrastructure) which is required to be visited as soon as the pandemic situation allows it.
2) Information related to licensed software used by students and how students can access the software.

Response:
1) In terms of journal access, Unesa provides the journal (international) through Unesa library which can be accessed by all students and academic staff of Unesa. This Unesa library can be accessed through the link https://library.unesa.ac.id/. The international journals which provided by Unesa library are categorized based on publishers as follows: e-Journal Springer, e-journal Cambridge, ejournal EBSCO, and e-journal Emerald Insight, as well as the student theses.
In terms of workstation, each laboratory in the three programme provides a computer that can be accessed by students directly or accessed remotely. One of the software used by students, namely National Instruments and Matlab software, can be used in the laboratory either directly or accessed remotely. Students can use these licensed programs by contacting the Head of the laboratory in the Programme. Further, the Faculty of Engineering also provides web mirror addresses and tutorials for installing this license software. In addition, the lecturer can advise students to access the student version software which address is available on the web of Engineering Faculty (Please see Annex 29)
2) The information regarding to the Unesa's licensed software that can be accessed by students can be accessed in the following link: http://ft.unesa.ac.id/page/aplikasi-open-source

Some licensed software in Faculty of Engineering that can be accessed by students are Matlab, AutoCAD, Labview (National Instrument)

5. TRANSPARENCY AND DOCUMENTATION

Criterion 5.1 Module Descriptions

We appreciate the positive feedback from the peers in terms of the module descriptions. According to the peers, the module descriptions are quite informative. However, they consider the information in some of these categories not detailed enough, namely the module content, the examination requirements, the details about the exams, as well as the assignments.

Response:

We agree with the peers feedback to revise the module descriptions. The revised of module descriptions with addition of detailed information on the module content, the examination requirements, the details about the exams, as well as the assignments for each programme can be seen in annexes as follows:

• Module handbook revision of Electrical Engineering Education: See Annex 16
• Module handbook revision of Electrical Engineering Education: See Annex 17
• Module handbook revision of Building Construction Education: See Annex 18

Criterion 5.2 Diploma and Diploma Supplement

We would like to thanks to the peers for their assessment on diploma and diploma supplement. The peers confirm that the students of all three degree programmes are awarded a Diploma, which is consists of a Diploma Certificate and a Transcript of Records, and Diploma Supplement after graduation.

Criterion 5.3 Relevant Rules

We appreciate the peers for the positive responds on the relevant rules and regulations as published on the university's website. We will maintain this performance to ensure the rights and obligations of Unesa and students are clearly defined and binding. In addition, we will also improve the performance of the website to ensure that all information can be accessed easily for those concerned

6. QUALITY ASSESSMENT AND DEVELOPMENT

Criterion 6 Quality Management: Quality Assessment and Development

We would like to thank for the constructive feedback from the peers regarding to the quality assessment and development, especially for feedback loops and the involvement of the stakeholder.

There are two main issues that concern the peers as follows:

1) The peers consider it necessary to close the feedback loops to involve the students more actively in the process of continuous improvement of the programme.
2) Additional information on the role and involvement of stakeholders in the process of revising and updating PEO and PLO and the curriculum (curriculum restructuring).

Response:

1) The Quality Assurance Group (GPM) at faculty level carries out several activities in order to close the feedback loops in the process of continuous improvement as follows: student satisfaction surveys, internal quality audits, monitoring and evaluation.

This activity begins by sending a questionnaire via google form to the students. The results from the google form are analyzed and then the results are submitted through the RTM (Continuous Improvement Plan) which will be used as a follow-up program in the next program.

This is the example of the results of the service quality survey of student satisfaction during the Covid-19 pandemic at the programmes. There are 6 observed aspects, namely: attitude, ability, accountability, appearance, attention, and action. The conclusion of the survey shows that the institution service towards the 6 aspects in Faculty Engineering is good. It is necessary to carry out a survey during Work from Home (WFH) and Work from Office (WFO) services.

