ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes
Geodesy and Geomatics Engineering
Geological Engineering
Urban and Regional Planning

Provided by
Institute of Technology Bandung

Version: 29.03.2019

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]
	Ba Geodesy and Gematics Engineering	ASIIN Label	--	TC 03
	Ba Geological Engineering	ASIIN Label	--	TC 11
	Ba Urban and Regional Planning	ASIIN Label	--	TC 03, 11
Date of the contract: 2017-10-16 **Submission of the final version of the self-assessment report:** 2018-08-03 **Date of the onsite visit:** 8.-10. October 2018 **at:** Bandung				
Peer panel: Prof. Dr. Rafig Azzam, Technical Universty of Aachen; Prof. Dr. Detlev Doherr, University of Applied Sciences Offenburg; Dipl.-Ing. Torsten Hentschel, Independent Survey Engineer Prof. Dr. Wolfgang Huep, University of Applied Sciences Stuttgart; Faqih Rohmatulloh (Student), Gadjah Mada University; Prof. Dr. Martin Rumberg, Technical University of Kaiserslautern				

[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 - Physical Technologies, Materials and Processes; TC 06 - Industrial Engineering; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Nutritional Sciences and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics.

Representative of the ASIIN headquarter: Dr. Michael Meyer	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria, as of 10.12.2015 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy, Architecture as of 28.09.2012 and of Technical Committee 11 – Geosciences as of 23.09.2011.	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Geological Engineering	B.Sc.	Geotechnics & Groundwater; Energy & Mineral Exploration; Applied Geology		Full tine	--	8 Semester	144 CU = 200 ECTS	Annually (July)
Geodesy and Geomatcs Engineering	B.Sc.			Full tine	--	8 Semester	144 CU = 200 ECTS	Annually (July)
Urban and regional Planning	B.Sc.			Full tine	--	8 Semester	144 CU = 200 ECTS	Annually (July)

For the Bachelor's degree programme Geological Engineering the institution has presented the following profile after the onside visit, which is modified comparing to the objectives of the original self-assessment report.

The objectives and learning outcomes of Undergraduate Program in Geological Engineering is based on:
- ITB and FITB Vision and Mission
- National needs
- International and National standard in geosciences education,
- Input from stakeholders

The revised Program Educational Objectives (PEO) of Undergraduate Program in Geological Engineering are:

1. To produce graduates who have strong fundamental knowledge in engineering and science so that they are flexible to adapt to the rapid development of science and technology, and success in their profession and further education.
2. To produce graduates who are able to apply engineering fundamentals to solve various geological-related problems.

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

3. To produce graduates who have the attitude and behavior that have positive impact in community (hard and soft skills) as well as showing leadership in their environment.

Undergraduate Program in Geological Engineering has set the (revised) Program Learning Outcomes for the graduates as follows:

1. Students will be able to comprehend fundamentals of mathematics, engineering and geological sciences.
2. Students will be able to define geological and engineering problems and design appropriate approach and methods that can be utilized using both computer- and non-computer-based techniques.
3. Students will be able to carry out different methods, techniques and skills in the field and laboratory to gather geological data and conduct experiments following HSE regulations.
4. Students will be able to analyze geological data in situations in which they are appropriate via both paper- and computer-based techniques.
5. Students will be able to generate geological interpretation and design engineering solution based on available data.
6. Students will be able to perform time management, able to work individually and within groups during task completion and communicate effectively in oral and written forms.
7. Students will be able to implement various geological concepts and engineering for scientific research, exploration, geotechnics, ground-water, and environmental purposes as a basis for their continuous learning and in accordance to common norm values (ethic) and legal practice.
8. Students will have appreciation of both nationalism and global awareness relevant to their subject of studies.
9. Students will have an appreciation of entrepreneurship.

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

The Undergraduate Programme in Geodesy and Geomatics Engineering at the Faculty of Earth Sciences and Technology, ITB, focuses its objectives to produce graduates that are capable to become professionals, which are working in geospatial industry, government or as entrepreneurs. The objectives of the GGE are to produce graduates that:

- acquire integrated knowledge in the field of geodesy and geomatics engineering as it is demanded by industry, the professions, and the public services
- possess skills in utilizing the knowledge in solving relevant problems in industry, the professions, and the public services

- are able to handle open and complex problems, especially by considering engineering solutions, comprising of technical, design, socio-economics, cultural, environmental, and business aspects
- indicate abilities to adapt, to adjust, and to grow independently as well as to compete globally
- demonstrate compliance to ethical and professional standards

the graduates are expected to:

- have and be able to apply mathematics and basic sciences in the field of geodesy and geomatics engineering
- have appropriate knowledge and skills in the subject specific of geodesy and geomatics engineering
- have applied knowledge and skills in the subject specific of geodesy and geomatics engineering
- be able to identify, formulate and solve geodesy and geomatics engineering task and problems
- be able to utilize and practice modern and recent technology, methods and tools in geodesy and geomatics
- have appropriate knowledge in professional practice such as laws, management, entrepreneurship, report writing, communication, presentation and environmental awareness
- be able to find appropriate literatures and data sources
- understand customer as well as interdisciplinary requirements, orientation and behaviour
- profound professional openness and creativity
- have a leadership and to able to work in a team
- understand professional ethics and social responsibility
- be prepared for socialization and working in both engineering or scientific environments
- have awareness of the importance of life-long learning
- understand national characteristics and problems

For the Bachelor's degree programme Urban and Regional Planning the institution has presented the following profile in the self-assessment report:

Based on the input for the curriculum, the UPURP has the following Program Learning Outcomes (PLO) for its graduates set:

1. Understands basic knowledge of natural science and technology to acquire scientific thought towards planning and design
2. Understands basic spatial elements and principles of urban and regional planning, including land use and location structure, environment and natural resources, and infrastructure systems
3. Understands basic non-spatial elements and principles of urban and regional planning, including urban and regional economics, housing systems, social aspects and demographics, and development financing and management
4. Applies the prevailing procedures, regulations, and instruments for implementation of spatial concepts in urban planning and design, regional and rural planning, and infrastructure planning
5. Explains the professional ethics and the encompassing responsibilities of the profession
6. Applies analytical planning methods
7. Communicates and articulates effectively via visual, oral and written means to a diverse range of stakeholders across the realms of society and politics
8. Collaborates in a multidisciplinary team that recognizes interdisciplinary correlations and one's own professional competence
9. Conducts scientifically reliable research in the field of urban and regional planning
10. Integrates the process of urban and regional planning and design based on real-life conditions according to the needs and constraints, using rational, participatory, comprehensive, innovative and creative approaches
11. Integrates coded planning practice in making sound judgment and good sense with colleagues and other stakeholders in the professional work environment

