ASIIN Seal & EUR-ACE® Label

Accreditation Report

Bachelor's Degree Programme
Civil Engineering

Provided by
Namibia University of Science and Technology

Version: 23.03.2018

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Ba Civil Engineering	Civil Engineering	ASIIN, , EUR-ACE® Label	--	TC 03
Date of the contract: 07.06.2016 **Submission of the final version of the self-assessment report:** 15.08.2016 **Date of the onsite visit:** 10./11. November 2016 **at: Windhoek**				
Peer panel: Dipl.-Ing. Alfredo Barillas, TSB Ingenieurgesellschaft mbH; Prof. Dr. Gerhard Partsch, University of Applied Sciences Deggendorf; Prof. Dr. Günter Schmidt-Gönner, University of Applied Sciences Saarland; Prof. Dr. Renatus Widmann, University Duisburg-Essen				
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 May 2015 ASIIN General Criteria, as of 28.03.2014				

[1] ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering 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, Surveying 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 – Agronomy, Nutritional Sciences and Landscape Architecture; TC 09 – Chemistry; TC 10 – Life Sciences; TC 11 – Geosciences; TC 12 – Mathematics; TC 13 – Physics.

Subject-Specific Criteria of Technical Committee 03 – Architecture, Civil Engineering, Geodesy as of 09.12.2011	

B Characteristics of the Degree Programme

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Doublet Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor of Engineering in Civil Engineering	BEng, Civil		Level 6	Full time	Yes FH Aachen	4 years with 8 Semester	597 NQF	2012

For the Bachelor's degree programme the institution has presented the following profile in the NUST Yearbook 2016:

The programme in Civil Engineering demands a high level of theoretical engagement and intellectual independence and aims to foster deepened, comprehensive and systematic expertise in the major subject/cognate areas of learning, i.e. structural engineering, transportation engineering, water engineering and geotechnical engineering. Students will be equipped with cognitive and intellectual skills, key transferable skills, and professional/technical/practical skills that would enable them to plan, design, construct, and maintain the physical and naturally built environment, including works like bridges, roads, canals, dams, and buildings. The programme includes a substantial element of Work Integrated Learning and requires the conduct and reporting of supervised research in order to adequately prepare students for entry into the profession.

The principal purposes of this programme are to:

• Provide students with professional competencies related to professional practice in Civil Engineering so as to meet to the needs of the industry/market;

• Equip students with a foundation for further intellectual development and opportunities for gainful employment and rewarding contributions to society;

• Produce students who are prepared for and demonstrate understanding of the principles of:

[3] EQF = The European Qualifications Framework for lifelong learning (level 6: bachelor's degree programmes, level 7 master's degree programmes, level 8 phd)

- life-long learning,
- critical thinking,
- a wide range of issues which are crucial to the welfare of society, for example, upliftment, empowerment and transformation;

• Contribute towards a student's personal career path development by laying the foundation for further specialisation/qualifications in worldwide accepted sub-disciplines;

• Equip students with generic competencies in communication, teamwork and cross-cultural cooperation.

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 (see appendix)
- NUST Yearbook 2016
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The peers noticed that the objectives and learning outcomes of the programme are described in concise way. They are well-published in the year book and on the websites of the faculty.

Comparing to the ASIIN Subject-Specific Criteria for Civil Engineering the peers saw that students should get well-founded knowledge in the fields of mathematics and natural science, as well as in subject-specific fundamentals. Additionally students should deepened, expanded and apply their subject-specific skills in the different fields of civil engineering in order to identify and analyse problems in structural engineering, transportation engineering, water engineering and geotechnical engineering. Also the peers noticed that students should become able to develop methods for proof and forecast as well as concepts and plans.

Although it is not formulated explicit in the objectives that students should get knowledge of economic and legal basics for the peers such knowledge is implicated in the aim to prepare students to plan, design, construct, and maintain the physical and naturally built environment, including works like bridges, roads, canals, dams, and buildings. Without any

[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.

economic or legal knowledge graduates would not be able to act in these fields of civil engineering.