The activity of Internal Quality Audit (AMI) is carried out once a year to see the suitability of program implementation and achievement of performance indicators in all programmes. AMI is carried out in accordance with ISO 9001: 2015 standards. In addition, the activity of learning monitoring and evaluation (Monev) is carried out every semester. This activity is carried out after the mid semester exam (UTS) focus on the aspects of preparation, and learning process and evaluation. The results of Monev are conveyed through a follow-up meeting at the faculty level to follow up the findings. Monev results are also reported to the Unesa Quality Assurance Office (BPM). However, the feedback from peers has not been confirmed directly to the students. This feedback become the basis for future improvements for all programmes which will start this semester and socialize each year (Please see Annex 30 and Annex 31).

2) In order to address the addition information on the role and involvement of stakeholders in the process of revising and updating PEO and PLO and the curriculum, the faculty performes activities as follows: forming an ad hoc committee consisting of the head of programme, lecturers, vice dean of academic affairs, preparing the draft of the curriculum, internal review process by Quality Assurance Group (GPM at faculty level) and Quality Assurance Unit (UPM at programme level), and finally, external review process with stakeholders consisting of education and industry partners. The updating process of content is carried out annually. (Please see Annex 27)

7. ADDITIONAL DOCUMENTS

The peers require the additional documents to address the missing or unclear information. These documents can be access through the website or link as follows:

1. Examples of thesis and exam

The example of the thesis and exam from the best to the worst results of three programmes can be seen on the following table (Please see Criterion 3).

Table 1. The example of the thesis and exam

Programmes Thesis and Exams

Electrical Engineering Education Annex 32

Mechanical Engineering Education Annex 33

Building Construction Education Annex 34

2. Information on the software the students have access to and in which ways

The information regarding to the licensed software that can be accessed by students can be accessed in the following link: http://ft.unesa.ac.id/page/aplikasi-open-source

The procedure for the students to access the licensed software has been described in Criterion 4.3 and Annex 29.

3. Information on how exactly the stakeholders are involved in modifying the goals and the curricula of the programmes

The information regarding to the stakeholder involvement in modifying the goals and the curricula of the programmes has been elaborated in Criterion 1.1 comment no. 3.

(Please see also Annexes 6 – 11)

4. An overview of the research projects that are conducted in cooperation with the industry

The information regarding to the overview of the research cooperation between the programme

and the industry can be seen in Annex 35.

5. An overview of the didactic research conducted at Unesa and of how it is reflected in developing the programmes

The information regarding an overview of didactic research conducted on the program which reflects the programme development can be seen in Annex 36 (Electrical Engineering Education), Annex 37 (Mechanical Engineering Education), and Annex 38 (Building Construction Education), respectively.

6. Information on the amount of student mobility in the programmes at hand and on how credit transfer works

The information on the student mobility and the mechanism of the credit transfer in the programmes can be accessed on Annex 21.

F Summary: Peer recommendations (17.03.2021)

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Engineering Education	With requirements for one year	30.09.2026	–	–
Ba Electrical Engineering Education	With requirements for one year	30.09.2026	–	–
Ba Building Construction Education	With requirements for one year	30.09.2026	–	–

Requirements

For all degree programmes

A 1. (ASIIN 2.2) Ensure that the awarded credits correspond with the students' total workload for each module, especially in regard to the practical training, internships and final projects.

A 2. (ASIIN 2.2) Ensure that the students are able to finish the degree programmes in the regular duration of eight semesters.

A 3. (ASIIN 4.3) It is necessary to visit and assess the technical infrastructure, safety measures, and facilities on site at Unesa.

A 4. (ASIIN 5.1) Revise the module descriptions across the curricula with special regard to the module content and the examination requirements.

A 5. (ASIIN 6) Ensure that the students are informed about the results of the teaching evaluations and the resulting measures.

Recommendations

For all degree programmes

E 1. (ASIIN 2.1) It is recommended to better align the content of the basic and the advanced modules.

E 2. (ASIIN 2.1) It is recommended to enhance the use of the English language in the curriculum.

E 3. (ASIIN 2.4) It is recommended to establish an institutional pathway of information regarding potential career perspectives and possible employers.

E 4. (ASIIN 6) It is recommended to increase the students' participation in further developing the programmes.

G Comment of the Technical Committees

Technical Committee 01 – Mechanical Engineering/Process Engineering (07.06.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedures 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	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Engineering Education	With requirements for one year	30.09.2026	–	–

Technical Committee 02 – Electrical Engineering/Information Technology (04.06.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and particularly requirement A2. It is of opinion that the crucial point is not to ensure that students are able to finish the degree programme within the regular duration (some already manage to do so), but to systematically inquire why so many students exceed this duration. Therefore, they propose a reformulation of the requirement accordingly.