C Peer Report for the ASIIN Seal[4]

1. The Degree Programme: Concept, content & implementation

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

Evidence:

- Self-assessment report
- Additional description of the learning outcomes for Geological Engineering (submitted after the onside visit)
- Study guides
- Discussions with representatives of the university

Preliminary assessment and analysis of the peers:
The study aims and intended learning outcomes of the all programmes defined by the university correspond to learning outcomes relevant to level 6 of the European Qualifications Framework. Learning outcomes are accessible to students, staff members, and all the other stakeholders on the faculty web site. These objectives were discussed in staff meetings with the faculty team. The department consults private companies and governmental institutions in the further development of the programmes by individual contacts. Additionally, alumni and individual professionals are involved in the further development of the programmes as well as the geographic association of Indonesia.

The peers examined the objectives and the learning outcomes of all programmes in the light of the Subject-Specific Criteria (SSC) of the Technical Committee for Geosciences and for Geodesy of ASIIN. They assessed if the objectives reflect the level of academic qualification aimed at and are equivalent to the learning outcome examples described in the respective ASIIN Subject-Specific Criteria as far as it is reasonable for the specified programmes. The peers came to the following assessment:

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

For the Bachelor's degree programme Geological Engineering the university submitted modified learning objectives after the onside visit in order to underline the engineering competences of the graduates. While the former aims of the programmes seemed to intend applied Geology aspects the peers understood out of the new objectives that graduates should be able to find engineering solutions for geological issues. To get these competences students should get knowledge of the basics in natural science and mathematics. To understand and to identify geological issues students should have additionally basic knowledge and understanding of the essential features, processes, materials, history and the development of the Earth and of the of the key aspects and concepts of geology. Differing to their assessment during the onside visit the peers found adequate intended learning outcomes regarding engineering abilities in analysis, design and implementation, technological and methodological skills and additional professional competences within the new learning objectives to confirm the engineering aspect in the title of the programme.

For the Bachelor's degree programme Geodesy and Geomatics Engineering the peers agreed with the programme coordinators that "Geodesy" is dealing with the shape of the earth while surveying handles aspects belonging more to the field of cadastre. The peers asserted that students shall have knowledge and understanding in the fields of mathematics and physics and thorough knowledge of subject-specific fundamentals of surveying and geoinformatics like photogrammetry and remote sensing, adjustment, cartography, computer science, geographic information systems (GIS) and spatial data infrastructure. Students should have applied their skills in the fields of land surveying, information systems for geodata or by updating topographic maps. Students should also know technical handbooks, periodicals and information systems for purposes of availability and verification of current measurement and evaluation procedures. One of the focuses of the programme lies on mapping for the mining industry.

For the Bachelor's degree programme Urban and Regional Planning the peers assessed that the specific areas of competences as set forth by the Subject-Specific Criteria of the Technical Committees Geosciences and Architecture (Urban Planning) are met as far as they are meaningful for a programme.

Regarding analysis, design and implementation the peers saw in all programmes that the students should get an understanding of the complexity of field specific problems. They should get basic ability in the formalisation and specification of problems and the description of solutions. The students should be able to integrate field and laboratory evidence and to appreciate. They should get adequate technological, methodological and transferable skills and additional professional skills to be aware of economic, ecologic, social and legal aspects expected in professional practice.

In summary, the auditors came to the conclusion that the objectives and intended learning outcomes of all three Bachelor degree programmes under review are reasonable and well founded. Based on the Self-Assessment Report, the discussions during the on-site-visit and the new aims for Geological Engineering, the peers observe that the graduates of all three Bachelor degree programmes acquire the necessary subject-related competences. They are convinced that the intended qualification profiles of all three Bachelor degree programmes allow the students to take up an occupation, which corresponds to their qualification. Statistical data about the employment of the graduates confirm this conclusion. Nearly all graduates found jobs immediately after finishing their studies.

Criterion 1.2 Name of the degree programme

Evidence:

- Websites of the degree programmes
- Self-Assessment Report

Preliminary assessment and analysis of the peers:
The titles of all programmes are published on the subject specific webpages. The information about the programmes are published in Indonesian and English language. The panel confirmed that the names of all programmes reflect the intended aims and learning outcomes. The peers confirmed this assessment also for the Bachelor's degree programme Geological Engineering. Their doubts during the onside visit about an engineering orientation of the programme were abrogated by the new description of the objectives and the new curriculum (see chapter 1.3, below).

Criterion 1.3 Curriculum

Evidence:

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

Preliminary assessment and analysis of the peers:

The peers based their assessment as to whether the curricula of the programmes are designed in a way to achieve the intended learning outcomes according to the module descriptions and the Objectives-Module-Matrix. All three Bachelor degree programmes under

review are designed for eight semesters; each semester consists of fourteen weeks of lectures and two weeks of exams.

ITB has designed a common first study year for all bachelor programmes offered by the university. During the first year the fundamentals in mathematics and natural sciences are treated as well as fundamentals of engineering and design. Additional students get knowledge about information technology and were introduced how to write scientific papers. The different faculties have a certain influence on the content of the common modules, e.g. to implement field specific modules in this first year.

Students are enrolled in the specific study programmes after the first year based on their GPA of the first year. In case student do not get the GPA required by the aspired programme they have to change either the study programme or the university.

The peers understood the first year as year of adaption of knowledge to harmonise the study abilities of the students. They wondered that computer programming is not implemented in the common year as programming abilities are needed in almost all modern study programmes. Nevertheless, they accepted the didactical concept of the university to teach programming with regard to the specific applications in the different programmes.

The curriculum of the Bachelor's degree programme Geological Engineering was modified by the university after the onside visit. It starts now in the second level year with geological basics in geological core disciplines like Geophysic, Crystallography, Mineralogy, Palaeontology, Geochemistry, Structural Geology, Petrology and Tectonophysics. Additionally there are geo-specific mathematical and statistical basics implemented besides engineering fundamentals in general mechanics and fluid mechanics. Finally in the second year students get knowledge of juristic regulations in earth management. In the third year there are some additional geological core disciplines implemented like Sedimentology, Stratigraphy, Geomorphology, Marine Geology and Volcanology as well as history of geology. Engineering fundamentals are complemented by rock and soil mechanics. The theoretical knowledge is applied in Modules about optical Mineralogy, Geology of Indonesia, GIS, Reference Studies and field work. In the fourth year applied geology aspects become more specific regarding to Hydrology and are add by engineering applications in Engineering Geology, Rock and Soil Engineering and two Design Projects. Additionally the students choose one the of the study paths Geotechnics & Groundwater, Energy & Mineral Exploration or Applied Geology. In each paths students select three modules out of a catalogue of six modules. The final project has an extent of 8 Credit Units, which correspond to 480 hours workload or 16 ECTS points.

