ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes

- *Mechanical Engineering Vocational Education*
- *Automotive Engineering Vocational Education*
- *Building Engineering Vocational Education*
- *Informatics Education*

Provided by
Universitas Negeri Padang (State University of Padang, Indonesia)

Version: 18.03.2022

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]
Sarjana Pendidikan (S.Pd)	Bachelor of Education in Mechanical Engineering	ASIIN		TC 01
Sarjana Pendidikan (S.Pd)	Bachelor of Education in Automotive Engineering	ASIIN		TC 01
Sarjana Pendidikan (S.Pd)	Bachelor of Education in Building Engineering	ASIIN		TC 03
Sarjana Pendidikan (S.Pd)	Bachelor of Education in Informatic Engineering	ASIIN		TC 04
Date of the contract: 22.05.2020 **Submission of the final version of the self-assessment report:** 21.04.2021 **Date of the online visit:** December 8th to 10th 2021 **at: Online visit**				
Peer panel:				

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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; TC 04 - Informatics/Computer Science; TC 05 - Materials Science, Physical Technologies; TC 06 - Engineering and Management, Economics; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Nutritional Sciences and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics.

Prof. Dr. Heinz-Peter Gumm, University Marburg Prof. Dr. Klaus Habermehl, University of Applied Sciences Darmstadt Prof. Dr. Martin Lang, University Duisburg-Essen Dipl.-Math. Guido Mandorf, Siemens AG Prof. Markus Seefried, University of Applied Sciences Munich Franziska Chuleck, TU Darmstadt	
Representative of the ASIIN headquarter: Dr. Jesús Pineda	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of December 10, 2015 Subject-Specific Criteria of Technical Committee 01 Mechanical Engineering/Process Engineering as of 2011-12-11 Subject-Specific Criteria of Technical Committee 03 Civil Engineering, Geodesy, Architecture as of 2011-12-11 Subject Specific Criteria of Technical Committee 04 Informatics as of 2018-03-29	

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
Pendidikan Teknik Mesin, Sarjana Pendidikan (S.Pd)	Bachelor of Education in Mechanical Engineering (MEVE)	1. Fabrication 2. Machine construction 3. Machining	Level 6	Full time	Not available	8 semesters (4 years)	144 SKS credit point; equivalent to 226 ECTS	Annually 1 September 1977
Pendidikan Teknik Otomotif , Sarjana Pendidikan (S.Pd)	Bachelor of Education in Automotive Engineering	No specialization	Level 6	Full time	Not available	8 semesters (4 years)	145 SKS credit points; equivalent to 228 ECTS	Annually 1 September 1979
Sarjana Pendidikan (S.Pd)	Bachelor of Education in Building Engineering	No specialization	Level 6	Full time	Not available	8 semesters (4 years)	144 SKS credit point; equivalent to 226 ECTS	Annually 1 September 1979
Pendidikan Teknik Informatika, Sarjana Pendidikan (S.Pd)	Bachelor of Education in Informatic Engineering	1. Software engineering 2. Computer networking 3. Multimedia	Level 6	Full time	Not available	8 semesters (4 years)	149 SKS credit point; equivalent to 233 ECTS	Annually 1 September 2007

For the **Bachelor of Education in Mechanical Engineering (MEVE)** the institution has presented the following profile in the self-assessment report (page 11):

Graduates

possess a good ability to apply the basic science (mathematics and natural sciences) and other disciplines in professional jobs / projects (Knowledge-understanding)

- possess a good understanding and can apply the basic concepts of mathematics to solve various technical problems
- possess a good understanding and can apply the basic concept of physics to solve various technical problems
- possess a good understanding and can apply the basic concepts of chemistry to solve various technical problems

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

possess critical and creative thinking in identifying, formulating, problem solving and evaluating various problems in mechanical engineering using the most appropriate and effective scientific methods (engineering analysis, investigations and assessment):

- problem identification skills
- problem analysis skills
- problem evaluation skills

possess a good ability in designing, manufacturing and operating machines (Engineering design) and are

- able to formulate ideas/concepts into a technical drawing, design and budget plans
- able to operate various machines and other engineering equipment with the correct standard operating procedure
- able to design a machine or machinery system based on a valid scientific theory
- able to realize a concept/design into a prototype, manufacturing process and engineering system

possess a good ability to design, organize and evaluate the education and learning process in mechanical engineering vocational education and are

- able to design a curriculum and learning processes by considering various aspects
- able to organize, control, evaluate and improve the quality of the learning process
- able to develop interesting, effective and efficient learning medias.

They possess a good ability to adapt to developments in science and technology and apply it into professional jobs by considering any non-technical aspects and are

- able to innovate and develop technology in the field of mechanical engineering by considering social, economic and environmental aspects
- able to carry out the optimization process and increase the efficiency of machines or machining system.
- able to improve the performance of machine/ machinery system by applying information technology

Possess good softskills and a spirit of lifelong learning (Transferable skill / softskill)

- possess a religious character
- possess a spirit of nationalism, social sensitivity and environmental conservation orientation
- possess the ability to communicate effectively and work together in teams

- possess the ability to transfer science and technology to society to improve the quality of life
- possess a good character of entrepreneurship"

For the **Bachelor of Automotive Engineering Vocational Education (AEVE)** the institution has presented the following profile in the self-assessment report (Page 13):

Graduates

1. are able to design learning tools regarding to lesson plans (RPP), teaching materials, media, student worksheets (LKPD) and learning evaluations in vocational high schools or in educational and training institutions or the automotive engineering industry both offline and online learning.

2. are able to apply the automotive engineering knowledge and skills through maintenance and repair of internal combustion motor systems, vehicle bodies, chassis and power transfer, and electricity.

3. are able to master the basics of automotive engineering by developing scientific concepts of vehicle motion mechanics, mechanical elements, physics, chemistry, fluid mechanics, thermodynamics, heat transfer, engineering mathematics, and engineering materials.

4. are able to formulate the basics of problem solving in the automotive engineering using automotive simulation and computing skills, vehicle testing, vehicle maintenance, and automotive systems.

5. are able to implement pedagogic knowledge by developing the educational basics, educators psychology, administration and education supervision, guidance and counseling, instructional media, learning evaluation, and educational practice.

6. are able to master science in self-development in either education or industry field by classifying the curriculum concept of technology and vocational education, vocational pedagogy, and special teaching methods, career guidance, and human resource management.

7. are able to apply science in the industrial engineering by formulating technical economic, entrepreneurship, industrial management, industrial psychology, pollution and the environment theory.

8. are able to design the automotive component by formulating the concept of engineering drawings, engineering mathematics, engineering materials, simulation and computation.

9. are able to become an entrepreneur by applying ideas and concepts as an effort to develop an entrepreneurial spirit by increasing the knowledge of information and communication technology, entrepreneurship (technopreneur), and English or other foreign languages.

10. become a person with noble character by applying religious values, Pancasila, norms and values that develop in the education and industry world."

For the **Bachelor of Building Engineering Vocational Education (BEVE)** the institution has presented the following profile in the self-assessment report (page 15):

Graduates

1. are able to apply basic science knowledge (mathematics, natural sciences) and other multidisciplinary disciplines which become the foundation for the Building Engineering Vocational Education in carrying out professional work in their respective fields (Knowledge and Understanding).

1.1. are able to show good understanding and be able to implement mathematical basic concepts to figure out various problems in the building engineering.

1.2 possess a high understanding and implement the physics basic concepts in the building engineering.

1.3. possess a high understanding and be able to implement the chemistry basic principles in the building engineering.

2. are able to think critically and creatively in identifying, formulating, problem solving, evaluating various problems in the Building Engineering Vocational Education by the most appropriate and effective scientific method (Engineering analysis, investigations and assessment).

2.1. are able to identify, classify, and formulate technical problems in the building engineering.

2.2. are able to analyze, select, and implement technical problems solving methods in the building engineering.

2.3. are able to evaluate various technical problems in the building sector related to environmental, social, health and safety issues.