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Electrical Engineering Education	With requirements for one year	30.09.2026	–	–

Technical Committee 03 – Civil Engineering, Geodesy and Architecture (07.06.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and agrees with the peers' assessment.

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	Subject-specific label	Maximum duration of accreditation
Ba Building Construction Education	With requirements for one year	30.09.2026	–	–

H Decision of the Accreditation Commission (18.06.2021)

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

The Accreditation Commission discusses the procedure and agrees with the assessment of the peers and the amendment proposed by TC 02.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Mechanical Engineering Education	With requirements for one year	30.09.2026	–	–
Ba Electrical Engineering Education	With requirements for one year	30.09.2026	–	–
Ba Building Construction Education	With requirements for one year	30.09.2026	–	–

Requirements

For all degree programmes

A 1. (ASIIN 2.2) Ensure that the awarded credits correspond with the students' total workload for each module, especially in regard to the practical training, internships and final projects.

A 2. (ASIIN 2.2) Inquire systematically into the reasons why most of the students exceed the regular duration of 8 semesters.

A 3. (ASIIN 4.3) It is necessary to visit and assess the technical infrastructure, safety measures, and facilities on site at Unesa.

A 4.   (ASIIN 5.1) Revise the module descriptions across the curricula with special regard to the module content and the examination requirements.

A 5.   (ASIIN 6) Ensure that the students are informed about the results of the teaching evaluations and the resulting measures.

Recommendations

For all degree programmes

E 1.   (ASIIN 2.1) It is recommended to better align the content of the basic and the advanced modules.

E 2.   (ASIIN 2.1) It is recommended to enhance the use of the English language in the curriculum.

E 3.   (ASIIN 2.4) It is recommended to establish an institutional pathway of information regarding potential career perspectives and possible employers.

E 4.   (ASIIN 6) It is recommended to increase the students' participation in further developing the programmes.

A Fulfilment of Requirements

Requirements

For all degree programmes

A 1.   (ASIIN 2.2) Ensure that the awarded credits correspond with the students' total workload for each module, especially in regard to the practical training, internships and final projects.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: The university re-calculated the credit points and defined more credits for the internship and the final projects. From the point of view of the peers the workload correspond now to the defined credit points.
TC 01	fulfilled

	Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 02	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.

A 2. (ASIIN 2.2) Inquire systematically into the reasons why most of the students exceed the regular duration of 8 semesters.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: The university established a survey in all programmes regarding the reasons why students exceed the 8 semesters. As a result there were different specific reasons in the three programmes and the university took first measurements to improve the situation.
TC 01	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 02	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.

A 3. (ASIIN 4.3) It is necessary to visit and assess the technical infrastructure, safety measures, and facilities on site at Unesa.

Comment: could not yet be done due to ongoing travel restrictions. The deadline for the fulfilment of this requirement will be extended by the Accreditation Commission.

A 4. (ASIIN 5.1) Revise the module descriptions across the curricula with special regard to the module content and the examination requirements.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: The university submitts new modul descriptions.
TC 01	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 02	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.

A 5. (ASIIN 6) Ensure that the students are informed about the results of the teaching evaluations and the resulting measures.

Initial Treatment	
Peers	Fulfilled Vote: unanimous Justification: The university established an online system where students can inform themselves about the results of the evaluation. Additionally, lecturers now are obliged to discuss the results with the students of their courses.
TC 01	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 02	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers without any changes.

Draft resolution for the AC on 24.06.2022:

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Mechanical Enginee-ring Education	Requirement 3 not fulfilled		6 months prolonga-tion
Ba Electrical Engineering Education	Requirement 3 not fulfilled		6 months prolonga-tion
Ba Building Construction engineering	Requirement 3 not fulfilled		6 months prolonga-tion

Appendix: Programme Learning Outcomes and Curricula

According to the Academic Guidelines the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Mechanical Engineering Education:

Program Educational Objectives

1. Having the ability to plan, implement, evaluate, and develop curricula for scientific knowledge taught in vocational education that is relevant to the development of the global industry.
2. Having initiatives to adapt, innovate, and think positively to build technology-based networks based on Faith and Taqwa to God.
3. Having technopreneurship capabilities that are relevant to the development of the global industry.