As mentioned before the panel had some doubts about the engineering aspects in the. From the point of view of the peers the original curriculum was excellent to educate students in Applied Geology but did not content major engineering aspects additional to the "Engineering and Design" modules of the common year. After the modification of the curriculum modules about engineering fundamentals like (general) engineering mechanics as well as fluid and soil mechanics are added to the curriculum. Further on, the faculty add aspects of Engineering Geology in order to apply the theoretical knowledge and to handle specific methods of geological engineering. So, from the point of view of the peers the new curriculum in aligned with the modified more engineering oriented objectives of the programme.

The curriculum of the Bachelor's degree programme Geodesy and Geomatics content in the second year basics in Positioning, Geometric Geodesy, Statistics, Geodetic Computing, Introduction to Spatial Systems, Geometric Reference Systems and Satellite Geodesy added by juristic regulations. The third year content Terrestrial Mapping, Hydrography, Photogrammetry, Spatial Database, GNSS Surveying, Cartography, Remote Sensing and a practical field camp. In the fourth year the department offers modules about GIS, Cadastre Systems, Environmental Geography and Geospatial Information Industry. Additionally the programme content an internship of minimum one month. The final thesis has an extent of six credit units, which correspond to 360 hours workload or 12 ECTS points.

The peers could follow the argumentation of the department that the internship is placed in the seventh semester, as students do not have sufficient knowledge in earlier semester to work in companies or governmental institutions.

The curriculum of the Bachelor's degree programme Urban and Regional Planning content in the second year modules about Environmental Geology for Planning, Environment and Natural Resources, Location Pattern, Spatial Data, Economics, Population Analysis, Planning Methods, Urban and Regional Economics, Land use, Urban and Regional Infrastructure and Housing Systems. In the third year there are specific planning aspects implemented like Urban, Regional and Rural planning, Community Development, Social Systems and Infrastructure Planning, combined with financial and administrative aspects. The fourth year content Planning Evaluation techniques, research Methods, Planning Theory and Planning Information Systems. Additionally, the programme content several studio called projects about Planning Processes, Urban Planning, Infrastructure Planning, Site Planning and Regional Planning. In the seventh semester an external internship is implemented in the programme. The final thesis has an extent of six credit units, which correspond to 360 hours workload or 12 ECTS points.

The peers discussed the bride orientation of the programme. They agreed with the programme coordinators and with the representatives of the industry that graduates will work either as urban or regional planners but will not be active in both fields. Therefore, they wondered why both fields added by rural planning are offered for all students without any defined specialisation. They understood that this is the result of discussions in former times between industry and university. Frome their talks to the representatives of the labour market the peers got the impression that the labour market would ask more intensively for specialists than for generalists. On the other side, the graduates of the programme all find jobs immediately after finishing their studies. Therefore the peers accept the structure of the programme but recommend to make it more transparent to the students how to specialize either in urban, rural or in regional planning within the four elective courses and the bachelor thesis.

The peers welcomed the intention of the programme coordinators to intense aspects of data mining in the curriculum. Up to now, databases are only implemented in some projects. Students remarked to the peers that they would like to have more detailed introductions in the software used in the projects.

In all programmes additionally modules about religion, ethics and Pancasila – the national Indonesian ideology – are implemented in the curricula. The peers welcomed that there are religious modules not only for the Islam religion but for all Indonesian religions as well and that students are free to choose one of those modules even if they have not this religion by themselves. The committee gained the impression that the modules do not contradict the basic principles of scientific research.

The peers also welcomed the interdisciplinary exchange between the programmes in workshops for the complete Faculty.

The peers confirmed that the overall objectives and intended learning outcomes for the degree programmes are systematically substantiated in the modules and that the curricula enable students to achieve the intended learning outcomes in order to obtain the degree.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Regulation of Ministry of Education (of Indonesia) No. 034/2010
- Student Admission: Rector Decree No. 169/SK/I1.A/PP/2012 on Academic and Student Regulations Institut Teknologi Bandung

Preliminary assessment and analysis of the peers:
The peers were explained that the ITB and the national committee on student selection for university studies conducted centrally admission to the undergraduate programmes of ITB. The management of student admission is centrally-organized at the Directorate of Education of ITB for all faculties and schools within ITB. Since 2011, ITB had been using the national-level student admission system. The national admission committee is composed from all state university delegates.

60% of the students got their admission regarding to their school grades the other 40% by later additional examinations. In case of more applications than available study places there is a ranking of the grades. The students apply for faculty not for single programmes and take their choice after the first common year. At the end of this first year, each student proposes three choices of study programmes they want to enter. Based on the performance of the students in the first year, the best students are admitted to the first choice. If all places in a degree programme are occupied, students are distributed into the programmes of the second choice and so on.

In addition, through the Law of the Republic of Indonesia the government mandates all state universities to recruit students who have a high academic-performance but not the financial resources to pay the tuition fees. At least 20% of the new students admitted to the university have a background that does not allow them to pay the tuition fees. The government covers the financial expenses and provides incentives to the university to implement this policy.

The auditors confirmed that the requirements and procedures for admission are transparent and clear. All applicants are treated according to the same standards and regulations. According to the peers, especially the faculty-specific test supported the students in achieving the learning outcomes. Furthermore, the auditors appreciated the “First Common Year Programme” as it ascertains that all students meet adequate standards when entering the degree programme.

The peers wondered that the recognition of achievements and competences acquired by students at other universities is strictly limited to those universities cooperating with ITB. They recommended to implement more liberal regulations.