3. possess a reliable ability to realize the design/implementation and supervision of building engineering works related to environmental, social, health and safety issues (Engineering design).

3.1. are able to realize work drawings in various related parties collaboration.

3.2. are able to manage building engineering work by paying attention to environmental, social, health and safety aspects.

3.3. are able to supervise the implementation of building engineering works by paying attention to environmental, social, health and safety aspects.

4. possess reliable abilities in designing, implementing and evaluating the learning process in Building Engineering Vocational Education (Education design).

4.1. are able to design curriculum and learning process in the building engineering.

4.2. are able to implement, control, evaluate and improve the quality of the learning process.

4.3. are able to develop effective, efficient and attractive instructional media.

5. possess the ability to adapt and innovate to the development of science and technology and implement it into educational goals and professional work by considering non-technical risks that may occur (ethics, ecology, commercial and industrial impacts) (Engineering practice).

5.1. are able to innovate and develop technology in the building engineering by considering to social, economic and environmental aspects.

5.2. are able to analyze environmental conditions in the planning, implementation and supervision of building works.

5.3. are able to implement the information technology and computers into the planning, implementation and supervision process of building works.

6. possess social and managerial competence, collaboration, communicating effectively, having entrepreneurial character, having an environmental perspective and being aware of the importance of lifelong learning (Transferable and softskill).

6.1. possess a religious character which is implemented in all personal and professional activities.

6.2. possess a national spirit, social sensitivity and environmental perspective.

6.3. are able to communicate effectively and collaborate in a team work

6.4. are able to transfer science and technology to society to improve the quality of life

6.5. possess an entrepreneurial character

For the **<u>Bachelor of Informatic Education (IE)</u>** the institution has presented the following profile in the self-assessment report (page 18):

Graduates

1. have a leadership spirit, have ethics, techno-preneurship, and are highly competitive in the national and international job market [Softskill]

2. are able to implement basic knowledge of Informatics and Computer Engineering in the workplace. [Discrete Mathematics, Electrical Physics, Basic Electronics]

3. are able to analyze theoretical concepts in the field of Information and Computer Engineering in solving problems in the workplace. [basic algorithms and programming, databases, operating systems, computer networks]

4. are able to implement the applied concepts in the Informatic Engineering, which includes Software Engineering, Computer Networks, Multimedia, and Information Technology and Computer Applications (Computer Literacy).

5. are able to analyze, design and interpret software data in the fields of Information and Computer Engineering, education and teaching. [Information Systems Analysis andSoftware engineering]

6. have good interpersonal skills, as well as the ability to communicate in foreign languages orally and in writing. [English and Japanese].

7. keep up with the latest developments, especially in the field of Vocational and Computer Information Engineering, and can continue to expand and deepen the knowledge previously acquired.

8. have sufficient knowledge of the basic concepts of students, teaching, learning, assessment, and learning evaluation which are packaged in a multiplatform software."

C Peer Report for the ASIIN Seal

1. The Degree Programmes: Concept, content & implementation

> **Criterion 1.1 Objectives and learning outcomes of the degree programmes (intended qualifications profile)**

Evidence:

- Academic handbook Universitas Negeri Padang 2020/2021: Faculty of Engineering

- Statistics of students and faculty

- Documentation of stakeholder involvement in the preparation of the study programme curriculum

- Regulation of academic activities of Universitas Negeri Padang

- Meeting with Representatives of the Rectorate of the University on December 8th 2021

- Meeting with Programme Coordinators on December 8th 2021

Preliminary assessment and analysis of the peers:

The Faculty of Engineering manages all four programmes under review. The peers base their analysis on the detailed information provided in the Self-Assessment Report as well as the numerous evidences provided during the preparation of the online audit. The university has offered detailed information on the vision and mission of both the institution as a whole as well as the faculty in question. The four study programs under review seek to be aligned with those principles. As a result, the institution follows those principles as orientation in order to determine the graduate profile, the program learning outcomes, and the expected competencies that every graduate of the programmes must possess. In addition to that, various activities are organised with different stakeholders for the development of the programmes. Some of these are schools, industry, education practitioners, professional associations of the respective fields and government agencies to name a few. Based on this feedback as well as tracer studies from alumni of the programmes the institution has developed a clear portfolio of key competences of the programmes such as strong mastery of natural sciences as a basis for analysis, mastery of technology in science,

information technology, mastery of quality educational sciences, committees, and characters building and qualified soft skills. Furthermore, a Task force team conducts a series of in-depth meetings, discussions, etc. within a set timeframe.

All interviewed stakeholders (students, teaching staff, alumni and industry representatives) conveyed an overall positive impression about the programmes under review. A strong sense of belonging of the alumni can be observed. Some study programmes witness a close contact with the industry. Representatives of the industry indicate that the graduates are regarded to display good personality traits and show themselves as interested and fast learners.

According to the PEOs and PLOs as well as the discussions during the online visit, the peers understand that the graduates of all programmes should be qualified for a variety of professional roles that could come into question. In the self-assessment report the institution lists the following roles: professional educators, professional industry practitioners, auditors, consultants or entrepreneurship in the respective fields. For these different profiles they are supposed to be able to apply all knowledge and expertise in professional work, able to apply their educational knowledge in the educational professional work and possess the integrity, religious, effective communication and entrepreneurial spirit.

The experts argue that the learning objectives of the programmes do not reflect all specific themes, which can be found in the study plans. The matching between these two dimensions should be achieved more appropriately. Furthermore, a specific definition of qualification profiles of the programmes is missing, given that the areas previously mentioned are too broad.

The experts miss especially a critical focus on educational topics for an appropriate teaching profile. This assumption has been confirmed by the discussion with alumni and employers. Evidence gathered during the online visit indicates that the majority of graduates decide to pursue a career in a company and not in the educational system. To avoid misunderstandings of the qualification intended with the programmes, it would be appropriate to reflect on possible changes of the profile of the applicants defined in the study aims with a stronger "vocational education" focus.

During the online visit the peers were made aware of the fact that the open profile is intended to offer more job prospects for the graduates given a high competition and limited prospects. Employers did not find a problem with the mixed profile. Consistent with the

previous observation, the description of the programme objectives is at times very ambitious considering the lack of depth on both applied as well as educational topics.

Considering the fact that UNP also offers Bachelor's programmes in "Mechanical Engineering" and "Civil Engineering" it seems not to be necessary to define more open profiles for the educational programmes under review as those students who want to work in industry may choose the "classical" engineering programmes directly.

Overall, the differences between those classical engineering programmes and the educational programmes should be named more distinctly in the study goals. In order to avoid misunderstandings by applicants for the programmes the intended educational profiles should be explained more clearly in the study aims notwithstanding the opportunity for students to work in industry as well.

From the point of view of the peers UPN has to ensure that the objectives of all programmes under review define specific qualification profiles of the graduates including the specific contents of the different progammes and corresponding with the names of the programmes.

Criterion 1.2 Name of the degree programmes

Evidence:

- Self-assessment report
- Decree of the Minister of Research, Technoogy and Higher Education of the Republic of Indonesia No. 257 / M / KV172017
- Meeting with Programme Coordinators on December 8th 2021
- Meeting with partners from the industry/private sector on December 9th 2021

Preliminary assessment and analysis of the peers:

The names of all programmes are published on the subject specific webpages. The peers confirm in general that the titles of the programmes under review reflect the intended aims to train teachers for vocational education in engineering and informatics. To make these profiles more clearly and to avoid the obvious misunderstandings mentioned above it could

be helpful to use the alternative titles used in some documents, namely Bachelor of Education with the specific majors or areas of specialization.

In the case of the Informatics programme the peers critizise the English abbreviation IE, given that it could mean either "Informatic Education" or "Informatic Engineering". Furthermore, they remark that the English translation should be corrected to "informatics" instead of "informatic".