4. Having the ability to perform maintenance, repair, and mechanical engineering that has environmental insight.

Program Learning Outcomes

The Undergraduate Program in Mechanical Engineering Education sets the Program Learning Outcomes (PLO) for the graduates as follows:

1. Able to align the curriculum of scientific knowledge in vocational education that is relevant to the demands of global industrial development.
2. Able to plan, implement, and evaluate innovative and effective learning programs in vocational engineering education that are relevant to the development of the global industry.
3. Able to apply applied research for innovation in vocational learning methods, optimization of production process technology and mechanical engineering services that are relevant to the needs of industrial development.
4. Able to think critically, creatively, analytically, synthesis-solutive, have a high work ethic, work together, build networks, and communicate oral-written in vocational engineering field accordance with the development of global industry.
5. Have a positive, honest, disciplined, diligent, aesthetic, efficient-effective, and responsible personality.
6. Able to operate mechanical and digital-based production machines to produce workpieces and maintain and repair motorized vehicles according to standard procedures relevant to the development of the global industry.
7. Able to apply technopreneurship, service advisor, supervisor of the mechanical engineering industry relevant to the development of the global industry.
8. Able to adapt to the development of science-technology, social environment, and continuous learning throughout life.
9. Able to apply concepts and theories of economic-business, ecology, occupational health-safety and environment in designing and carrying out relevant professional work in a sustainable manner.

The following **curriculum** is presented:

No.	Code	Courses	SKS	PLO									Semester
				1	2	3	4	5	6	7	8	9	
1	52324204	Engineering of Physics I	2				x						1
2	52524201	Health and Work Safety	2				x	x	x	x		x	1
3	52324206	Engineering of Chemistry	2				x						1
4	52324201	Mathematics I	2				x						1
5	52324220	Basic Drawing	2				x		x				1
6	52324212	Digital Literacy	2			x	x	x					1
7	90120206	Pancasila	2				x						1
8	52324221	Knowledge of Measuring Instruments	2				x						1
9	52324217	Mechanics Technology	2				x						1
10	90420304	Basic Education	3	x									1
11	52324214	Material Science I	2				x				x		1
12	90320202	English	2				x						2
13	52324213	Machine Element I	2				x						2
14	52324205	Engineering of Physics II	2				x						2
15	52324202	Mathematics II	2				x						2
16	52324208	Engineering Mechanics I	2				x						2
17	90120201	Religion Education	2					x			x		2
18	90120207	Citizenship Education	2					x			x		2
19	35324215	Engine Drawing	2				x						2
20	52324211	Thermodynamics I	2				x				x		2
21	90420302	Educational Psychology	2	x									2
22	90210206	Educational Philosophy	3	x									3
23	90210204	Indonesian	2				x						3
24	36324204	Machine Element II	2				x						3
25	90210203	Basic Cultural Science *	2					x			x		3
26	35314201	Automotive Electricity	2								x		3
27	52324219	Engineering Mathematics	2				x						3
28	52324209	Engineering Mechanics II	2				x						3
29	52324201	Fluid Mechanics	3			x	x						3
30	52424303	Learning Plan	3	x									3
31	52424301	Learning Strategy	3	x									3
32	35324210	Gasoline Engine Technology	2			x					x		4
33	36324216	Energy Conversion Engine	2				x				x		4
34	35324304	Automotive Electricity Practicum	2			x	x		x	x			4
35	35324219	Car Air Conditioner Technology	2			x					x		4