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

In general, the peers assessed the criterion as fulfilled. Nevertheless, they suggested a recommendation regarding the regulations for the recognition of achievements acquired by students at other universities. For the bachelor’s degree programme Urban and Regional

Planning they suggested an additional recommendation to make it more transparent to students how to specialize either in urban, rural or in regional planning.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Rector Decree on Academic and Student Regulations Institut Teknologi Bandung
- Guidelines for Credit Earning and Credit Transfer at Institut Teknologi Bandung
- Module handbook

Preliminary assessment and analysis of the peers:
The programme structure of Undergraduate Programmes at Institut Teknologi Bandung (ITB) is described in the "Regulation of Academic and Student Affairs". All degree programmes are divided into modules which are accredited with credit points and comprise a sum of teaching and learning.

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

The auditors understood that the "Common First Year Programme" intended to strengthen the comprehension of basic sciences and enhancing required learning aptitudes. The Bachelor stage managed by the programmes within each faculty or school intended to develop the knowledge and skill of the chosen discipline.

When looking at international exchange programmes ITB explained that the university maintains a number of exchange programmes with foreign universities; ITB also runs a number of dual degree programmes.

However, hardly any undergraduate students could participate in any of these programmes due to the fact that there is hardly any scholarship support for covering living expenses. Even though there is a large interest among undergraduate students there are only very scarce opportunities. The peers understood that ITB was highly dependent on governmental funding because ITB is a state university; that is why ITB should also look for alternative funding sources (e.g. from alumni and industries) to send their students abroad. Hence, the peers recommended improving the (financial) opportunities for students (including alternative funding sources) to complete a period of vocational practice or a stay at a different higher education institution abroad.

Regarding the recognition of credit points, ITB explained that there exist a number of agreements with specific universities and students could arrange learning agreements with the supervisor to make sure credit points are easily recognized. But even if learning agreements have not been drafted beforehand, students can get credit points accredited if the modules were also part of the curriculum of ITB. This needs to be approved by the supervisor. The peers understood that student mobility was practically taking place and the "Guidelines for Credit Earning and Credit Transfer at Institut Teknologi Bandung" provided a clear regulation of recognition of credit points.

In order to make the programmes more attractive to international students and to intensify the exchange programmes the peers recommended to increase the number of modules in English languages

In general, the undergraduate programmes at ITB were designed to be completed within four academic years. The maximum length of study is limited to six years. The peers were explained that the majority of students completed their degree in the given 4 year's time frame and only a minority needed to extend the studies to 6 years. According to ITB this applied to all study programmes. The figures provided in the Self-Assessment Report also proved that only a very small number of students resigned or dropped out without a grade. The peers could comprehend that the curriculum was structured in a way to allow students to complete the degree in the regular timeframe.

Criterion 2.2 Work load and credits

Evidence:

- Self Assessment Report
- Module descriptions:
- Study Load per Semester: Rector Decree No. 169/SK/I1.A/PP/2012 on Academic and Student Regulations Institut Teknologi Bandung

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

Preliminary assessment and analysis of the peers:
The programme coordinators explained that ITB uses credit units instead of credit points and 1 credit unit (SKS) is equivalent to 60 hours of workload. Students have to earn 144 credit units in order to earn their bachelor's degree. The normal length of study to achieve the bachelor's degree is 4 years, or 8 semesters. On average, each student takes 20 credit units per semester. In the "Academic and Student Regulations" it is defined that 1 credit unit for the undergraduate programme is equivalent to 3 hours a week: 1 hour of contact time with teaching staff, 1 hour of structured activities related to lectures, and 1 hour of independent study but this ratio can change according to the activities in a module. For example, for laboratory activities, final projects, and internships, 1 credit unit is equivalent to 3-5 hours a week of independent student study. This is also properly reflected in the module descriptions. The peers understood that the workload comprises both attendance-based learning and self-study which includes all compulsory elements of the degree. The modules descriptions are published on the website and can be accessed by interested stakeholders. The peers positively noted that the module handbook describes consistently in all modules the credit points and the workload distinguishing between contact time and time of self-study

Comparing to the objectives and the content the workload defined for the single modules seems to be realistic for the peers and they saw that structure-related peaks in the work load have been avoided. The students confirmed this impression.

Criterion 2.3 Teaching methodology

Evidence:

- Self Assessment Report
- Module descriptions:
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The Undergraduate Programmes at ITB are full-time programmes with classroom, structured, and self-study activities. The staff members of ITB apply various teaching and learning methods (such as lectures, computer training and classroom and lab exercises, individual and group assignments, seminars and projects). Structured activities include tutorial, homework, assignment (reading or problem exercises), and practical activities. Group project assignments are also given in some courses to develop students' skill in teamwork,

discussion, and coordination. The peers concluded also with reference to the remarks of the students that the teaching methods and instruments used supported the students in achieving the learning outcomes.

In all programmes excursions and field work activities are implemented in order to offer practical experiences to the students. With practical field experiences students are really satisfied while they wished more opportunities for internships in companies.

The peers recognised that students learn independent academic research and writing during the "Common First Year" where are several compulsory modules for all students like "Scientific Writing in Indonesian" and "Introduction to Information Technology. Furthermore, in the 8th semester, the curriculum includes a final project, which is a written report related to a topic in the student's major studies. The project is conducted independently under guidance of a supervisor and consists of literature study, empirical research (including experimentation/observation), or simulation. This Final Project report is defended orally in front of examiners. The peers confirmed that independent academic research and writing are properly implemented in the curriculum.

E-learning or blended learning methods are used by several professors and the university got first experiences with complete online programmes.

Criterion 2.4 Support and assistance

Evidence:

- Self Assessment Report
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:

The peers welcomed the concept of an academic advisor. The programme coordinators explain that as students commence their studies in the First Year programme, an academic advisor is appointed for each of them. One academic advisor is responsible for supervising about 20 students. Usually, the academic advisor is available for any consultation a student may need, even for problems beyond academic matters. Academic data of the students are monitored and recorded at the university level through the academic information system. At the beginning of each semester, based on the student's prior performance, the academic advisor gives considerations concerning the courses a student should take. The students confirm that the academic advisors normally try to be very supportive to students and if a student's performance is becoming worse or the work ethics of a student is not as it should be, the academic advisors contact the parents or friends to take influence in the respective student.

The peers noticed that an “Undergraduate Handbook” published on the website, which contained a lot of information on additional support services like the “Counselling Center” where students can get consultation about academic or non-academic problems. Depending on the kind of problem, also psychological services were offered. If students felt under severe pressure they could also turn to the Dean. The Agency for Students managed all types of scholarships and provided respective support for students who were eligible. ITB’s health centre offered health services for students and faculty members. The ITB Career Development Centre (ITB CDC) maintained an on-line job application and career opportunity information system for all ITB students. ITB also maintained a Language Centre which offers courses for ITB students and staff particularly pre-departure courses like “TOEFL Preparation Courses” and “Courses in English for Specific Purposes” especially in science and technology. The auditors concluded that there were adequate resources available to provide individual assistance, advice and support for all students. The peers underlined that the allocated advice and guidance, namely the academic advisor assisted the students in achieving the learning outcomes and in completing the course within the scheduled time.