Criterion 1.3 Curriculum

Evidence:
- Self-assessment report
- Student handbook
- The statutes of Universitas Negeri Padang
- Webseites of all study programmes
- Meeting with Programme Coordinators on December 8th 2021
- Meeting with partners from the industry/private sector on December 9th 2021

Preliminary assessment and analysis of the peers:
In order to achieve the established Programme Learning Outcomes, each study programme proposes an integrated course structure. The curricula, courses and teaching materials are updated regularly according to identified needs of industry, graduates and current developments of science and technology. Accordingly, in 2019 there was a basic curriculum change in all study programmes to adapt to technological advances due to the 4.0 industrial revolution. Furthermore, in 2020, the curriculum of all study programmes at the Faculty of Engineering were revised.

All programmes must be completed within 4 years (8 semesters)including:

- Educational internship program for 3 months at various partner schools

- Industrial internship for 2 months in industrial companies

- Community service programme for 2 months to help community problems in remote area

- and final project.

When it comes to the structure of the curriculum the peers highlight the positive characteristic that the study programmes are designed in a manner that students get the possibility to engage in social activities outside of the classroom.

On the other side, the peers find the issues of the objectives of the programmes continued in the curricula. As mentioned in the study aims the university pursues a broad profile of the students with the opportunity to work as vocational teacher but as well to work for industry. Correspondig to these objectives the curricula do not focus neither on pedagogical and didactical aspects nor on engineering competences. As a result, the panel finds a lack of in-depth treatment of scientific concepts and methods for the engineering part as as well as for the educational aspects. The peers argue that reaching a high professional level as both an educator and an engineer might be difficult to achieve with the programme structure.

In the case of the MEVE programme the self-assessment report states e.g. that graduates "possess a good ability in designing, manufacturing and operating machines". The expert team could not see that this aim to correspond with the study programme, given that graduates from the programme cannot design machines.

A similar observation has been made when it comes to the AEVE programme, when in the self-assessment report the following objective is listed "Able do design the automotive component […] simulation and computation" while in the view of the panel, such objectives are not implemented in the curriculum.

When it comes to the Curriculum of the BEVE programme, the peers observe an important field that has been completely neglected from the programme. Namely, the sensibility in terms of inclusion to deal with disabled individuals when considering building new infrastructure.

Similar the pedagogical and didactical parts are presented not in-depth in general and seems not to be focused on specifications of vocational education as mentioned in the names of the programmes. Therefor from the point of view of the peers it is necessary for the <u>degree programmes in automotive, mechanical and building engineering vocational education</u> to ensure that the names of the degree programmes, their intended learning outcomes and the content correspond with each other.

In the discussion with representatives of the labor market the peers learned that the communication skills of graduates could be improved. Therefore, the peers recommend to offer more opportunities to the students to train their communication skills.

When it comes to the <u>bachelor programme Informatics Education</u> it is not possible for the peers to assess the programme at this point. During the visit the experts found out that the institution has a new curriculum implemented with substantial differences to the one described in the self-assessment report. Therefore, at the time of the visit it is not possible for the peers to assess the current curriculum of the programme. They ask for additional

information of the current curriculum, including the current structure of the programme and current module descriptions. Based on this additional information the peers will assess the curriculum later on. In case additional discussion with UNP are needed to clarify questions regarding the new curriculum a further online visit might be necessary.

Criterion 1.4 Admission requirements

Evidence:

- Self-assessment report

- Document "The admission of new students for diploma, undergraduate, master and doctorate programmes at Universitas Negeri Padang)

- The statutes of Universitas Negeri Padang

- Meeting with Programme Coordinators on December 8th 2021

Preliminary assessment and analysis of the peers:

Admission requirements are structured based on the Rector's Regulation No. 05 from February 19th, 2018. In general, prospective students of the Faculty of Engineering are graduates from vocational high schools and high schools with a maximum graduation of 3 years from the year of admission. The admission process for new students is carried out through three types of selection, which determine the respective percentages of admission:

- SNMPTN Administration Selection: 30%

This procedure consists of an invitation selection without a written exam intended for outstanding students who will graduate in the respective year concerned. Prospective students who apply via SNMPTN must have a recommendation from their respective school. There are clear rules in place to determine who these students are depending on the institution they come from.

- The National Administration Selection (SBMPTN): 40%

SBMPTN is a college administration selection of public/state universities that is carried out through both a Computer Based Testing and Paper Based Testing. One of the requirements that must be fulfilled by prospective students who take part in this approach is to meet the minimum score set by the national selection committee. This grade score is determined by

the national committee based on the number of applicants and the test scores for the given year.

- UNP Selection: 30%

The UNP administration selection is a procedure directly held by the institution. Prospective students who previously took the SNMPTN and SBMPTN schemes but did not pass, may re-register on the independent administration selection system.

In the self-assessment report concrete figures are available to understand how the students come from the different admission schemes. If for three consecutive years, the number of students who register and are accepted does not reach half of the minimum quota set, then a comprehensive evaluation will be carried out on the sustainability of the study program. If necessary, operations will be stopped.

In general terms the peers found the admission procedures to be clear, binding and transparent. There are clear rules as to how individual admission requirements that have not been fulfilled can be compensated. As a matter of fact, the expert team observes that the acceptance rates are low which indicates a high level of exclusivity.

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

As the university does not comment on the report the peers confirm their former assessement for the bachelor degree programmes of education in Mechanical Engineering, Automotive Engineering and Building Engineering. They find the criterion not completely fulfilled and suggest requirements about the objectives of the programmes and the education aspects. Additionally, they suggest to focus the qualification profile more on "vocational" education and to offer more opportunities for students to train their communication skills.

The bachelor degree programme of Informatics Education will be assessed finally after the asked additional information about the curriculum and module description is submitted by the university.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-assessment report

- Student handbook

- Regulation of academic activities of Universitas Negeri Padang

- Educational internship programme implementation and assessment guidelines

- Webseites of all study programmes

- Meeting with Teaching Staff on December 10th 2021

- Meeting with partners from the industry/private sector on December 9th 2021

Preliminary assessment and analysis of the peers:

The institution has arranged certain specialsation areas to achieve the goal of preparing students for complex labour market conditions for some of the programmes. One example is the MEVE programme with study of fabrication, machine construction and machining. The AEVE and BEVE programmes concentrate in general studies, without any specialization. When it comes to the <u>informatics education programme</u> it is not possible to elaborate on the structure at this point as the peers have not sufficient information about the current structure.

The courses in the <u>automotive, mechanical and building engineering vocational education programmes</u> have been designed in a logical relation with other courses. The roadmaps for students describe the process of achieving the PLOs for each study programme through modules that have been systematically prepared. All modules are related to the PLO achievement. In the self-assessment report, the institution has provided very detailed informaton about the concret development and implementation of the structure of each programme.

The Self-Assessment Report as well as the discussions make it very clear that international recognition is one of UNP'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.

The peers learn that the university in general already provides some opportunities for students to conduct internships and study semesters abroad. There are Memorandums of Understanding with 33 universities worldwide, although with a certain focus on China, Japan and South-East Asia, partly regarding student exchange, partly regarding research collaboration. There is also the opportunity of a one-month teaching internship in other South-

East-Asian countries. The students confirm that these different mobility options are adequately communicated via the website, social media and personally through their academic advisors.

Depite these offers the peers learned that the teaching staff as well as the representatives of the labor market see a lack of international experiences of students. As the student demand for studying abroad seems to be not very high the peers recommended to improve the support for the student mobility.

Criterion 2.2 Work load and credits

Evidence:
- Self-assessment report
- Regulation of academic activities of Universitas Negeri Padang
- Meeting with Students on December 9th 2021
- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:
Based on the National Standards for Higher Education of Indonesia (SNPT), all four degree 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 amount of the programmes under review is 145-149 SKS.