No.	Code	Courses	SKS	PLO									Semester
				1	2	3	4	5	6	7	8	9	
36	35324212	Diesel Engine Technology	2			x					x		4
37	35324218	Combustion and Fuel Technology	2			x					x		4
38	35324202	Thermodynamics II	2				x						4
39	52424304	Media Learning and ICT	3		x	x	x						4
40	52324302	Heat Transfer	3			x	x				x		4
41	35324303	Motorcycles & Small Engine Practicum	3			x	x		x	x			4
42	36324201	CAD	2				x						5
43	35324213	Painting Technology	2			x	x				x		5
44	52524202	Educational Management	2	x									5
45	35324205	Car Air Conditioner Practicum	2				x		x	x			5
46	52424302	Analysis of Vocational High School Curriculum	2	x									5
47	52424206	Research Methodology	2			x	x						5
48	52424305	Learning Evaluation	3	x	x	x							5
49	35424302	Gasoline Engine Practicum	3			x	x		x	x			5
50	35324214	Chassis Technology	2							x			5
51	52324210	Statistics	2		x	x	x						6
52	35424306	Diesel Engine Practicum	3			x	x		x	x			6
53	35424307	Body Painting and Repair Practicum	3			x	x		x	x			6
54	52424101	Thesis Proposal	1				x	x					6
55	35324222	Engine Performance Analysis	2			x	x			x			6
56	52324218	Corrosion Engineering	2			x					x	x	6
57	36424308	Chassis Practicum	3			x	x		x	x			6
58	90610303	Community Service (KKN)	3			x	x	x					6
59	90210209	Microteaching	2	x	x		x	x					6
60	35324208	Maintenance Machine Engineering	2							x			6
61	90210210	Teaching and Learning Program (PLP)	4	x	x	x	x	x					7
62	90520204	Internship	2			x	x	x	x	x			7
63	52424501	Thesis	5			x	x	x					7
64	90520203	Entrepreneurship	2			x	x		x		x		8
65		Courses Choice	2										8
Total			148	SKS									

According to the Academic Guidelines the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Electrical Engineering Education:

Program Educational Objectives

1. Mastering and implementing pedagogical, professional, personality, and social competencies in the electrical engineering expertise program. (teacher training)
2. Mastering Science and Technology and have knowledge in the field of electrical engineering and electronic engineering (knowledge and understanding)
3. Mastering analytical techniques and scientific methods to solve problems in practice in the areas of electrical engineering and electronic engineering. (engineering analysis).
4. The ability to design products in the field of electrical engineering and electronic engineering. (engineering design)
5. Having skills in developing products in the field of electrical engineering. (engineering practice and product development)
6. Having the ability to transfer knowledge and expertise in the field of electrical engineering. (transferable skills)

Program Learning Outcomes

1. Able to synchronize the curriculum of electric power and electronic engineering training in vocational education that is relevant to the demands of global industrial development (Education).
2. Able to plan, implement, and evaluate innovative and effective learning programs in vocational electrical engineering education that are relevant to the development of the global industry (Education).
3. Able to apply applied research to innovate vocational learning methods, optimize production process technology and electrical engineering services that are relevant to industry (Education).
4. Having extensive knowledge in the field of general knowledge, social, and humanities (Knowledge and understanding).
5. Able to communicate in Indonesian and English, both speaking, listening, reading, and writing (General).
6. Has a responsible character and is committed to professional ethics (General / SSC 4.6. Engineering practice and product development).
7. Having extensive knowledge of mathematics, science, and electrical engineering. Being able to solve complex problems that are typical in the electrification engineering and

electronics engineering expertise program by following the rules of scientific writing (SSC2.2. Engineering analysis).

8. Can analyze the research and development of electrification engineering and electronic engineering expertise program by following the rules of scientific writing (SSC2.2. Engineering analysis).

9. Able to design series, devices, and products in the electricity expertise and electronics engineering program (SSC3.1. Engineering design).

10. Being able to become a practitioner who can apply his knowledge and skills to develop products in the electrification engineering and electronics engineering expertise program in a comprehensive manner (SSC4.1. Engineering practice and product development).

11. Having the ability to project management and business practices in entrepreneurship as a form of lifelong learning through education/training formally and informally (SSC5.3. Transferable skills).

The following **curriculum** is presented:

1st Semester				2nd Semester			
Code		Course Title	CU	Code		Course Title	CU
1000002003	Core Personality Development Courses	Indonesian	2	1000002024	Core Personality Development Courses	Buddhist	2
1000002018	Core Personality Development Courses	Pancasila Education	2	1000002025		Hindu Religious	
1000003042	Personality Development Courses	Basics of Education	3	1000002026		Islamic	
	Basic Skills Courses	Learning Theory	2	1000002027		Catholic Religious	
8320103059	Scientific and Skills Courses	Basic Engineering Mathematics	3	1000002028		Confucius Religious	
8320103037	Scientific and Skills Courses	Engineering Physics	2	1000002029		Protestant Religious	
	Scientific and Skills Courses	Practical Physics Engineering	1	1000002033	Core Personality Development Courses	Civic education	2
8320102087	Scientific and Skills Courses	Vocational Education	2	8320103013	Personality Development Courses	English	3
8320102156	Scientific and Skills Courses	Basic Electric Circuit	2	1000002039	Personality Development Courses	Educational Psychology	2
					Personality Development Courses	Digital Literacy	2
				8320102067	Basic Skills Courses	Learning Media	2
				8320103060	Scientific and Skills Courses	Advanced Engineering Mathematics	3
				8320102159	Scientific and Skills Courses	Advanced Electrical Circuits	2
				8320102061	Scientific and Skills Courses	Basic Electromagnetic Field	2
				8320102030	Scientific and Skills Courses	Basic Digital Electronics	2
TOTAL			19	**TOTAL**			22