Besides this very comprehensive advisory system the peers noticed some difficulties regarding the mobility of students. In case students want to go abroad they reported about financial problems to realise a study abroad. The normal tuition fee for ITB students, which enrolled in the academic year of 2014/2015, is IDR 10,000,000 or equal to US$ 760 for one semester. This fee can be lowered to up to 25% (IDR 2,500,000). This reduction is based upon student's parents earnings (US$ 1 =IDR 13,000). Grants for the normal fees are available for 20% of the students. But there seems to be no grants or other financial supports for a study abroad.

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

In general, the peers assessed the criterion as fulfilled. Nevertheless, they suggested a recommendation to recognize achievements of students not only from cooperating universities but to define a more open regulation

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- Self Assessment Report

- Module descriptions:
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
Within the examination regulations, rules have been defined for resits, disability compensation measures, illness and other mitigating circumstances. Failed exams can be repeated in the next year thereby students get the opportunity to repeat the lecture as well. Failed exams can be repeated as often as students like to do but the complete study time is limited to six years.

The peers were explained that ITB adopted the concept of multi-component assessments to measure the achievement of course outcomes and thus the programme's learning outcomes. The types of examinations used in each course were determined in the syllabus and the module descriptions. In the module descriptions it was specified that in most modules the overall final grade was composed of the mid-term test, the final examination, quizzes and home work. The students confirmed that in many modules they have to held presentations during the semester. In principal, the auditors supported this approach of a "continuous assessment" as it offered students continuous feedback on their progress in developing competences.

The programme coordinators explained that the ITB Directorate of Education arranges the schedule of examinations. The mid-semester examination is usually held in week 8 or 9, while the end-semester examination takes place during the 2 weeks following completion of the classes. In addition to the publication of the course schedule, the examination dates and times are announced on each undergraduate programme's announcement board. The students confirmed that the examinations were well organised and fully transparent. The peers gained the conviction that exams were marked using transparent criteria. The auditors understood that the deadline for submission of the Final Score List is two weeks after the end of semester examinations to ascertain that no delays hampered the progression of the students. Students have the right to inquire their marked examination, quizzes, and assignments and can ask questions should there be a grading mistake. The lecturers have the obligation to arrange examinations for students who have not taken the examination for a valid reason; for students with disabilities or other limitations compensational measures are agreed on individually.

The students have to finish a final project by conducting research in one of the areas of interest. Each student chooses a prospective supervisor and decides on the research subject for their final project. The objective of the final project is to synthesize the eophysical engineering knowledge, apply the scientific method to conduct problem solving and obtain

the research objective, and deepen the understanding in the research areas concerned. The final project takes 6-12 months to complete, depending on the complexity of the research. The final project report is defended orally in front of a committee. The auditors examined the final theses and gained the impression that the quality of the theses was generally of good standard.

The peers also welcomed the fact that students carried out the final thesis outside the university. Some lecturers maintained close connections to private businesses and if the supervisor and the student agreed on a topic accepted by the private company the project could be conducted in the company.

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

The peers assessed the criterion as completely fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self Assessment Report
- Staff handbook for all degree programmes under review
- Discussions with representatives of ITB management, programme coordinators, lecturers, students

Preliminary assessment and analysis of the peers:

In total there are 41 lecturers involved in the Geodesy and Gematics Engineering programme. 33 of them are holding doctorate degree in Geodesy and Geomatics from university in Japan, Australia, Germany, Austria, Malaysia, France, the Netherlands, USA, Malaysia and ITB. In the Bachelor's degree programme Urban and Regional Planning 46 lecturers are involved. 74% of them hold Doctoral Degree from international universities (i.e US, UK, France, Germany, Belgium, Japan, Australia, Canada, and Indonesia), 15% of them are Professor, and 5% are Ph.D. Candidates. In the Programme Geological Engineering the teaching staff contains five full professors, 10 associated and 12 assistant Professors.

The peers reviewed various research activities carried out in the last years. Either the government or private companies finance most of the national projects. The panel welcomed that students were partly involved in these research projects. Additionally, the faculty is involved in international projects with foreign universities as well. From the point of view

of the peers, the lecturers are well integrated into national and international networks regarding research activities.

Summarising, the peers noticed that the composition, scientific orientation and qualification of the teaching staff are suitable for sustaining the degree programme and that the quantity of the staff ensured a good professor student ratio with regard to the supervision of the students during their studies and final theses.

Criterion 4.2 Staff development

Evidence:

- Self Assessment Report
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
ITB explained that there were several concepts to enhance the didactical competences of staff members. ITB supported academic staff members who hold a master's Degree to continue their study to doctorate level. Faculty members were encouraged to present their research papers in both national and international conferences, and to collaborate with colleagues from leading foreign universities. Additionally, there is a specific division at ITB offering in-house training particularly in relation to human resources development, management and organization. Especially new staff members were required to take short courses in teaching methodology. Hence, the peers could see that ITB offered opportunities to staff members to further develop their professional and teaching skills. Sabbaticals are possible for the lecturers with a funding from government for 3 month and there were financial support for visiting congresses as well.

Criterion 4.3 Funds and equipment

Evidence:

- Self Assessment Report
- Onsite visit of the laboratories, lecture rooms, and the library
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The peers were explained that financial sources for ITB originated from government funding, society funding, and tuition fees. The report provided an overview of the "operational budget" and the "research grants" for the Faculty. The operational funds were distributed

to the Faculties and Schools of ITB based on a specific formula depending on the number of students. The salary for staff members included a basic salary from government and incentives depending on additional efforts of staff members. The management of ITB stressed that even if the contributions from private businesses decreased to zero due to bad economic developments, ITB would still be capable to maintain its operations.

The peers were convinced that the financial means were sufficient and secured for the timeframe of the accreditation.

The financing of the equipment is ensured mostly by external funds (third party money). Because the actual standard is only increasing slowly the peers noticed room for modernisation of the laboratory and software equipment in Geological Engineering and Geodesy. Especially with regard to engineering aspects in the Programme Geological Engineering, the peers saw the need to increase and to modernise the equipment. They doubt whether an engineering could be running in long term with the existing equipment.