1 SKS of academic load is equivalent to 170 minutes per semester week. For lectures, tutorials and similar classes, this means 50 minutes of face-to-face activity, 60 minutes of structured tasks and 60 minutes of independent learning per semester week, whereas for seminars and similar forms of learning, it is 100 minutes face-to-face activity and 70 minutes of independent learning. For laboratory work, internships, community service etc., 1 SKS equals 170 minutes of the respective activity 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. As UNP explains, 1 SKS (170 min x 14 weeks) is supposedly equal to 1.58 ECTS (1 ECTS = 25 hours).

The students' workload is evaluated at any time by considering the progress of each student. Evaluation of students'achievement is measured by the total percentage of the credit course (SKS) based on a previously defined plan. If students are able to complete the number of credits faster than planned, it is considered as proof of success. Student progression statistics related to the percentage of credit completion and the average of students GPA

scores in each programme were provided by the institution. The peers acknowledge that a credit point system based on the students' workload is in place.

Criterion 2.3 Teaching methodology

Evidence:

- Self-assessment report
- Academic handbook Universitas Negeri Padang 2020/2021: Faculty of engineering
- Regulation of academic activities of Universitas Negeri Padang
- Matrix of learning method for all modules/courses
- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:

The degree programmes are designed to be well-balanced between attendance-based learning and self-study phases. According to the self-assessment report several teaching methods are implemented at the Faculty of Engineering. Some examples are classical teaching methods, demonstration, practice, individual task (e.g. project based learning), group discussion and experimental method. The specific teaching methods for each course is transparently communicated in a variety of evidences examined. In order to improve the academic experience, students are involved in research activities as well as community service carried out by lecturers. Learning outside the classroom such as industrial internship, educational internship, and community service programs are carried out to synchronize between theory and implementation in both the industry and the community.

In general, the expert team had the impression that the institution puts a great deal of effort to offer students a variety of teaching methods. Furthermore, the institution managed to deal successfully with the shift from offline to online teaching during the pandemic.

One critical aspect are the quite different internship experiences of the students. During the discussion with the panel students describe in some cases a lack of preparation and accompanying to profit from their on-the-job training. From the point of view of the peers the university is responsible for the quality of the internship and has to ensure that students are trained and supported adequately by companies or schools.

This could be done e.g. by implementing preparation periods at the university, accompaniment of the students by lecturers during the internship phases and a post-internship reflection exercise. Through this approach the practical component can be more integrated into the study programme as a whole for a improved benefit of the students. In this context

the panel recommends to extend the internship from three to six months to offer students a stronger preparation for the labour market.

Criterion 2.4 Support and assistance

Evidence:

- Self-assessment report

- Academic handbook Universitas Negeri Padang 2020/2021: Faculty of engineering

- Meeting with Programme Coordinators on December 8th 2021

- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:

All study programmes of the Faculty of Engineering provide individual assistance, advice and support for all students. The allocated advice and guidance (both technical and general) on offer assist the students in achieving the learning outcomes and in completing the course within the scheduled time. Some relevant facilities that can be mentioned are libraries, internet connection, and scientific seminars for students. Each student is given an online account to access all kinds of academic information and reference books. The institution puts emphasis on financial aid given that not all students have sufficient financial means. In addition to academic support, the university also provides a health clinic, counseling assistance and career guidance to name a few. Students can be involved in various study groups and channel their interests through various campus organisations. There are also structures in place to deal with students with disabilities.

The main contact person for every student is their academic advisor, which is assigned to them in their first semester. An academic advisor shall help them develop an adequate schedule for their studies, choose electives according to their skills and interests and support them in case of academic and non-academic problems. The advisor also monitors their study progress and supports them if there are problems. Moreover, senior students provide academic assistance organised by student associations in each study programme. Through the e-learning website and academic portal, all necessary information is provided to the students.

The peers conclude that 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.

Regarding the information material given to the students the peers learned out of the discussions during the visit that the so-called road maps or study guides seems to be quite

complex. In order to facilitate the understanding for the students it is recommended to simplify the presentation of the programme structure in these documents.

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

As the university does not comment on the report the peers confirm their former assessment for the <u>bachelor degree programmes of education in Mechanical Engineering</u>, <u>Automotive Engineering</u> and <u>Building Engineering</u>. They find the criterion not completely fulfilled and suggest a requirement to ensure that students get adequate practical experiences during their internships at companies and at schools as well. Especially internships at schools have to be reflected in theoretical lectures. Additionally, they suggest recommendations about the student mobility, the internships and the information material about the study regulations.

The <u>bachelor degree programme of Informatics Education</u> will be assessed finally after the asked additional information about the curriculum and module description is submitted by the university.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:
- Self-assessment report
- Academic handbook Universitas Negeri Padang 2020/2021: Faculty of engineering
- Regulation of the President oft he Republic of Indonesia numer 8 of 2012 concerning Indonesian National Qualification Framework
- Educational Internship Programme implementation and assessment guidelines
- Regulation of the Rector of Universias Negeri Padang Number 03/2017 concerning academic regulations
- Examples of exams and projects
- Student final project guideline
- Meeting with Students on December 9th 2021
- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:

Examinations in all study programs at the Faculty of Engineering must be able to measure the achievement of the educational objectives of each module. Given that each module has different characteristics, the exam methods used are adapted to the specific conditions of each module. For each module, a form of assessment is clearly defined. Module assessment is customized by type of module (theory /practice) and each course has an assessment form and its weight of each assesment component.

All exams are organised in a way which avoids delays to student progression caused by deadlines, exam correction times, re-sits etc. The exam schedule is set by the department according to the UNP guidelines through the predefined academic calendar. There are mechanisms in place which ensure that all students learn the details of what is required in order to pass each module (pre-examination elements, assignments etc.) In addition, the implementation of exams is also aimed at obtaining feedback of all students on their achievement progress and the learning quality. The exams methods used has been described in detail in the self-assessment report. There are several evaluation methods such as mid-semester examination, group discussions and presentations, assignments/projects, final semester examination and internship reports.

In general, exams are held on week 8 (middle semester exam), week 16 (final semester exam) and quizzes for theory module. Portfolio assessment, performance appraisal, and final semester exam (week 16) are carried out in a practice module. Exams are structured to cover all of the intended learning outcomes (knowledge, skills and competences). Exams are module-related and offer students continuous feedback on their progress in developing competences. There are extraordinary measures in place for students who cannot take the scheduled exams for a variety of reasons (i.g. illness). For students who have not met all the assessment criteria, there are different mechanisms in place to support them along the way. The exam results obtained by students are announced in a transparent manner by the lecturers.

In general the peers gained a positive impression about the regulated nature and the adequate documentation provided about this dimension. Special recognition is given to the various Incentives that are in place to reward student's performance such as the participation in student competitions. The examination system seems to be both diverse and adequate. Evaluations of student performance are carried out through different stages, which

contributes to high success rates. Testimonies by alumni indicate that completing the programme in a shorter period of time can be done.

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

As the university does not comment on the report the peers confirm their former assessement for <u>all programmes</u>. They find the criterion completely fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-assessment report
- Regulation of academic activities of Universitas Negeri Padang
- Staff handbook
- List of academic and non-academic achievements of lecturers
- Meeting with programme coordinators on December 8th 2021
- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:

All lecturers in each study programme have a minimum academic level of S-2 in their respective fields from various universities both at home and abroad.

MEVE has 33 lecturers by a student lecturer ratio of 1:14.4. The lecturers' qualifications details are follows: 3 professors, 11 Doctors, 19 Masters. The average teaching load of lecture is 15.5 Credits. Additional 8 staff members support the learning process.

AEVE has 30 lecturers by a student lecturer ratio of 1:17. The lecturers' qualifications details are: 2 professors, 8 doctors, 4 lecturers are currently studying S3, and 16 masters. The average teaching load of lecture is 16 Credits. A total of 2 staff members and 5 laboratory technicians assist in laboratory lab courses.

-BEVE has 34 lecturers by a student lecturer ratio of 1: 13. The lecturers' qualifications details are: 1 professor, 13 Doctors, 20 Masters The average teaching load of lecture is 15.4 Credits. Additional 10 staff members support the learning process.