3rd Semester			4th Semester			
Code		Course Title	CU	Code		Course Title	CU
1000002011	Personality Development Courses	Basic socio-cultural / basic natural sciences	2	8320102178	Basic Skills Courses	Statistics	3
	Personality Development Courses	Physical Education and Fitness	2	8320103106	Basic Skills Courses	Innovative Learning Planning	2
8320103180	Scientific and Skills Courses	Learning strategies	2	8320102206	Basic Skills Courses	Educational Philosophy	2
8320102039	Scientific and Skills Courses	Computer programming	2	**Communication Electronics Expertise Program**			
8320102062	Scientific and Skills Courses	Advanced Electromagnetic Fields	2	8320102152	Scientific and Skills Courses	Basic Electronics Circuit	2
8320102031	Scientific and Skills Courses	Advanced Digital Electronics	2	8320103094	Scientific and Skills Courses	Digital Signal Processing	2
Communication Electronics Expertise Program				8320102010	Scientific and Skills Courses	Computer Applications in Electronic Studies	2
8320102123	Scientific and Skills Courses	Digital Electronics Practicum	1		Scientific and Skills Courses	Basic Telecommunications Systems	2
	Scientific and Skills Courses	Electronic image	2	8320103182	Scientific and Skills Courses	Audio Video Techniques	3
8320103025	Scientific and Skills Courses	Electronics	2	8320102049	Scientific and Skills Courses	Data communication	2
8320102164	Scientific and Skills Courses	Sensors and Actuators	2	**Electric Power Engineering Expertise Program**			
8320102184	Scientific and Skills Courses	Laser technique	2	8320103189	Scientific and Skills Courses	Refrigeration and Air Conditioning Engineering	2
8320102097	Scientific and Skills Courses	Electronic Measurement	2	8320102027	Scientific and Skills Courses	Power Electronics	2
Electric Power Engineering Expertise Program				8320102071	Scientific and Skills Courses	AC Electric Machine	2

832010201 2	Scientific and Skills Courses	Electricity Materials	2	8320103172	Scientific and Skills Courses	Control and Control System	2
832010203 9	Scientific and Skills Courses	Electrical Instrumentation and Measurement	2		Scientific and Skills Courses	Digital Electronics Practicum	2
832010206 7	Scientific and Skills Courses	Engineering drawings	3	8320102017	Scientific and Skills Courses	Electric Repair Shop	2
832010220 2	Scientific and Skills Courses	Transformer	2				
832010212 0	Scientific and Skills Courses	Electromechanical Basic Practicum	2				

5th Semester				6th Semester			
Code		Course Title	CU	Code		Course Title	CU
832010303 2	Basic Skills Courses	Learning Evaluation and Learning	2	8320103075	Basic Skills Courses	Research methodology	4
832010304 4	Basic Skills Courses	School Curriculum	2		Creative Work Course	Micro Teaching	2
	Scientific and Skills Courses	Education Management	2				
Communication Electronics Expertise Program				8320103052	Subjects for Social Life	Community Service Program	3
832010215 3	Scientific and Skills Courses	Advanced Electronic Circuit	2	**Communication Electronics Expertise Program**			
832010212 2	Scientific and Skills Courses	Electronics Practicum	1	8320103147	Scientific and Skills Courses	Electronics Design	3
832010304 1	Scientific and Skills Courses	Telecommunications Network	2	8320102006	Scientific and Skills Courses	Antennas and Propagation of Waves	2
832010317 5	Scientific and Skills Courses	Telecommunication System	2		Scientific and Skills Courses	Antenna Practices and Wave Propagation	1
832010213 3	Scientific and Skills Courses	Telecommunications Practicum	1	8320103064	Scientific and Skills Courses	Mechatronics	2