In Urban and Regional Planning the studios are well organised. Students do have their own workstation within the studios and get funds to buy materials for the models. The only deficit is the temporal access to the studios, which close early in the evening. According to the wish of the students the peers recommended to extend the temporal access to the studios

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

[…]

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Module descriptions:

Preliminary assessment and analysis of the peers:
The peers positively noted that the full set of modules descriptions is published for every degree programme under review. Hence, the module descriptions are available for all interested stakeholders. The peers examined the module descriptions and noted that the modules have comprehensible names and identification codes. The module descriptions inform in an adequate way about the person responsible for the each module, about the

teaching methods and workload, about the intended learning outcomes and the content of the modules, about admission and examination requirements, forms of exams and recommended literature.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Certificate of study programme is missing
- Transcript of Records of study programme is missing
- Diploma Supplement is missing

Preliminary assessment and analysis of the peers:
The peers comprehended that after graduation a degree certificate, a transcript of records and a Diploma Supplement are issued. However, none of these documents had been made available to the peers and they request to submit this as additional information. Statistical data as set forth in the ECTS User's Guide are included to allow readers to categorise the individual result/degree.

Criterion 5.3 Relevant rules

Evidence:

- Regulations for Academic and Student Affairs Institut Teknologi Bandung

Preliminary assessment and analysis of the peers:
The peers acknowledged that in the “Academic and Student Regulations” a full section on “Student Ethics” clearly defined the behavioural expectations ITB had towards the students. Furthermore, the section on “Academic Regulations” explained the rights and duties of ITB and students in detail. The auditors could see that all necessary rights and duties of both ITB and students were clearly defined and binding for all relevant stakeholders. The “Academic and Student Regulations” document is published under on the webside. However, this site can only be accessed inside campus through intranet as the peers had been told.

The peers understood that the students received all relevant course material in the language of the degree programme including the syllabi at the beginning of each semester. In addition, most information is also available on the intranet accessible for all students.

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

The peers assessed the criterion as completely fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self Assessment Report
- Regulations for Academic and Student Affairs Institut Teknologi Bandung, 2014.
- Discussions with representatives of ITB management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The auditors were explained that the University applied two types of quality assurance system, namely the Internal Quality Assurance and External Quality Assurance systems. The Internal Quality Assurance encompasses all activities focused on the improvement of teaching and learning quality within the university. The External Quality Assurance focused on both national and international accreditation. ITB maintained a Quality Assurance Unit, which was in charge of preparing the guidelines and quality standards for institutional programmes and carry out the respective activities.

In the "Academic and Student Regulations Quality" the evaluation of the lectures and lecturers were defined. The evaluations are implemented both by online and written surveys; students have to submit their evaluation results to obtain their grades which enforces high participation of the students. If staff members received bad evaluation results the Head of Department discussed this with the lecturers and possibly encouraged them to take additional didactical training. If the bad performance persisted the Dean would talk to respective lecturer. Furthermore, there was also a complaint box available which was used occasionally. The evaluation results were published in a generalized way but not for individual modules. The peers learnt that it was not a custom to discuss the evaluation results with the students; the students cannot really judge if changes take place based on their evaluation. Sometimes they get information about changes from students of the following year. The students explained that they could approach lecturers directly if they were discontent with certain aspects of a lecture and some lecturers changed the lecture according to the recommendation of the student. Even though the peers could see that the results of evaluations were used to further improve the degree programmes, they could not get a full

comprehension of the feedback loops to the students. From their point of view the university hast to ensure that students get a feedback on the results of at least those teaching evaluations they were involved in.

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

Obviously there is a misunderstanding in the response of the university after the onside visit. The peers criticised that the students do not get feedbacks about the results of the teaching evaluation while the university referred that point to the feedback about the performance of the students during their studies. The support and the contact to the teaching staff is really intensive from the point of view of the peers.

The peers confirmed their former assessment and suggested a requirement to ensure that students get a feedback on the results of at least those teaching evaluations they were involved in.

D Additional Documents

No additional documents are needed

E Comment of the Higher Education Institution

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

- New description of the learning objectives for the Bachelor's degree programme Geological Engineering
- Draft of a modified curriculum of the Bachelor's degree programme Geological Engineering

F Summary: Peer recommendations

The peers recommend the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Geological Engineering	With one requirement for one year	--	30.09.2024
Ba Geodesy and Geomatics	With one requirement for one year	--	30.09.2024
Ba Urban and Regional Planning	With one requirement for one year	--	30.09.2024

Requirements

A 1. (ASIIN 6) Ensure that students get a feedback on the results of at least those teaching evaluations they were involved in.

Recommendations

For all programmes

E 1. (ASIIN 1.4) It is recommended to recognize achievements of students not only from cooperating universities but to define a more open regulation.

E 2. (ASIIN 2.1) It is recommended to increase the number of modules in English language in order to make the programmes even more attractive for international students.

For Bachelor Geological Engineering and Bachelor Geodesy and Geomatics Engineering

E 3. (ASIIN 4.3) It is recommended to improve the equipment of the laboratories and to partly modernize it.

For Bachelor Urban and Regional Planning

E 4. (ASIIN 1.3) It is recommended to make it more transparent to students how to specialize either in urban, rural or in regional planning.

(ASIIN 4.3) It is recommended according to the wish of students to extend the temporal access to the studios.

G Comment of the Technical Committee

Technical Committee 03 – Civil Engineering, Geodesy, Architecture

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

Technical Committee 11 – Geosciences

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

H Decision of the Accreditation Commission

The Accreditation Commission for Degree Programmes discussed the procedure and followed the assessment of the peers and the technical Committee without any changes.

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

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Geological Engineering	With one requirement for one year	--	30.09.2024
Ba Geodesy and Geomatics	With one requirement for one year	--	30.09.2024
Ba Urban and Regional Planning	With one requirement for one year	--	30.09.2024

Requirements

A 1. (ASIIN 6) Ensure that students get a feedback on the results of at least those teaching evaluations they were involved in.

Recommendations

For all programmes

E 1. (ASIIN 1.4) It is recommended to recognize achievements of students not only from cooperating universities but to define a more open regulation.

E 2. (ASIIN 2.1) It is recommended to increase the number of modules in English language in order to make the programmes even more attractive for international students.