IE has 29 lecturers with a student- lecturer ratio of 1:23,4. The lecturers' qualification details are: 6 Doctors, 23 Masters by academic position (1 Professor, 2 Assoc Prof., 17 Ass Prof., 4 lecturers and 5 tutors). The average teaching load of lecture is 16 Credits. There are 6 additional staff members who support the learning process.

In detail, the names and qualifications of most lecturers and staff could be observed in the evidences provided. All lecturers have the obligation to carry out research in accordance to their respective fields.

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:
- Self-assessment report
- Lecturer development plans
- Meeting with programme coordinators on December 8th 2021
- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, Universitas Negeri Padang encourages the continuing professional development of its staff. For this purpose, various opportunities are

provided. Lecturers can participate in training activities, workshops, language training, national and international conferences and research projects. New lecturers have to go through a comprehensive basic instructional skills training, where they learn practical teaching skills. External experts and visiting lecturers are regularly invited to give insights in scientific as well as educational matters.

The peers discuss with the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at the university, their opportunities to further improve 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:
- Self-assessment report
- Websites of the facilities
- Opening Meeting with Program Coordinators and Repre-sentatives of the Rector's Office on December 8th 2021
- Presentation of the Institution on December 10th 2021

Preliminary assessment and analysis of the peers:

The university and the faculty are mainly funded by the Indonesian government, through the tuition fees and through grants for research projects. The figures presented by the university show that the faculty's income is stable and the funding of the degree programmes is secured. The academic staff emphasise that from their point of view, all four undergraduate programmes under review receive sufficient funding for teaching and learning activities. The students confirm this positive impression and state their satisfaction with the available resources. In order to support learning and research, study programms offer laboratories and relevant equipment. For all equipment in the laboratories instruction manuals, maintenance control cards and safety instructions are provided. All laboratories are equipped with light fire extinguishers, hydrants and safety lines. The cost of maintenance and equipment repair is one of the important components in the allocation of funds.

During the virtual on-site visit, the university presented the laboratories in detail.

MEVE has 8 laboratories used for teaching and learning, research and student final assignments.

AEVE has 5 laboratories. In addition to laboratory facilities, theoretical classrooms are also equipped with complete facilities

BEVE has 8 laboratories and workshops which are fully equipped. All laboratories and workshops are used for teaching and learning activities, research and student final assignments.

IE has 7 laboratories which are fully equipped. The laboratories are used for learning and research activities.

In addition to the laboratories, the programmes have available lecture rooms, rooms for educational staff,

The peers are satisfied with the equipment of the labs but recommend to establish a strategy for keeping it up-to-date in the future.

The libraries of the department are equipped with the necessary subject-specific literature and via the central UNP library, students can access e-books and electronic papers through international databases. The students seem to be happy with the literature, the equipment and the opening hours.

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

As the university does not comment on the report the peers confirm their former assessement for <u>all programmes</u>. They find the criterion fulfilled but suggest to recommend to develop a strategy for keeping the equipment up-to-date and for the further training of the teaching staff.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:
- Self-assessment report
- Module descriptions for all four programmes
- Meeting with programme coordinators on December 8th

Preliminary assessment and analysis of the peers:

Each module in the study programmes contains a great deal of relevant information: Course name, code, course classification, concrete implementation (theory vs. practice),

semester, version, responsible persons, learning outcomes, course description, references, learning media, assessment, prerquisite courses, subjects, the linkage between the objectives and the assessment methods, assessment components, grading description. All study programmes have both online and offline information media, which consists of study programme websites, profiles video, brochures as well as leaflets for promotion. In addition, all study programmes also utilize social media for communication, advice, promotion and networking with students, alumi and various other parties.

After the assessment of the provided evidences, the peers conclude that the module descriptions are very detailed but in all programmes descriptions of the internships and the final thesis are missing. The peers asked for discriptions of these modules as well.

Regarding the informatics education programme the peers ask additionally for descriptions of all modules/courses which are newly implemented during the last modification of the programme.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:
- Self-assessment report
- Exemplary Diploma Supplement

Preliminary assessment and analysis of the peers:

The peers confirm that shortly after graduation, a diploma or degree certificate is issued together with a Diploma Supplement printed in English and Indonesian. They point out that the Diploma Supplement does not display the final marks in a way that individual performance of the students is transparent to third parties. Diploma supplements are not standardised regarding information content and and formats.

Additionally, the panel could not assess the information of the diplomas and of the transcripts of record, as these documents were not submitted by UPN.

The peers remark that in these documents information on the student's qualifications profile and individual performance as well as the classification of the degree programme with regard to its applicable education system has to be provided. Furthermore, in addition to the final mark, statistical data as set forth in the ECTS User's Guide has to be included to allow readers to categorise the individual result/degree.

In summary the peers find it necessary to award standardized diploma supplements which includes the named information and ask for examples of the diploma certificates and the transcript of records.

Criterion 5.3 Relevant rules

Evidence:

- Self-assessment report

- The statutes of Universitas Negeri Padang

- Students' code of ethics

- Lecturers' code of ethics

- Administration staffs' code of ethics

- Ethics for research and community services program

- Rule of campus life of Universitas Negeri Padang students download

Preliminary assessment and analysis of the peers:

Students and academic staff have rights and duties while on campus. The corresponding rules are listed in the student, lecture and administration staff's codes of ethics respectively. Among them certain values are listed which are to be displayed and enforced. The specific roles of all members of the institution are clearly stated. In fact, there are clear rules regarding the maximum study time and on how to deal with rewards and punishments. The peers conclude that the rights and duties of both the higher education institution and students are clearly defined and binding. All relevant course-related information is available in the language of the degree programme and accessible for anyone involved. As mentioned before, an area of improvement would be the simplification of the information to reduce complexity.

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

As the university does not comment on the report the peers confirm their former assessment for all programmes. They find the criterion not completely fulfilled and suggest requirements regarding the module handbooks and the diploma supplements.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-assessment report

- The statutes of Universitas Negeri Padang

- UNP Quality Manual book

- Meeting with programme coordinators on December 8th 2021

- Meeting with Teaching Staff on December 10th 2021

Preliminary assessment and analysis of the peers:

The auditors learn that there is a continuous process in order to improve the quality of the degree programmes and it is carried out through internal (IQA) and external quality assurance (EQA). IQA encompasses all activities focused on implementing measures for improving the teaching and learning quality. EQA focuses on both national and international accreditations.

The Quality Assurance Unit conducts the internal quality assurance system. This unit determines the criteria, suitable measures, and its indicator as well as the quality assurance processes for all study programmes.

Internal evaluation of the quality of the degree programmes is mainly provided through student and alumni surveys. Students give their feedback on the courses through online questionnaires at the end of each semester. Giving feedback on the classes is compulsory for the students. Additionally, students' feedback is collected by distributing a mid-semester questionnaire. The students' feedback from mid-semester questionnaires is normally addressed directly by the lecturer by discussing it with the students. This feedback gives the chance to lecturers to improve their teaching practice.

Furthermore, UNP regularly conducts an alumni study. By taking part at this survey, alumni can reflect on their educational experiences and their professional career.

The curriculum evaluations are held during the final exam week. A compilation of the students' feedback is sent to the respective lecturers. As the students point out during the discussion with the peers, there is also the possibility to give a direct and informal feedback to the teacher.

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

In general, the expert team was able to witness a complex system of quality assurance. The institution has offered evidences that objectively show a high level of achievement when it

comes to quality based on criteria established by itself. In fact, there are clear written improvement plans based on critical results obtained. The peers were able to examine these short and long-term plans.

Nevertheless, the panel points out the lack of feedback when it comes to the dissemination of results of both student satisfaction and teaching performance. Interviews with different stakeholders show that students are not informed about the overall results after they have taken part in the evaluations. From the point of view of the peers it is necessary to give students a feedback about the evaluation results.

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

As the university does not comment on the report the peers confirm their former assessement for all programmes. They find the criterion not completely fulfilled and suggest a requirement regarding regarding a feedback on the evaluation results to the students.