Code		Course Title	CU	Code		Course Title	CU
						(selective)	
8320102170	Scientific and Skills Courses	Fiber Optic Communication System	2	8320102193	Scientific and Skills Courses (selective)	Switching Techniques	2
8320103077	Scientific and Skills Courses	Microcontroller	3	**Electric Power Engineering Expertise Program**			
	Scientific and Skills Courses	Microcontroller Practicum	1	8320102095	Scientific and Skills Courses	Optimization and Operation of the Electric Power System	3
Electric Power Engineering Expertise Program				8320102004	Scientific and Skills Courses	Electric Power System Analysis	2
8320102130	Scientific and Skills Courses	Electrical Engineering Practicum	2	8320102084	Scientific and Skills Courses	Maintenance and Repair of Electrical Machines	2
8320103102	Scientific and Skills Courses	Electric Power Planning and Installation	3	8320102165	Scientific and Skills Courses	Electric Power System Simulation	2
8320103072	Scientific and Skills Courses	DC Electric Machine	2	8320103144	Scientific and Skills Courses	Electric Power System Protection	3
8320102126	Scientific and Skills Courses	Electrical Installation Practicum	2				
8320103139	Scientific and Skills Courses	Programmable Logic Controller (PLC)	2				
8320102128	Scientific and Skills Courses	Full Practice and Automation	2				

7th Semester				8th Semester			
Code		Course Title	CU	Code		Course Title	CU
8320102115	Scientific and Skills Courses	Internship	2	8320102207	Personality Development Courses	Entrepreneurship	2
	Creative Work Course	Introduction to School Field I	1	8320106177	Creative Work Course	Bachelor Thesis	6
	Creative	Introduction	3	**Communication Electronics Expertise Program**			

Code	Course Type	Course	Credit	Code	Course Type	Course	Credit
	Work Course	to School Field II					
Communication Electronics Expertise Program					Scientific and Skills Courses (selective)	IoT	2
8320102162	Scientific and Skills Courses	Industrial Robot	2	**Electric Power Engineering Expertise Program**			
8320102146	Scientific and Skills Courses (selective)	Radar and Navigation	2	8320102194	Scientific and Skills Courses (selective)	High Voltage Engineering	2
	Scientific and Skills Courses (selective)	Embedded System	2	8320102019	Scientific and Skills Courses (selective)	Scada Basics	2
	Scientific and Skills Courses (selective)	Industrial Automation	2				
Electric Power Engineering Expertise Program							
8320103176	Scientific and Skills Courses	Electric Power Transmission System	3				
8320102168	Scientific and Skills Courses	Electric Power Distribution System	2				
	Scientific and Skills Courses	Electric Energy Generation	2				
8320102085	Scientific and Skills Courses (selective)	Selection and Use of Electric Motors	2				
8320102104	Scientific and Skills Courses (selective)	Electric Power Network Planning	2				
8320102105	Scientific and Skills Courses (selective)	Electrical Engine Planning	2				

According to the Academic Guidelines the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Building Construction Education:

Program Educational Objectives

1. Able to use competence to overcome problems related to Vocational Education, and in the field of building construction.
2. Able to learn throughout life by continuing education and training through both formal and informal activities.
3. Able to communicate well, work in teams, and be active in professional organizations in the field of Vocational Education, and building construction.
4. Able to become professional who are ethical and responsible in the field of Vocational Education, and building construction.

Program Learning Outcomes

1. Able to harmonize the curriculum of the eyes of his scientific training in vocational education that is relevant to the demands of the development of the global industry.
2. Able to plan, implement, and evaluate innovative learning programs in Building Engineering vocational education that are relevant to the development of the global industry.
3. Able to apply applied research for innovation in vocational learning methods and optimization of building technology products and services that are relevant to industry needs.
4. Having the basic character of an educator and professional who is responsible and has good ethics.
5. Able to master and apply basic knowledge that supports expertise in the field of building construction, communicating and presenting building engineering knowledge to various problem areas
6. Able to implement ideas to develop entrepreneurial activities
7. Able to develop themselves and learn to live a lifetime to continue their education to a higher level, both formal and informal
8. Able to design construction work in the form of surveys, design drawings, structural analysis, budget analysis and management.
9. Able to apply construction work ranging from surveys, work drawings, structural analysis, budget analysis and management.
10. Able to evaluate construction work in the form of finished drawings, structural analysis, budget analysis, and management

The following **curriculum** is presented:

No	Courses	Category	CU	Semester							
				1	2	3	4	5	6	7	8
Core Personality Development Course											
1	Buddhist religion education	Required	2		2						
	Hindu Religion Education										
	Islamic religion education										
	Catholic Religion Education										

No	Courses	Category	CU	1	2	3	4	5	6	7	8
	Confucius Religion Education										
	Protestant Religion Education										
2	Civic education	Required	2			2					
3	Principles of Pancasila	Required	2	2							
4	Indonesian	Required	2	2							
Science and Skills Courses											
5	Differensial Calculus	Required	3	3							
6	Non-storey Building Construction	Required	2	2							
7	Concrete Technology and Laboratory	Required	2	2							
8	Plumbing Work	Required	2	2							
9	Integral Calculus	Required	3		3						
10	Low-rise Building Construction	Required	2		2						
11	Materials Technology and Laboratory	Required	3		3						
12	Structural Analysis of Determinate Static	Required	3		3						
13	Soil Physical Properties and Laboratory	Required	2		2						
14	Environmental Science	Required	2			2					
15	Drawing of Civil Buildings	Required	3		3						
16	Structural Analysis of Undeterminate Static	Required	3			3					
17	Concrete Structures	Required	4			4					
18	Stone Practice, Reinforcement, and Formwork	Required	3			3					
19	Surveying and Laboratory	Required	3				3				
20	Foundation Design	Required	3				3				
21	Steel Structures (Frames and Portals)	Required	3				3				
22	Bridge Structure	Required	2				2				
23	Vocational Education	Required	2					2			
24	Technical Drawing of Building Public Facilities	Required	2				2				
25	Mapping and Laboratory	Required	3					3			
26	Seismic Engineering	Required	2					2			
27	Irrigation & Water Building	Required	3					3			
28	Construction Cost Estimation	Required	2					2			
29	Carpentry	Required	2					2			
30	Drawing of a 2-storey residence	Required	2			2					
31	Building Instalations	Required	2						2		
32	Project Planning and Control	Required	3						3		
33	Civil Structure Design **	Required	4						4		
34	Internship	Required	2							2	
35	Wood Structure *	Optional	2							2	
36	Structure of Highway *	Optional	2						2		
37	Drainage *	Optional	2						2		
38	Contruction Equipment *	Optional	2					2			
39	Furniture and Laboratory *	Optional	2							2	
40	Structural Analysis of Matrix Methods *)	Optional	2							2	

No	Courses	Category	CU	Semester							
				1	2	3	4	5	6	7	8
41	Constructions Quality Control *	Optional	2							2	
42	Management Workshop/Laboratory *	Optional	2							2	
Institutional Personality Development Courses											
43	English	Required	3	3							
44	Social and Cultural Sciences	Required	2			2					
45	Entrepreneurship	Required	2				2				
46	Digital Literacy	Required	2		2						
47	Physical Education and Fitness	Required	2				2				
48	Basic Education *)	Required	3	3							
49	Education Psychology *)	Required	2		2						
Basic Skills Courses											
50	Research Methodology	Required	4						4		
51	Statistics	Required	3					3			
52	Educational Philosophy	Required	2	2							
53	Learning Theory	Required	2				2				
54	School Curriculum	Required	2		2						
55	Innovative Learning Planning	Required	2					2			
56	Learning Media	Required	2				2				
57	Learning Evaluation and Learning	Required	2				2				
Community Life Program											
58	Community Service	Required	3						3		
Creative Work Course											
59	Micro Learning	Required	2						2		
60	Introduction to School Field I	Required	1			1					
61	Introduction to School Field II	Required	3						3		
62	Final Report	Required	6								6
			135	151	21	24	21	21	21	22	15	6

Allocation per semester
Semester 1 : 21
Semester 2 : 24
Semester 3 : 21
Semester 4 : 21
Semester 5 : 21
Semester 6 : 22
Semester 7 : 15
Semester 8 : 6
Total : 151