For Bachelor Geological Engineering and Bachelor Geodesy and Geomatics Engineering

E 3. (ASIIN 4.3) It is recommended to improve the equipment of the laboratories and to partly modernize it.

For Bachelor Urban and Regional Planning

E 4. (ASIIN 1.3) It is recommended to make it more transparent to students how to specialize either in urban, rural or in regional planning.

(ASIIN 4.3) It is recommended according to the wish of students to extend the temporal access to the studios.

I Fulfilment of Requirements

Analysis of the peers and the Technical Committee/s

Requirements

For all degree programmes

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

Initial Treatment	
Peers	fulfilled Vote: unanimous

	Justification: The university changed the quality assurance system, which includes now feedback discussion with the students.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers
TC 11	fulfilled Vote: unanimous Justification: The Technical Committee follows the assessment of the peers

Decision of the AC Programmes on 20.03.2020:

Degree Programme	**ASIIN-seal**	**Subject-specific label**	**Maximum duration of accreditaiton**
Ba Geological Engineering	All requirements are fulfilled	--	30.09.2024
Ba Geodesy and Geomatics	All requirements are fulfilled	--	30.09.2024
Ba Urban and Regional Planning	All requirements are fulfilled	--	30.09.2024

Appendix: Programme Learning Outcomes and Curricula

For the Bachelor's degree programme Geological Engineering the following **curriculum** is presented:

Semester I

No	Code	Courses Name	CU
1	MA1101	Mathematics I A	4
2	FI1101	Elementary Physic I A	4
3	KI1101	General Chemistry I A	3
4	KU1101	Introduction to Engineering and Design 1	2
5	KU1011	Indonesian Language: Scientific Writing	2
6	KU1163	Introduction to Earth Sciences and Technology	2
		Total	17

Semester II

No	Code	Courses Name	CU
1	MA1201	Mathematics II A	4
2	FI1201	Elementary Physic II A	4
3	KI1201	General Chemistry II A	3
4	KU201	Introduction to Engineering and Design 2	2
5	KU102X	English	2
6	KU1071	Introduction to Information Technology B	2
7	KU1001	Sports	2
		Total	19

Semester III

No	Code	Courses Name	CU
1	GL2111	Physic Geology	3
2	GL2141	Crystallography and Mineralogy	3
3	GL2102	Applied Geophysics	2
4	GL2171	Paleontology	3
5	GL2131	General Geochemistry	2
6	GL2101	Mathematics and Statistics for Geology	2
7	GL2103	Engineering Mechanics	2
		Total	17

Semester IV

No	Code	Courses Name	CU
1	GL2012	Structural Geology	3
2	GL2242	Petrology	3
3	GL2201	Geostatistics	2
4	GL2261	Micropaleontology	3
5	GL2213	Tectonophysics	2
6	GL2281	Fluid Mechanics of Solid Earth Materials	2
7	GL2202	Law and Regulation on Earth Management	2
		Total	17

Semester V

No	Code	Courses Name	CU
1	GL3141	Optical Mineralogy and Petrography	3
2	GL3101	Geocomputation	3
3	GL3151	Sedimentology	3
4	GL3152	Stratigraphy	2
5	GL3111	Geomorphology	3
6	GL3102	Marine Geology	2
7	GL3103	Rock Mechanics	3
		Total	19

Semester VI

No	Code	Courses Name	CU
1	GL3203	Geology of Indonesia	2
2	GL3201	Soil Mechanics	2
3	GL3205	Geology Information System	3
4	GL3291	Reference Study	2
5	GL3241	Volcanology	2
6	GL3204	Field Geology	3
7	GL3271	Historical Geology	2
		Total	16

Semester VII

Geotechnics emphasis

No	Code	Courses Name	CU
1	GL4022	Rock and Soil Engineering	2
2	GL4001	Investigation of Geotechnics and Hydrogeology	2
3	GL4021	Engineering Geology	3
4	GLxxxx	Emphasis Electives (2 or 3 courses)	6
5	GLxxxx	Free Electives (2 or 3 courses)	6
6	GL4091	Capstone (Design Project)	2
		Total	21

Ground-water emphasis

No	Code	Courses Name	CU
1	GL4082	Hydrogeology	3
2	GL4001	Investigation of Geotechnics and Hydrogeology	2
3	GL4083	Groundwater Modelling	3
4	GLxxxx	Emphasis Electives (2 or 3 courses)	6
5	GLxxxx	Free Electives (2 courses)	5
6	GL4091	Capstone (Design Project)	2
		Total	21

Petroleum emphasis

No	Code	Courses Name	CU
1	GL4002	Methods in Geological Exploration	3
2	GL4052	Well Logging Geology	2
3	GL4055	Petroleum Geology	3
4	GLxxxx	Emphasis Electives (2 or 3 courses)	6
5	GLxxxx	Free Electives (2 courses)	5
6	GL4091	Capstone (Design Project)	2
		Total	21

Economic Geology emphasis

No	Code	Courses Name	CU
1	GL4047	Mineral Deposits / Coal Geology	3
2	GL4002	Methods in Geological Exploration	3
3	GL4048	Mining Geology	2
4	GLxxxx	Emphasis Electives (2 or 3 courses)	6
5	GLxxxx	Free Electives (2 courses)	5
6	GL4091	Capstone (Design Project)	2
		Total	21

Geothermal emphasis

No	Code	Courses Name	CU
1	GL4002	Methods in Geological Exploration	3
2	GL4042	Geothermal Geology	2
3	GL4049	Geothermal Bore-hole	3
4	GLxxxx	Emphasis Electives (2 or 3 courses)	6
5	GLxxxx	Free Electives (2 courses)	5
6	GL4091	Capstone (Design Project)	2
		Total	21

Applied Geology

No	Code	Courses Name	CU
1	GL4001	Investigation of Geotechnics and Hydrogeology	2
2	GL4002	Methods in Geological Exploration	3
3	GLxxxx	Electives (Geotechnics and Ground-Water path)	2
4	GLxxxx	Electives (Energy and Mineral Exploration path)	2
5	GLxxxx	Free Electives	10
6	GL4091	Capstone (Design Project)	2
		Total	21

Semester VIII

No	Code	Courses Name	CU
1	GL4098	Final Project A	5
		Total	5

No	Code	Courses Name	CU
1	GL4099	Final Project B	3
		Total	3

For the Bachelor's degree programme Geodesy and Geomatics Engineering the following **curriculum** is presented:

Semester 1				Semester 2			
NR.	COURSE CODE	COURSE	SKS	NR.	COURSE CODE	COURSE	SKS
1	MA1101	Mathematics I	4	1	MA1201	Mathematics II	4
2	FI1101	Elementary Physics IA	4	2	FI1201	Elementary Physics IIA	4
3	KI1101	Basic Chemistry IA	3	3	KI1201	Basic Chemistry IIA	3
4	KU1101	Introduction to Engineering and Design I	2	4	KU1201	Introduction to Engineering and Design II	2
5	KU1011	Scientific Writings	2	5	KU102X	English (KU1021/1022/1023)	2
6	KU1163	Introduction to Earth Sciences and Technology	2	6	KU1001	Sports	2
				7	KU1072	Introduction to Information Technology	2
Total = 17 SKS				Total = 19 SKS			
Total SKS YEAR 1 = 36 SKS							
Semester 3				Semester 4			
NR.	COURSE CODE	COURSE	SKS	NR.	COURSE CODE	COURSE	SKS
1	KU206X	Religion and Ethics	2	1	GD2201	Positioning II	3
2	GD2101	Positioning I	3	2	KU2071	State Philosophy and Civic Education	2
3	GD2102	Geometric Geodesy	4	3	GD2202	Geometric Reference System	3
4	GD2103	Statistics in Geodesy and Geomatics	3	4	GD2203	Estimation and Approximation	3
5	GD2104	Geodetic Computation I	3	5	GD2204	Geodetic Computation II	3
6	GD2105	Introduction to Spatial System	2	6	GD2205	Satellite Geodesy	2
7	GD2106	Geospatial Expedition	2	7	GD2206	Geospatial Law and Regulations	2
Total = 19 SKS				Total = 18 SKS			
Total SKS YEAR 2 = 37 SKS							
Semester 5				Semester 6			
NR.	COURSE CODE	COURSE	SKS	NR.	COURSE CODE	COURSE	SKS
1	GD3101	Terrestrial Mapping	3	1	GD3201	Cartography	3
2	GD3102	Hydrography I	3	2	GD3202	Hydrography II	3
3	GD3103	Photogrammetry I	3	3	GD3203	Photogrammetry II	3
4	GD3104	Spatial Database	3	4	GD3204	Thematic Mapping	3
5	GD3105	GNSS Surveying	3	5	GD3205	Remote Sensing	4
				6	GD3206	Field Camp	3
Total = 15 SKS				Total = 19 SKS			
Total SKS YEAR 3 = 34 SKS							
Semester 7				Semester 8			
NR.	COURSE CODE	COURSE	SKS	NR.	COURSE CODE	COURSE	SKS
1	GD4101	Geographic Information Systems	3	1	GD4202	Quality Management	2
2	GD4102	Cadastre System	4	2	GD4002	Undergraduate Thesis	6
3	GD4103	Environmental Geography	2	3	GD4201	Geospatial Information Industry	2
4	GD4001	Internship	2				
Total = 11 SKS				Total = 10 SKS			
Total SKS YEAR 4 = 21 SKS							
Elective Course							SKS
1	Internal Study Programme						12
2	Free Elective Course (Internal or External Elective Courses)						4
Total SKS = 144 SKS							

For the Bachelor's degree programme Urban and Regional Planning the following **curriculum** is presented:

Semester I				Semester II			
	Code	Course Name	CU		Code	Course Name	
1	MA 1101	Mathematics I A	4	1	MA 1201	Mathematics II A	4
2	FI 1102	Elementary Physics I B	3	2	FI 1202	Elementary Physics II b	3
3	KI 1102	Basic Chemistry I B	2	3	KI 1202	Basic Chemistry II B	2
4	KU 1101	Introduction to Design & Engineering I	2	4	KU 1102	Introduction to Design & Engineering II	2
5	KU 1011	Scientific Writing in Indonesian	2	5	KU 102X	English	2
6	KU 1001	Sports	2	6	KU 1072	Introduction to Information Technology	2
7	AR 1101	Introduction to Planning and Design	3	7	PL 1202	Communication and Presentation Techniques	3
		Total	**18**			**Total**	**18**

Semester III				Semester IV			
	Code	Course Name	CU		Code	Course Name	CU
1	GL 21CD	Introduction to Environmental Geology for Planning	2	1	PL 2251	Urban and Regional Economics	3
2	PL 2101	Environment and Natural Resources	3	2	PL 2201	Land Use Planning	2
3	PL 2102	Locational Pattern and Spatial Structure	3	3	PL 2231	Introduction to Urban and Regional Infrastructure	2
4	PL 2151	Introduction to Economics	2	4	PL 2211	Housing System	2
5	PL 2103	Introduction to Spatial Data	3	5	PL 2202	Planning Methods II	4
6	PL 2104	Population Analysis in Planning	2	6	PL 2209	Planning Process Studio	3
7	PL 2105	Planning Methods I	3	7	PL 2241	Planning Law	2
		Total	**18**			**Total**	**18**
Semester V				**Semester VI**			
	Code	Course Name	CU		Code	Course Name	CU
1	PL 3111	Urban Planning	3	1	PL 3221	Regional Planning	3
2	PL 3101	Social System and Community Development	3	2	PL 3222	Rural Planning	2
3	PL 3131	Urban and Regional Infrastructure Planning	3	3	PL 3219	Urban Planning Studio	4
4	PL 3119	Site Planning Studio for Residential	3	4	PL 3239	Urban and Regional Infrastructure Studio	3
5	PL 3141	Development Finance	2	5	PL 3241	Development Administration & Management	3
6	XX xxxx	Elective	2	6	XX xxxx	External Elective	3
7	XX xxxx	Elective	2	7			
		Total	**18**			**Total**	**18**
Semester VII				**Semester VIII**			
	Code	Course Name	CU		Code	Course Name	CU
1	PL 4219	Regional Planning Studio	4	1	PL 4201	Planning Theory	2
2	PL 4112	Urban Design	2	2	PL 4202	Development Control	2
3	Pl 4190	Internship	2	3	PL 4290	Final Project	6
4	PL 4101	Research Methods	2	4	KU 2071	Pancasila & Nationality	2
5	PL 4102	Planning Evaluation techniques	2	5	KU 206X	Religion and Ethics	2
6	XX xxxx	Elective	2	6	PL 4103	Planning Information System	2
7	XX xxxx	Elective	2	7	XX xxxx	Elective	2
8	XX xxxx	Elective	2	8			
		Total	**18**			**Total**	**18**