D Additional Documents

Before preparing their final assessment, the panel asks 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:

For the Informatics Education programme:

- Overview of the current curriculum and structure
- Module descriptions of all current modules

E Comment of the Higher Education Institution

The university does not comment on the report.

F Summary: Peer recommendations (25.02.2022)

The peers recommend the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Bachelor in Mechanical Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor in Automotive Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor in Building Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor of Education in Informatic Education	No final assessment yet	30.09.2027

Requirements

A 1. (ASIIN 1.1, 1.2) Ensure that the objectives of all programmes define specific qualification profiles of the graduates including the specific contents of the different programmes.

A 2. (ASIIN 1.1, 1.2, 1.3) Ensure that with regard to "education" the names of the degree programmes, their intended learning outcomes and their contents correspond with each other.

A 3. (ASIIN 2.3) Ensure that students get adequate practical experiences during their internships at companies and at schools as well. Especially internships at schools have to be reflected in theoretical lectures.

A 4. (ASIIN 5.1) Ensure that the module handbooks include module descriptions of the internships and final theses as well.

A 5. (ASIIN 5.2) Ensure that the Diploma Supplements are standardised and contain detailed information about the educational objectives, intended learning outcomes, the structure and the academic level of the degree programme as well as about the individual performance of the student.

A 6. (ASIIN 6) Ensure that students get a feedback on the results of those evaluations they were involved in.

Recommendations

For the Bachelor's degree programme

E 1. (ASIIN 1.1) It is recommended to review possible changes of the qualification profile with a stronger focus on "vocational education".

E 2. (ASIIN 1.3) It is recommended to offer more opportunities for students to train their communication skills.

E 3. (ASIIN 2.1) It is recommended to improve the support for student mobility.

E 4. (ASIIN 2.3) It is recommended to extend the internship in industry period to at least 6 months and to supervise students before, during and after the internship

E 5. (ASIIN 2.4) It is recommended to combine, condense and collect in one document the relevant information material handed out to the students.

E 6. (ASIIN 4.3) It is recommended to develop a strategy for keeping the equipment up-to-date and for the further training of the teaching staff.

G Comment of the Technical Committees

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

The Technical Committee discusses the procedure and followst he 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
Bachelor in Mechanical Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor in Automotive Engineering Vocational Education	With requirements for one year	30.09.2027

Technical Committee 03 – Civil Engineering, Geodesy and Architecture (07.03.2022)

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

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

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Bachelor in Building Engineering Vocational Education	With requirements for one year	30.09.2027

H Decision of the Accreditation Commission

The Accreditation Commission discusses the procedure and follows the assessment of the peers and of the Technical Committees without any changes.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation
Bachelor in Mechanical Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor in Automotive Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor in Building Engineering Vocational Education	With requirements for one year	30.09.2027
Bachelor of Education in Informatic Education	No decision taken yet	30.09.2027

Requirements

A 1. (ASIIN 1.1, 1.2) Ensure that the objectives of all programmes define specific qualification profiles of the graduates including the specific contents of the different programmes.

A 2. (ASIIN 1.1, 1.2, 1.3) Ensure that with regard to "education" the names of the degree programmes, their intended learning outcomes and their contents correspond with each other.

A 3. (ASIIN 2.3) Ensure that students get adequate practical experiences during their internships at companies and at schools as well. Especially internships at schools have to be reflected in theoretical lectures.

A 4. (ASIIN 5.1) Ensure that the module handbooks include module descriptions of the internships and final theses as well.

A 5. (ASIIN 5.2) Ensure that the Diploma Supplements are standardised and contain detailed information about the educational objectives, intended learning outcomes, the structure and the academic level of the degree programme as well as about the individual performance of the student.

A 6. (ASIIN 6) Ensure that students get a feedback on the results of those evaluations they were involved in.

Recommendations

E 1. (ASIIN 1.1) It is recommended to review possible changes of the qualification profile with a stronger focus on "vocational education".

E 2. (ASIIN 1.3) It is recommended to offer more opportunities for students to train their communication skills.

E 3. (ASIIN 2.1) It is recommended to improve the support for student mobility.

E 4. (ASIIN 2.3) It is recommended to extend the internship in industry period to at least 6 months and to supervise students before, during and after the internship

E 5. (ASIIN 2.4) It is recommended to combine, condense and collect in one document the relevant information material handed out to the students.

E 6. (ASIIN 4.3) It is recommended to develop strategies for keeping the equipment up-to-date and for the further training of the teaching staff.

Appendix: Programme Learning Outcomes and Curricula

For the bachelor's degree programme Mechanical Engineering Vocational Education the following curriculum is presented:

No.	Code	Courses	Tot	T	P	l	Group	W / P
		Semester I	**SKS**					
1	UNP1.60.1403	Citizenship Education (Citizenship)	2	2	0	0	General Subject (MKU)	W
2	UNP1.60.1404	Indonesian (Indonesian)	2	2	1	0	General Subject (MKU)	W
3	UNP1.60.1405	English (English)	2	2	0	0	General Subject (MKU)	W
4	UNP1.61.1201	Fundamentals of Education	2	1	2	0	General Subject (MKU)	W
5	UNP2.60.1402	Basic Socio-Cultural Sciences (Social and cultural science)	2	0	3	0	General Subject (MKU)	W
6	MES1.61.1101	Fabrication	3	0	3	0	Expertise Subject (MKBK)	W
7	MES1.61.1102	Mathematics (Mathematics)	2	2	0	0	Expertise Subject (MKBK)	W
8	MES1.61.1103	Physics for engineering	3	2	1	0	Expertise Subject (MKBK)	W
9	MES1.61.1104	Engineering drawing	3	1	2	0	Expertise Subject (MKBK)	W
10	MES1.61.1105	Machining technology	3	0	3	0	Expertise Subject (MKBK)	W
		Total	**24**					

No.	Code	Courses	Tot	T	P	L	Group	W / P
		Semester II	**SKS**					
1	UNP1.60.1401	Religious Education (Religion)	3	3	0	0	General Subject (MKU)	W
2	UNP1.60.1402	Pancasila Education (Pancasila)	2	2	0	0	General Subject (MKU)	W
3	UNP1.60.3101	Entrepreneurship (Entrepreneurship)	3	3	0	0	General Subject (MKU)	W
4	MES1.61.2101	Plate forming technique	3	0	3	0	Expertise Subject (MKBK)	W
5	MES1.61.2102	Engineering Mathematics (Mathematics for engineering)	2	2	0	0	Expertise Subject (MKBK)	W
6	MES1.61.2106	Machine Drawing	3	1	2	0	Expertise Subject (MKBK)	W
7	MES1.61.2201	Occupational Health and Safety	2	2	0	0	General Subject (MKU)	W

No.	Code	Courses	Tot	T	P	L	Group	W / P
8	MES1.61.3101	Chemistry for engineering	2	2	0	0	Basic Education Courses (MKDK)	W
9	MES1.61.2104	Machine tool technology	3	0	3	0	General Subject (MKU)	P
		Total	**23**					

Semester III								
No.	**Code**	**Courses**	**SKS**				**Group**	**W / P**
			Tot	**T**	**P**	**L**		
1	UNP1.61.2102	Administration and Supervision Education (Educational admin-istration *and supervision)*	2	2	0	0	Basic Education Courses (MKDK)	W
2	MES1.61.2103	Basic electrical engineering	2	2	0	0	Expertise Courses (MKBK)	W
3	MES1.61.2105	Fundamentals of Computer Programming (Computer programming)	2	1	1	0	Expertise Courses (MKBK)	W
4	MES1.61.3102	Thermodynamics (Thermodyna-mics)	2	2	0	0	Expertise Courses (MKBK)	W
5	MES1.61.3103	MFluid mechanics	2	2	0	0	Expertise Courses (MKBK)	W
6	MES1.61.3104	Teknologi Metal Welding (Metal welding technology)	3	0	3	0	Expertise Courses (MKBK)	W
7	MES1.61.3105	Ttechnology of materials	2	2	0	0	Expertise Courses (MKBK)	W
8	MES1.61.4108	CAD / CAM (CAD / CAM)	3	1	2	0	Expertise Courses (MKBK)	W
9	MES1.61.3106	EMachine elements (Machine elements)	2	2	0	0	Expertise Courses (MKBK)	W
10	MES1.61.3107	MEngineering mechanics	3	3	0	0	Expertise Courses (MKBK)	W
		Total	**23**					