Regarding to personal skills of the students the peers saw that they should be able to use research methods to identify, interpret and integrate technical literature. Additionally students should be able to communicate with professional colleagues and individuals of a wider public and should be able to work in teams. Additionally graduates should be aware to the impact of engineering activities on the social, economic and ecological environment.

Concluding the objectives of the programme the peers assessed that students on the one hand should be professionally qualified for professional careers and on the other hand for advanced scientific degree programmes. They saw that the graduates of the programme should be able to accomplish key activities in civil engineering largely autonomously and partly on their own responsibility. Further on they assessed that the programme met in general the ASIIN subject specific criteria for civil engineering. Additional they saw adequate formulated objectives regarding the knowledge and understanding, engineering analysis, engineering design, investigation and assessment, engineering practice and transferable skills to meet the standards of the EUR ACE framework.

The peers learned that representatives from industry were involved in the further development of the objectives. From the view of the peers the objectives reflect the level of academic qualification aimed at although in some cases they are formulated quite ambitious and offer good chances for the graduates on the labor market.

Criterion 1.2 Name of the degree programme

Evidence:

- NUST yearbook 2016

Preliminary assessment and analysis of the peers:
The title of the programme is published on the subject specific webpage. The auditors confirmed that the name of the degree programme properly reflected the intended aims and learning outcomes.

Criterion 1.3 Curriculum

Evidence:

- The NUST yearbook 2016 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
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The first year of the programme is common for all engineering programmes at NUST. Here the fundamentals in mathematics and natural sciences are taught in Modules for engineering mathematics, engineering mechanics, engineering physics and engineering chemistry. Additionally all engineering students absolve modules about engineering drawing and computer aided drawing, material sciences, mechanics of materials and electrical circuits. Finally there is a language module and a practical workshop common for all students.

Since the second year the programmes are divided into the specific fields of engineering. In the programme under review the fundamentals of mathematics and natural sciences are deepened and extended in modules about fluid mechanics, statistics, theory of structure and engineering geology. Further on the students get fundament knowledge in business management and they start with field specific fundamentals in surveying, facility management, water and traffic engineering. In the fourth semester there is also a module about information competences.

In the third year the curriculum intensive the treatment of the specific field fundamentals in modules about water and wastewater, geometric design of roads, structural analysis, geotechnical engineering, concrete and masonry design, pavement technology and structural design of steel and timber. Further on the third year contents a seminar about contemporary issues, and modules about economic bases like entrepreneurship and construction cost calculation.

During the fourth year students apply their fundamental knowledge in modules about computer applications in structural engineering, waste management, environmental engineering, continuums mechanics and finite element methods, geometric design of routes, hydraulic structures. Also in the fourth year students have the opportunity to choose two elective courses to follow individual interests. They get basic knowledge about contract law and learn non technical aspects regarding society, ethics and professionalism. The programme finishes with a civil engineering project instead of a thesis. The project is divided in two parts, one in group work the second part is done independently by the students and is comparable to a thesis. The project can be done in cooperation with external companies.

The peers understood that NUST made good experiences with the first common year for all engineering students. For equalisation it is useful to give mathematics for all engineering students and it is well tried that students have the opportunity to choose their specific field

of engineering after first experiences. The students confirm that it was helpful to have general impressions about engineering subjects before choosing the specific direction. Nevertheless the peers wondered why there is a module about electrical circuits but not any field specific module of mechanical or civil engineering. In order to give students an impression about civil engineering it would be helpful if field specific aspects would be integrated in the first year as well.

Further on the peers learned out of the discussion with the programme coordinators that the laboratory practice is well guided but do not support mainly independent work of the students as it is mentioned erroneously in the self assessment report.

The peers confirmed that the curriculum allows the students to achieve the intended learning outcomes in order to obtain the degree. The objectives and intended learning outcomes for the degree programme are systematically substantiated and updated in its individual modules.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- NUST Yearbook 2016

Preliminary assessment and analysis of the peers:
Admission to the BEng, Civil degree programme requires a Grade 12 at the National Secondary School Certificate Higher Level (NSSC) with at least 37 points on the Engineering Evaluation Scale and with a minimum of 3 symbols in Mathematics, Physical Science and English Language. In case that there are more applications than the capacity of the programme a ranking list based on the national grade is defined by the university.

After finishing the new building the number of beginners per year increased from 25 to 35 due to bigger classrooms and a higher laboratory capacity. The absolute maximum number of beginners is limited 40 due to the capacity of the PC pools. For those students who did not fully fulfil the admission requirements in total there is an preparation phase to increase their abilities which can last until one year.

The peers found the terms of admission, the requirements and procedures binding, transparent and equal for all applicants. The admission requirements are structured in a way that supports the students in achieving the learning outcomes and there are clear rules how requirements which are not fulfilled by single students can be compensated individually.

Only about the double degree the peers were doubtful whether the admission requirements ensure that Namibian students have adequate German language skills for their semester in Aachen. Therefore they recommended with regard to the double degree to evaluate whether the language skills of the Namibian students are sufficient to follow lectures in German.

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

The peers registered that from the point of view of the university civil engineers are expected to have basic knowledge in Electrical engineering field especially wiring and cable coding. Nevertheless they recommended to include some specific contents of civil engineering in the first year as well.

The peers confirmed their former assessment and in general saw the criterion fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Student's Guide
- Module descriptions

Preliminary assessment and analysis of the peers:
The peers assessed that the degree programme is divided into modules and its structure is clearly outlined on the subject specific website. Each module is a sum of teaching and learning whose contents are concerted. With its choice of modules, the structure ensures that the learning outcomes can be reached and allows students to define an individual focus and course of study. Based on the analysis of the sequence of modules and the respective module descriptions the peers concluded that the structure of the degree programme ensures that the learning outcomes can be reached.

The programme structure under review is clearly outlined on the subject specific website for each study programme. The module descriptions are also published on the subject specific website in English and can be downloaded. The programme also offers some elective courses which allow the students to define an individual focus. The Internship is integrated into the curriculum and the university ensures its quality in terms of relevance, content and

structure although there are no credit points given for the internship (see chapter 2.3 below).

The modules have been adapted to the requirements of the degree programme. They ensure that the module objectives help to reach the qualification level.

The sequence of the modules allows generally students to complete the degree without exceeding the regular duration of the programme. But the peers saw really much prerequisites regarding the admission to the single modules. Therefore students have only small room to follow an individual study plan and in case they miss one exam they run inevitably out of the scheduled study plan. From the view of the peers it seemed doubtful whether all these prerequisites are needed to ensure the quality of the programme. They recommended to reduce the prerequisites for single modules to the absolute essentials in order to make the programme more flexible.

To support the academic mobility of the student NUST offered a double degree with a German university of applied sciences for the programme under review. This cooperation ensures that students studying abroad do not lose time because of structural, administrative or organisational reasons. Additional there are rules for recognising achievements students acquired at other higher education institution.

Criterion 2.2 Work load and credits

Evidence:

- NUST Workload Policy and Procedure
- Self Assessment Report
- Module descriptions:
- Student Service Handbook
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The peers understood that NUST uses the Namibian national credit point system based on 10 hours student workload per credit point. The university defined for the complete programme a minimum of 597 Namibian credits points and a maximum of 678 credits, depending of the courses chosen by the students.

The peers determined that there is no official transformation from the Namibian credit points to European Credit Transfer System (ECTS) Points. Nevertheless the peers assessed

that the complete programme comprehends a minimum of round about 6000 hours student workload which are corresponding to 200-240 ECTS points. As NUST mentioned in the self assessment report most of the cooperating universities are located in Europe. Keeping that in mind the peers recommended to make the transfer of national credits to ECTS points more transparent to foreign stakeholders.

Considering the named NQF points for the single modules the peers assessed the estimated time budgets of the single modules as realistic comparing to their defined learning outcomes and contents. This is confirmed by the students. Structure-related peaks in the workload have been avoided by the university.

But the peers asserted that no credit points are given for the module "Work Integrated Learning" which includes the internship with 480 working hours. They pointed out that according to the ECTS User's Guide all mandatory parts of the curriculum has to be account for the student workload and the ECTS Points. On the other side the peers did not see the programme overloaded comparing to European study programmes with up to 7200 hours in eight semesters. Even with the maximum defined workload of 6780 hours and the additional internship the programme would be in the range of European standards. From this side of view it is only a formal problem. On the other hand from the view of the peers the complete workload should be transparent for the students. They understood that NUST also wants to fulfill the criteria of the Washington Accord which do not see internships as part of a curriculum but the university has to find a way to make the complete workload transparent to the students.

Criterion 2.3 Teaching methodology

Evidence:

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

Preliminary assessment and analysis of the peers:

The programme under review is a full-time programme with classroom, structured, and self-study activities. The staff members 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 and practical activities in labs. Group project assignments are also given in some courses to develop students' skill in teamwork, discussion, and coordination. Also the field practice is done as group work. The peers concluded also with reference to the remarks of

the students that the teaching methods and instruments used supported in general the students in achieving the learning outcomes.

Nevertheless the peers got the impression of a much guided study programme. They could follow the didactical concept for the first semesters that a high number of assessments should guide students through the programme with only little time for self studies. But even for such a didactical concept up to 6 assessments per module and 5-7 modules per semester seems to be rather high. At least in the higher semester there should be more time for unguided self studies of the students to enable them to train working independently and using academic methods.

Criterion 2.4 Support and assistance

Evidence:

- Self Assessment Report
- NUST Yearbook 2016
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The peers welcomed the extended offers of students support regarding health and social welfare or career guidance. The university offers as well dormitories for students coming out of Windhoek. The field specific advisory system at the faculty was expressively complemented by the students and lecturers are easily reachable. Additionally the university has established an early alert programme. In case students get bad grades in the first assessments of a semester the dean will be informed and will write to the student or even the parents. The peers underlined that the allocated advice and guidance, namely the early alert programme assisted the students in achieving the learning outcomes and in completing the course within the scheduled time. Further on, they assessed very positively the preparatory year which lies before the start of the programme and which is offered to close a gap between High School and the requirements at the university.

Students have to pay fees but nearly all of them get some kind of grants either from government (i.e. reduction of the fees for the best students) or by private companies. For exchange students there are no national grants.

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

The peers determined that there is a different view from them and the university on the prerequisites for single modules. From their opinion study programmes are not flexible if

prerequisites are defined for more than half of all modules (Documentation of the curriculum, appendix 6 of the self assessment report). Therefore they suggest a recommendation to reduce the prerequisites for single modules to the absolute essentials.

Regarding the workload it was no question for the peers that the student workload is defined clearly for all modules in the module descriptions. But their point was that the workload of the complete programme is not transparent for the students because the internship is not included into the workload calculation for the complete programme. Considering the ECTS unser's guide they suggest a requirement to ensure that the credit point system includes all compulsory elements of the degree programme.

Finally the peers suggested recommendations to make the transfer of national credits to ECTS points more transparent to foreign stakeholders and to give students more time for unguided self studies at least in the higher semesters in order to prepare them to work more independently.

In summary they saw the criterion widely fulfilled.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

- Self Assessment Report
- Module descriptions
- NUST Yearbook 2016
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives, students

Preliminary assessment and analysis of the peers:
The peers determined that the exams are devised to individually measure to which extent students have reached the learning outcomes defined. They are structured to cover the intended learning outcomes and are module-related and offer students continuous feedback on their progress in developing competences. The programme comprises a final project which ensures that students work on a set task independently and at the level aimed for. For each module, a form of assessment has been defined.

All exams are organised in a way which avoids delays to student progression caused by deadlines, exam correction times, re-sits etc. All exams are marked using transparent cri-

teria. There are mechanisms in place which ensure that exams marked by different examiners are comparable. Failed exams can be repeated in the same semester. If the student failed again she or he has to repeat the complete module. Students are allowed to repeat failed exams as often as they like but the complete study period is limited to 8 years for the 4 year programme.

The peers were quite astonished about the number of exams which is with up to 6 assessments per module and 5-7 modules per semester tremendous high comparing to European standards. In case of real exams it would not be executable for students to absolve up to 40 examinations per semester. But the peers understood that these exams are a kind of permanent assessment with quite different forms like homework, exercises, laboratory practice reports and written tests. The concept of the university is to guide closely students through their study and keep them in a permanent process of learning. The students explained that there is a remarkable change to their school experiences but that they adjusted to the didactical concept after one or two semesters. They prefer these many small exams instead of few more extensive exams. The peers could not see an overloaded student workload due to the number of exams and they found out that there are nearly no overlapping of the exam dates. In case it happens students can find individual solutions with the faculty or lecturers.

As mentioned before the peers could follow the didactical concept to guide students closely for the first semesters. But from their point of view a study programme has to prepare students for individual academic work as well. Therefore they strongly recommended to reduce the number of exams at least in the higher semesters (see also chapter 2.3 above)

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

From the point of view of the peers the close guiding of students with a high number of exams could be helpful for students during their acclimatisation phase at the university in the first year. Afterwards the independent work of the students should be increased step by step.

In General the peers saw the criterion fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self Assessment Report
- Staff handbook
- Discussions with representatives of NUST management, programme coordinators, lecturers, business representatives

Preliminary assessment and analysis of the peers:
In general the peers noticed that the composition, scientific orientation and qualification of the teaching staff team are suitable for sustaining the degree. Considering the other programmes of the faculty the quantity of the staff seems to be still sufficient to offer all programmes in the foreseen quality. The peers understood that it is difficult to find qualified fulltime lecturers because the salary in industry is much higher than at the university. Therefore NUST promotes young academics by financing their further education in master programmes or as PhD students. Those lecturers are bound by contracts to NUST for several years after finishing their further education. Further on NUST engaged many part time lecturers from industry and from foreign universities. For example exists an exchange programme for teaching staff with the University of Applied Science Aachen.

There are plans from NUST to offer a master's degree programme in civil engineering as well. The peers understood that the faculty plans to run this master programme mainly with foreign lecturers. They observe that the current staff quantity would not be sufficient to run a bachelor and a master programme at the same time. From the view of the peers it would be a substantial change of the accreditation base if the teaching capacity for the bachelor programme would be reduced in order to run the master programme. In this case it would be necessary to assess the bachelor programme newly.

Regarding to research activities the peers learned that up to now the professors did not have many opportunities to undertake own projects due to the insufficient equipment of the laboratories and the teaching workload. With the new building and new lab equipment the staff now starts with the first projects. Out of this reason there are nearly no research projects with companies. The peers learned out of the discussion with representatives of the labour market that industry is highly interested in doing research activities with the university but did not have any information about the internal research projects at NUST or even about the fields of interests of the professors. The peers recommended to increase cooperation with the industry regarding research projects.

Criterion 4.2 Staff development

Evidence:

- Self Assessment Report
- Discussions with representatives of NUST management, programme coordinators, lecturers

Preliminary assessment and analysis of the peers:
The university explained that there were several concepts to enhance the didactical competences of staff members. Especially new staff members were required to take short courses in teaching methodology. As mentioned before NUST also promotes young academics by financing their master or PhD studies. Sabbatical for the professors are possible in principle but it is realised only with difficulties because there must be organised a substitute for the teaching tasks.

The peers confirmed that there are offers and support mechanisms available for teaching staff who wish to further develop their professional and teaching skills.

Criterion 4.3 Funds and equipment

Evidence:

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

Preliminary assessment and analysis of the peers:
The peers were explained that financial sources for NUST originated from tuition fees, government funding and society funding. The report provided an overview of the operational budget for the Faculty. The operational funds were distributed to the faculties of NUST based on a specific formula depending on the number of students. 50-60% of the budget is paid by the government and 25-30% of the funding comes out of student fees. The rest of the funding the faculty gets from third party projects. There is no cash flow to the university from industry but there are scholarships financed by private companies.

The new building of the faculty offers much space for teaching rooms, student work places laboratories and staff offices. The equipment of the laboratories is renewed and at the state of the art for teaching activities. It offers also adequate opportunities for research activities of the professors.

In total the available funds and the equipment form a solid basis for the degree programme.

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

The peers registered the explanation of the university how to increase the teaching capacity for an additional master's degree programme. Nevertheless they underlined that a reduction of the teaching capacity for the bachelor's degree programme would be a change of the accreditation base.

The peers saw the criterion fulfilled completely but they suggested a recommendation to increase cooperation with the industry regarding research projects.

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 the degree programme under review. Hence, the module descriptions are available for all interested stakeholders. The peers examined the module descriptions and noted that they are an adequate information base for the students. The descriptions contain the objectives and the content of the modules, the module titles, the responsible persons for the single modules, the teaching methods, the student workload in connection with the credit points for each module, the admission and examination requirements as well as the forms of assessments and recommended literature.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

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

Preliminary assessment and analysis of the peers:
After graduation a certificate in English language is issued together with a Transcript of Records. But there is no Diploma Supplement given to the students. To inform international stakeholders about the final qualification of the students from the view of the peers it is

necessary to issue a Diploma Supplement in English language as well. It has to 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 and has to give an overview about the Namibian education system. Furthermore it would be wishful to include statistical data in addition to the final mark as set forth in the ECTS User's Guide to allow readers to categorize the individual result of the student.

Criterion 5.3 Relevant rules

Evidence:

- Student Services Handbook

Preliminary assessment and analysis of the peers:
The rights and duties of both the higher education institution and students are clearly defined in several different regulations. All relevant course-related information is available in the language of the degree programme and accessible for anyone involved. The different regulations are summarised in the student service handbook. The peers determined as well that the university has defined the procedure for the definition of regulations (rules are worked out by the faculties and decided by the senate) with internal requirements for the regulations.

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

The peers confirmed their former assessment and saw the criterion partly fulfilled. They suggested a requirement to ensure that a Diploma Supplement is given to the graduates which contains 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 and statistical data according to the ECTS-Users‘ guide in addition to the final grade.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self Assessment Report

- Definition of Quality Management Policy
- Quality Management Framework
- 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.

The internal teaching evaluation takes place each semester for each course. Feedback loops to the head of department, the head of university and to the students are defined. The results of the evaluation could influence the decision of further employment of the single lecturer.

The peers confirm that the programme is subject to regular internal quality assessment procedures aiming at continuous improvement. For the purposes of continued development responsibilities and mechanisms are defined. For the further development of existing programmes and the development of new programmes first of all the needs are identified by questionnaires from different stakeholders. The Programme Advisory Committee compound by representatives of industry, the government and the university discuses the innovations. Afterwards the curriculum is send to academic international partner to prove whether it fits international requirements and comments from teaching staff and students as well as the quality assurance department are collected. Before the changes are decided by the senate of the university the national engineering council is involved also.

Collected data are suitable for the purpose and used to continue improving the degree programme, especially with a view to identifying and resolving weaknesses. Students and other stakeholders take part in the quality assurance process.

The peers determined out of the discussion with the students that feedback loops to the students are defined indeed but that they are not realized in an institutionalized way. On the other hand students find out the evaluation results due to the little size of groups in the single lectures and they also recognise the changes realised by lecturers. The peers welcomed the obviously close connection between teaching staff and students and the extensive information exchange within the students groups. Nevertheless from the view of the peers it is necessary to close institutionally the feedback loops with the students as well

in order that students get information of evaluation results independently from the engagement of single students or lecturers.

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

The peers confirmed their former assessment and saw the criterion partly fulfilled. They suggested a requirement to ensure that students getting a feedback about the results of the teaching evaluations.

D Additional Documents

No additional documents needed

E Comment of the Higher Education Institution

The university gives comments on different notes of the peers. Due to the lack of time the university could not realise any changes until no.

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 Civil Engineering	With requirements for one year	EUR-ACE®	30.09.2022

Accreditation with requirements

Requirements

For the national Bachelor

A 1. (ASIIN 2.2) Ensure that the credit point system includes all compulsory elements of the degree programme.

A 2. (ASIIN 5.2) Ensure that a Diploma Supplement is given to the graduates which contains 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 and statistical data according to the ECTS-Users' guide in addition to the final grade.

A 3. (ASIIN 6) Ensure that students getting a feedback about the results of the teaching evaluations.

Recommendations

For the national Bachelor

E 1. (ASIIN 1.3) It is recommended to include some specific contents of civil engineering in the first year already.

E 2. (ASIIN 2.1) It is recommended to reduce the prerequisites for single modules to the absolute essentials in order to make the programme more flexible.

E 3. (ASIIN 2.2) It is recommended to make the transfer of national credits to ECTS points more transparent to foreign stakeholders.

E 4. (ASIIN 2.3, 3) It is recommended to give students more time for unguided self studies at least in the higher semesters in order to prepare them to work more independently.

E 5. (ASIIN 4.1) It is recommended to increase cooperation with the industry regarding research projects.

G Comment of the Technical Committee (13.03.2017)

The technical Committee discussed the procedure and followed the assessment of the peers without any changes.

Assessment and analysis for the award of the EUR-ACE® Label:

The Technical Committee judges that the intended learning outcomes of the degree programme do comply with the engineering specific part of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy, Architecture.

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

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Civil Engineering	With requirements for one year	EUR-ACE®	30.09.2022

H Decision of the Accreditation Commission (31.03.2017)

The Accreditation Committee discussed the procedure and made some editorial changes to clarify the requirements and recommendations. The Committee followed the assessments of the peers and the Technical Committees involved without any additional changes.

Assessment and analysis for the award of the EUR-ACE® Label:

The Accreditation Commission for Degree Programmes judges that the intended learning outcomes of the degree programme do comply with the engineering specific part of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy, Architecture.

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

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Civil Engineering	With requirements for one year	EUR-ACE®	30.09.2022

Requirements

A 1. (ASIIN 2.2) Ensure that the credit point system includes all compulsory elements of the degree programme.

A 2. (ASIIN 5.2) Ensure that a Diploma Supplement is given to the graduates which contains detailed information about the educational objectives, intended learning out-comes, the structure and the academic level of the degree programme as well as about the individual performance of the student and statistical data according to the ECTS-Users‘ guide in addition to the final grade.

A 3. (ASIIN 6) Ensure that students getting a feedback about the results of the teaching evaluations.

Recommendations

For the national Bachelor

E 1. (ASIIN 1.3) It is recommended to include some specific contents of civil engineering in the first year already.

E 2. (ASIIN 2.1) It is recommended to reduce the prerequisites for single modules to the absolute essentials in order to make the programme more flexible.

E 3. (ASIIN 2.2) It is recommended to make the transfer of national credits to ECTS points more transparent to foreign stakeholders.

E 4. (ASIIN 2.3, 3) It is recommended to give students more time for independent self studies.

E 5. (ASIIN 4.1) It is recommended to increase cooperation with the industry regarding research projects.

I Fulfilment of Requirements (23.03.2018)

Requirements

A 1. (ASIIN 2.2) Ensure that the credit point system includes all compulsory elements of the degree programme.

Initial Treatment	
Peers	fulfilled unanimous Justification: Now the university calculates the student workload for all compulsory elements of the programme.

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

A 2. (ASIIN 5.2) Ensure that a Diploma Supplement is given to the graduates which contains 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 and statistical data according to the ECTS-Users‘ guide in addition to the final grade.

Initial Treatment	
Peers	fulfilled unanimous Justification: The given example of a Diploma Supplement contains detailed information about the educational objectives, intended learning out-comes, the structure and the academic level of the degree programme as well as about the individual performance of the student and statistical data according to the ECTS-Users‘ guide in addition to the final grade.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee followed the assessment of the peers without any changes.

A 3. (ASIIN 6) Ensure that students getting a feedback about the results of the teaching evaluations.

Initial Treatment	
Peers	fulfilled unanimous Justification: The university defines regulations that students getting a feedback about the results of the teaching evaluations.
TC 03	fulfilled Vote: unanimous Justification: The Technical Committee followed the assessment of the peers without any changes.

Decision of the AC Programmes on 23.03.2018:

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Civil Engineering	All requirements fulfilled	EUR-ACE®	30.09.2022

Appendix: Programme Learning Outcomes and Curricula

According to the self report the following **objectives** and **learning outcomes** shall be achieved additional to those defined in the yearbook by the Bachelor degree programme:

Upon completing the Bachelor of Engineering in Civil Engineering, graduates will be able to:

- Demonstrate competence to identify, assess, formulate and solve convergent and divergent engineering problems creatively and innovatively.
- Demonstrate competence to apply knowledge of mathematics, basic science and engineering sciences from first principles to solve engineering problems.
- Demonstrate competence to perform creative, procedural and nonprocedural design and synthesis of components, systems, engineering works, products or processes.
- Demonstrate competence to design and conduct investigations and experiments.
- Demonstrate competence to use appropriate engineering methods, skills and tools, including those based on information technology.
- Demonstrate competence to communicate effectively, both orally and in writing, with engineering audiences and the community at large.
- Demonstrate critical awareness of the impact of engineering activity on the social, industrial and physical environment.
- Demonstrate competence to work effectively as an individual, in teams and in multidisciplinary environments.
- Demonstrate competence to engage in independent learning through well-developed learning skills.
- Demonstrate critical awareness of the need to act professionally and ethically and to exercise judgment and take responsibility within own limits of competence.

The following **curriculum** is presented:

Semester 1		Semester 2		Semester 3		Semester 4	
Course Title	*C or E*	*Course Title*	*C or E*	*Course Title*	*C or E*	*Course Title*	*C or E*
Engineering Mathematics 115	C	Engineering Mathematics 125	C	Engineering Mathematics 215	C	Structural Analysis 224	C
Engineering Mechanics 114	C	Engineering Chemistry 123	C	Fluid Mechanics 214	C	Geomechanics 224	C
Engineering Physics 114	C	Material Science 124	C	Theory of Structures 214	C	Statistics 224	C
Engineering Drawing 114	C	Mechanics of Materials 124	C	Engineering Geology 214	C	Project & Facility Management 224	C
Computing for Engineers 114	C	Electrical Circuits 124	C	Introduction to Business Management 214	C	Water Engineering 224	C
English for Academic Purposes	C	Computer Aided Drawing 124	C	Engineering Surveying 214	C	Traffic Engineering 223	C
		Workshop Practice 120	C			Information Competence	C

Semester 5		Semester 6		Semester 7	
Course Title	*C or E*	*Course Title*	*C or E*	*Course Title*	*C or E*
Water and Waste water Treatment 313	C	Innovation, Creativity and Entrepreneurship	C	Solid Waste Management 414	C
Geometric Design of Roads 313	C	Water and Waste Water Reticulation Design and Management 324	C	Engineering Research Methodology 414	C
Structural Analysis 314	C	Pavement Technology 325	C	Environmental Engineering 414	C
Geotechnical Engineering 314	C	Geotechnical Engineering 324	C	Civil Engineering Design Project 410	C
Reinforced Concrete and Masonry Design 315	C	Structural Design of Steel and Timber 324	C	Continuum Mechanics and Finite Element Methods 414	E
Contemporary Issues	C	Construction Cost Calculation 324		Geometric Design of Routes 414	E
				Hydraulic Structures 414	E
				Infrastructure & Facility Management	E

				414	

Semester 8	
Course Title	*C or E*
Civil Engineering Project 420	C
Building Contract & Tendering 424	C
Engineer - in - Society: Ethics, Professionalism 424	C
Water Resources Development and Management 425	*E*
Advanced Reinforced Concrete & Steel Design 425	*E*
Transport Systems and Structures 425	*E*
Irrigation and Drainage Engineering 425	*E*