Semester IV								
No.	**Code**	**Courses**	**SKS**				**Group**	**W / P**
			Tot	**T**	**P**	**L**		
1	UNP1.61.2101	Educational psychology	2	2	0	0	Basic Education Courses (MKDK)	W
2	UNP1.61.4201	Guidance and Counseling	2	2	0	0	Basic Education Courses (MKDK)	W
3	MES1.61.4102	Kinematics and Dynamics (Kinematics and dynamics)	2	2	0	0	Expertise Courses (MKBK)	W
4	MES1.61.4103	Material testing	2	0	2	0	Expertise Courses (MKBK)	W

5	MES1.61.4104	Energy conversion machines	2	2	0	0	Expertise Courses (MKBK)	W
6	MES1.61.4106	CNC Programming (CNC)	3	1	2	0	Expertise Courses (MKBK)	W
7	MES1.61.4107	Industrial metrology	3	2	1	0	Expertise Courses (MKBK)	W
8	MES1.61.4201	Media Education (Learning media)	2	2	0	0	Basic Education Courses (MKDK)	W
9	MES1.61.5102	Factory installation (Factory lay-out)	2	2	0	0	Expertise Courses (MKBK)	W
10	MES1.61.5104	Kcurriculum of Technology and Vocational Education (Technology and vocational *education curriculum)*	2	2	0	0	Expertise Courses (MKBK)	W
		Total	**22**					

Semester V								
No.	Code	Courses	SKS				Group	W / P
			Tot	T	P	L		
1	MES1.61.4101	Practicum of machine phenomenon	2	0	2	0	Expertise Subject (MKBK)	W
2	MES1.61.4105	Machine maintenance	3	2	1	0	Expertise Subject (MKBK)	W
3	MES1.61.5101	Heat transfer	2	2	0	0	Expertise Subject (MKBK)	W
4	MES1.61.5103	Applied technology machine	2				Expertise Subject (MKBK)	
5	MES1.61.5105	Vocational pedagogy (Vocational pedagogy)	2	0	2	0	Learning Process Skills Subject (MKKPP)	W
6	UNP1.60.7401	Real Work Lecture (KKN) (***Community service program)***	2	0	2	0	Learning Process Skills Subject (MKKPP)	W
7	MES ………	Elective Courses 1	3					P
8	MES ……	Elective courses 2	3					P
		Total	**19**					

Semester VI								
No.	Code	Courses	SKS				Group	W / P
			Tot	T	P	L		
1	MES1.61.6101	Hydraulic and Pneumatic (Hydraulic and pneumatic)	2	1	1	0	Educational Development Subject (MKPP)	W
2	MES1.61.6102	Industrial management	2	2	0	0	Educational Development Subject (MKPP)	W

3	MES1.61.6103	Engineering English (English for engineering)	2	2	0	0	Learning Process Skills Subject (MKKPP)	W
4	MES1.61.6104	Statistics	2	2	0	0	Learning Process Skills Subject (MKKPP)	
5	MES1.61.6105	Research methodology	2	2	0	0	Expertise Subject (MKBK)	W
6	MES1.61.6106	Special Teaching Methods	2	0	2	0	Educational Development Subject (MKPP)	W
7	MES1.61.6107	Evaluation of learning	2	1	1	0	Learning Process Skills Subject (MKKPP)	W
	MES ………	Elective Courses 1	3					P
	MES ……	Elective courses 2	3					P
		Total	20					

Semester VII								
No.	**Code**	**Courses**	**SKS**				**Group**	**W / P**
			Tot	T	P	L		
1	MES1.61.7101	Industrial Practice (Industrial internship)	3	0	3	0	Expertise Subject (MKBK)	W
2	UNP. 61.7402	School Field Program (PLP) (Educational internship)	4	0	0	4	Learning Process Skills Subject (MKKPP)	W
	Total		7					

Semester VII								
No.	**Code**	**Courses**	**SKS**				**Group**	**W / P**
			Tot	T	P	L		
1	MES1.61.7103	Final Project (TA) / Thesis (Final Project / Minithesis)	6	2	2	2	Educational Development Subject (MKPP)	W
Total			6					

For the <u>bachelor's degree programme Automotive Engineering Vocational Education</u> the following curriculum is presented:

Semester 1					

No	Code	Course	Cre-dit	T	P	F
1	OTO1.61.1101	Engineering Chemistry	2	2		
2	OTO1.61.1102	Engineering Mathematic	2	2		
4	OTO1.61.1104	Electricity and Electronics	3	2	1	
5	OTO1.61.1105	Basic Workshop Technology	3	1	2	
6	OTO1.61.1106	Fundamental of Automotive	3	2	1	
7	UNP1.60.1401	Religion Education	3	3		
8	UNP1.60.1402	Pancasila Education	2	2		
10	UNP1.60.1404	Indonesia Language	2	2		
11	UNP1.60.1405	English Language	2	2		

12	UNP1.61.1201	Basic Science Educations	2	2		

Semester 2

No	Code	Course	Credit	T	P	F
1	OTO1.61.2104	Fluid Mechanics	2	2		
2	OTO1.61.2105	Engineering Economics	2	2		
3	OTO1.61.2106	Thermodinamics	2	2		
4	OTO1.61.2107	Sensor and tranducer	3	2	1	
5	OTO1.61.2108	Vehicle Body Technology	3	1	2	

6	OTO1.61.2109	Engineering English	2	1	1	
7	OTO1.61.2110	Engineering Physics	3	2	1	
8	OTO2.61.2102	Carrer Guidance	2	2		
9	UNP1.61.2101	Education Physicology	2	2		

Semester 3						
No	Code	Course	Cre-dit	T	P	F
1	OTO1.61.3109	Engineering Element	2	2		
2	OTO1.61.3110	Engineering Material	2	2		

No	Code	Course	Credit	T	P	F
3	OTO1.61.3111	Heat transfer	2	2		
4	OTO1.61.3112	Vehicle Mechanics	2	2		
5	OTO1.61.3113	Steering, Brake, and suspension	3	1	2	
6	OTO1.61.3114	Hydraulic and Pneumatics	2	1	1	
7	OTO1.61.3115	Gasoline Engine	4	2	2	
8	UNP1.60.3101	Entrepreneurship	3	3		
9	UNP2.60.3402	Communication and Information Technology	2		2	
Semester 4						
No	**Code**	**Course**	**Credit**	**T**	**P**	**F**

1	OTO1.61.4104	Industrial Management	2	2	
2	OTO1.61.4105	Diesel Engine	4	2	2
3	OTO1.61.4106	Heavy Equipment Technology	3	2	1
4	OTO1.61.4107	Automotive Electrics and Electronics	4	2	2
5	OTO1.61.4108	Power Transfer system	3	1	2
6	OTO1.61.4205	Learning Evaluation	2	2	
7	OTO1.61.4206	Educational media	2	1	1
8	UNP1.61.4201	Guidance and Counceling	2	2	

	Semester 5					
No	**Code**	**Course**	**Cre-dit**	**T**	**P**	**F**
1	OTO1.61.5103	Motor Vehicle Technology	3	1	2	
2	OTO1.61.5104	Autotronic technology	4	2	2	
3	OTO1.61.5105	Vehicle Testing	3	1	2	
4	OTO1.61.5106	Air Conditioner Technology	3	1	2	
5	OTO1.61.5107	Vehincle Painting Technology	3	1	2	
6	UNP1.61.2102	Administration and Supervision Education	2	2		
7	OTO1.61.5302	Vocational Pedagogy	3	1	2	
8	UNP1.60.1403	Citizenship education	2	2		

Semester 6						
No	**Code**	**Course**	**Cre-dit**	**T**	**P**	**F**
1	**OTO1.61.6101**	**Statistics**	**2**	**2**		
2	**OTO1.61.6102**	**Pollution and the Envirmental**	**2**	**2**		
3	**OTO1.61.6103**	**Vehicle Maintenance**	**3**	**1**	**2**	
4	**OTO1.61.6104**	**Simulation and computing**	**2**	**1**	**1**	
5	**OTO1.61.6205**	**Reseach methodology**	**2**	**2**		
6	**OTO1.61.6206**	**Teching method**	**3**	**1**	**2**	

7	OTO1.61.6304	Technology and Vocational Education Curriculum	2	2		
8	OTO2.61.6102	Human Resources Management	2	2		
9	OTO2.61.6103	Transportation technology	2	2		
10	OTO1.61.1103	Mechanical Drawing	3	1	2	

Semester 7

No	Code	Course	Cre-dit	T	P	F
1	OTO1.61.7101	Industrial Internship	3			3
2	UNP1.60.7401	Community service program	2			2

3	UNP1.61.7101	Educational Internship	5			5

Semester 8

No	Code	Course	Cre-dit	T	P	F
1	OTO1.61.8201	Final Project	6			6

For the <u>bachelor's degree programme Building Engineering Vocational Education</u> the following curriculum is presented:

No	Code	Mata Kuliah	SKS	T	P	F	Mo-dule	Hand-book
			Semester 1					
1	SIP1.61.1104	Teknologi Bahan	4	4	0	0	IND	ENG
2	SIP1.61.1102	Statika	3	3	0	0	IND	ENG
3	SIP1.61.1103	Analisis Matematika	2	2	0	0	IND	ENG

No	Code	Mata Kuliah	SKS	T	P	F	Module	Handbook
4	SIP1.61.1105	Gambar Teknik	3	1	2	0	IND	ENG
5	SIP1.61.4101	Fisika Teknik	3	2	1	0	IND	ENG
6	UNP1.60.1404	Bahasa Indonesia	2	2	0	0	IND	ENG
7	UNP1.60.1405	Bahasa Inggris	2	2	0	0	IND	ENG
8	UNP1.61.1201	Dasar-dasar Ilmu Pendidikan	2	2	0	0	IND	ENG
Sum			**21**					

Semester 2								
1	SIP1.61.3201	Kesehatan dan Keselamatan Kerja	2	2	0	0	IND	ENG
2	SIP1.61.2102	Kalkulus	2	2	0	0	IND	ENG
3	SIP1.61.2301	Pratek Plumbing dan Sanitasi	4	0	4	0	IND	ENG
4	SIP1.61.2302	Konstruksi dan Gambar Bangunan	3	1	2	0	IND	ENG
5	SIP1.61.2303	Dasar-Dasar Survey dan Pemetaan	3	1	2	0	IND	ENG
6	SIP1.61.2304	Mekanika Teknik	3	3	0	0	IND	ENG
7	UNP1.60.1401	Pendidikan Agama	3	3	0	0	IND	ENG
8	UNP1.61.2102	Administrasi Dan Supervisi Pendidikan	2	2	0	0	IND	ENG
Sum			**22**					

No	Code	Mata Kuliah	SKS	T	P	F	Module	Handbook
		Semester 3						
1	SIP1.61.3101	Statistika	2	2	0	0	IND	ENG
2	SIP1.61.3102	Media Pembelajaran	2	2	0	0	IND	ENG
3	SIP1.61.3301	Pratek Kerja Kayu	4	0	4	0	IND	ENG
4	SIP1.61.3302	Gambar Bestek Bangunan	3	1	2	0	IND	ENG
5	SIP1.61.3303	Survey dan Pemetaan Topografi	3	1	2	0	IND	ENG
6	SIP1.61.3304	Struktur Baja	3	3	0	0	IND	ENG
7	SIP1.61.3305	Struktur Beton	3	3	0	0	IND	ENG
8	UNP1.60.1403	Pendidikan Kewarganegaraan	2	2	0	0	IND	ENG
Sum			**22**					
		Semester 4						
1	SIP1.61.1101	Pratek Batu dan Beton	4	0	4	0	IND	ENG
2	SIP1.61.4102	Kurikulum Pendidikan Teknologi dan Kejuruan	3	3	0	0	IND	ENG
3	SIP1.61.4201	Analisis Statistik	2	2	0	0	IND	ENG
4	SIP1.61.4301	Konstruksi Perkerasan Jalan Raya	3	2	1	0	IND	ENG
5	SIP1.61.4302	Mekanika Tanah dan Teknik Pondasi	3	2	1	0	IND	ENG

No	Code	Mata Kuliah	SKS	T	P	F	Module	Hand-book
6	SIP1.61.4303	Gambar Perencanaan	3	1	2	0	IND	ENG
7	SIP1.61.4304	Struktur Kayu	2	2	0	0	IND	ENG
8	UNP1.60.1402	Pendidikan Pancasila	2	2	0	0	IND	ENG
9	UNP1.61.2101	Psikologi Pendidikan	2	2	0	0	IND	ENG
Sum			**24**					

	Semester 5							
1	SIP1.61.5101	Metode Penelitian	3	3	0	0	IND	ENG
2	SIP1.61.5102	Pedagogi Kejuruan	3	3	0	0	IND	ENG
3	SIP1.61.5301	Alat Berat dan Pemindahan Tanah Mekanis	2	2	0	0	IND	ENG
4	SIP1.61.5302	Analisis Struktur	3	1	2	0	IND	ENG
5	SIP2.61.5101	Hukum Ketenagakerjaan	2	2	0	0	IND	ENG
6	SIP2.61.5301	Utilitas Bangunan	2	2	0	0	IND	ENG
7	UNP1.60.3102	Kewirausahaan	3	3	0	0	IND	ENG
8	UNP1.61.4201	Bimbingan Dan Konseling	2	2	0	0	IND	ENG
9	SIP1.61.2101	Hidrolika	2	2	0	0	IND	ENG
Sum			**22**					

	Semester 6							

No	Code	Mata Kuliah	SKS	T	P	F	Module	Handbook
1	SIP1.61.6101	Penelitian Terapan	2	2	0	0	IND	ENG
2	SIP1.61.6201	Metode Mengajar Khusus	3	2	1	0	IND	ENG
3	SIP1.61.6202	Tata Tulis Karya Ilmiah dan Seminar	2	1	1	0	IND	ENG
4	SIP1.61.6301	Irigasi dan Drainase	2	2	0	0	IND	ENG
5	SIP1.61.6302	Kuantiti Surveying dan Manajemen Proyek	4	2	2	0	IND	ENG
6	SIP2.61.6301	Rekayasa Lingkungan *	2	2	0	0	IND	ENG
7	SIP2.61.6302	Perumahan dan Tata Kota *	2	2	0	0	IND	ENG
8	UNP1.60.7401	Kuliah Kerja Nyata (KKN)	2	2	0	0	IND	ENG
9	UNP2.60.2402	Manajemen Bencana *	2	2	0	0	IND	ENG
10	UNP2.60.3402	Teknologi Informasi dan Komunikasi *	2	0	2	0	IND	ENG
Sum			**23**					
		Semester 7						
1	UNP1.61.7401	Program Pengalaman Lapangan	5	0	0	5	IND	ENG
Sum			**5**					
		Semester 8						
1	FTE012	Praktek Industri	3	0	0	3	IND	ENG

No	Code	Mata Kuliah	SKS	T	P	F	Mo-dule	Hand-book
2	SIP1.61.8301	Skripsi	6	0	6	0	IND	ENG
Sum			**9**					
		TOTAL SKS	**144**					

For the <u>bachelor's degree programme Informatics Education</u> there is no current curriculum presented: