



ASIIN Accreditation Report

Bachelor's Degree Programme

Production of Building Materials, Products, and Structures

Master's Degree Programme

Production of Building Materials, Products, and Structures (one year)

Production of Building Materials, Products, and Structures (two years)

Provided by

Karaganda State Technical University

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A About the Accreditation Process

Title of the degree Programme	Labels applied for ¹	Previous accreditation	Involved Technical Committees (TC) ²
Ba Production of Building Materials, Products, and Structures	ASIIN, EUR-ACE® Label	none	03
Ma Production of Building Materials, Products, and Structures (one year)	ASIIN, EUR-ACE® Label	none	03
Ma Production of Building Materials, Products, and Structures (two year)	ASIIN, EUR-ACE® Label	none	03
<p>Date of the contract: 05.11.2012</p> <p>Submission of the final version of the self-assessment report: 02.05.2013</p> <p>Date of the onsite visit: 27./28.08.2014</p> <p>at: Karaganda</p>			
<p>Peer panel:</p> <p>Alina Kim, student of the East-Kazakhstan State Technical University;</p> <p>Prof. Dr. Udo Nackenhorst, University of Hannover;</p> <p>Prof. Dr. Ulrich Neuhof, University of Applied Sciences Erfurt;</p> <p>Prof. Dr. Günter Schmidt-Gönner, University of Applied Sciences of the Saarland;</p> <p>Dipl.-Ing. Christoph Schröder, Government Agency for Roads and Traffic, Free and Han-</p>			

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.

seatic City of Hamburg
Representative of the ASIIN headquarter: Dr. Georg Ebertshäuser
Responsible decision-making committee: Akkreditierungskommission für Studiengänge
Criteria used: European Standards and Guidelines as of 10.05.2005 ASIIN General Criteria, as of 28.06.2012 Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Surveying and Architecture as of 28.09.2012

In order to facilitate the legibility of this document, only masculine noun forms will be used hereinafter. Any gender-specific terms used in this document apply to both women and men.

B Characteristics of the Degree Programmes

a) Name & Final Degree	b) Areas of Specialization	c) Mode of Study	d) Duration & Credit Points	e) First time of offer & Intake rhythm	f) Number of students per intake	g) Fees
Ba Production of Building Materials, Products, and Structures	n.a.	Full time	8 Semester 269 CP	WS 1972 WS	40-60 / year	2300\$ for the programme
Ma Production of Building Materials, Products, and Structures (one year)	n.a.	Full time	2 Semester 75 CP	WS 1994 WS	8-12 / year	2800\$ for the programme
Ma Production of Building Materials, Products, and Structures (two years)	n.a.	Full time	4 Semesters 153 CP	WS 1994 WS	8-12 / year	2800\$ for the programme

For the degree programme BA Production of Building Materials, Products, and Structures, the self-assessment report states the following **intended learning outcomes**:

“Bachelor of Educational programs on specialty "5B073000 - Production of building materials, products and structures" must:

- *know* the types of building materials and products in accordance with the nomenclature, basic mechanical, chemical, technological and operational properties of building materials, products and structures, EUROCOD requirements and existing regulations to them, principles of design of new and optimization of production will be adopted in the construction materials, advanced technology of concrete and reinforced concrete, ceramic, decoration, insulation materials and products;
- *be able to* develop technology processes; carry out technological production calculations, choose the design of materials and structures technically sound, economically viable and provide mobility of production in a market of technological solutions, to control the quality of raw materials and products at all stages of construction materials and structures, be and use the regulatory and legal documents relating to the profession;

- *be competent* in the formation and validity of the arguments and solutions to problems in the production of building materials, products and structures, in the collection and interpretation of data in the technology of production of building materials, products and designs for making judgments that take into account the most important scientific questions of their application, in analysis of information, promotion of ideas, solving profes-

sional problems, and in all areas of instruction necessary for its continuation with a high degree of autonomy.

Practice Area of Bachelor is manufacture of building materials, products and structures, designing of the construction materials, products and designs, construction, average in professional education, certification and accreditation of building products.

The objects of professional bachelor's activity are a production of building materials, products and structures, construction sites and organizations, scientific research and design institutes, accreditation bodies and certification of construction products, educational institutions of vocational education.

The subjects of the professional bachelor's activity are technology building of materials and construction, designing of building materials, maintenance and quality control of construction materials.

Graduates of "5B073000 - Production of building materials, products and structures" can perform the following professional activities:

- Industrial and technological;
- Organizational and management;
- Experimental Research;
- Design;
- Educational.

Functions of professional activity of graduates:

- Design, organization of enterprises producing construction materials and structures (and / or their departments);
- The organization, the implementation of measures to ensure the stability and efficiency of the current processes of the enterprise;
- Management of enterprises or their subdivisions;
- Teaching majors in vocational education corresponding profile.”

The following **curriculum** is presented:

For the degree programme MA Production of Building Materials, Products, and Structures (one year), the self-assessment report states the following **intended learning outcomes**:

“Master of Education Program on the specialty "6M073000 - Production of building materials, products and structures" in the profile preparation should:

to know: international and domestic standards, regulations and guidance, standards in quality management of ISO-9000, 14000, and others;

- prospects for technological development and characteristics of the institution, organization, enterprise;

- methods of expertise in the production of building materials, products and structures;

to be able to: formulate and solve problems in the course of professional activities;

- to represent the results of the work done in the form of reports, papers;

- to choose appropriate research methods, modify existing, and develop new methods;

-to process the results, analyze and draw conclusions;

be competent: in organizing, planning and carrying out all types of professional activity;

- in all aspects of professional activity on the production of building materials, products and designs.

Graduates with a degree "6M073000 - Production of building materials, products and structures" can perform the following professional activities:

for profile preparation

- design activities: preparation task for development of design solutions; settlements on projects;

development of teaching and standards, technical documentation;

- design and technological activities: development of measures for the integrated use of raw materials, the design of manufacturing processes of building products and structures, quality control process;

- organizational and management activities: the organization of the team and the adoption of the performing solutions, the definition of the order of work, expert and advisory activities”.

The following **curriculum** is presented:

B Characteristics of the Degree Programmes

																	Apprenticeship 1 year				
№ n/n	code of module	Cycle of disciplines	TITLE OF MODULE AND TITLES OF COURSES, MAKING UP THE MODULE	Distribution by semester						Hours							Offer: Full time				
				Exams	course projects	course works	tests, essays, reports	number of credits ECTS	number of credits	total number of hours	classroom hours	lectures	of them			IMWV	IMVT	Allocation of credits per term			
													pract/seminaries lessons	laboratory works				1term	2term	3term	4term
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
BC - BASIC courses - 9 (540)																					
OK 2.1			Core subjects - 5 (300)																		
1	Iya 1	IYa 5201	Module Foreign Language (professional-oriented)	1				6	2	120	30		30		60	30	2				
2	Men 2	Men 5202	Module Management	1				3	1	60	15	15			30	15	1				
3	Psi 3	Psi 5203	Module Psychology	1				6	2	120	30	15	15		60	30	2				
KB 2.2			Elective component - 4 (240)																		
4	DKYa 4	DKYa 5201	Module Business Kazakh Language	2				6	2	120	30		30		60	30		2			
5	MB 5	MB 5202	Module Modified Concrete	1				6	2	120	30		30		60	30	2				
Total in basic majors:								27	9	540	135	30	105		270	135					
PD - Profile disciplines - 9 (540)																					
OK 3.1			Mandatory component - 2 (120)																		
1	PTSMI 6	PTSMI 5301	Module Progressive technologies of building materials	1				3	1	60	15	15			30	15	1				
2	ONI 7	ONI 5302	Module Basis of research	2				3	1	60	15	15			30	15		1			
KB 3.2			Elective component - 7 (420)																		
3	AiOM 8	AiOM 5301	Module Corrosion resistant and fireproof building materials	2				6	2	120	30	30			60	30		2			
4	PPTM 9	PPTM 5303	Module Production of polymer materials for heat and sound insulation	2				6	2	120	30	30			60	30		2			
5	RTPSM 10	RTPSM 5304	Module Energy efficient technologies for production of building materials	2				6	3	180	45	45			90	45		3			
PD TOTAL:								24	9	540	135	135			270	135					
Total in theory learning								51	18	1080	270	165	105		540	270	8	10			
										Number of course projects											
										Number of course works											
										Number of tests, essays, reports											
										Number of exams			5		5						
P - Practice - 3 (225)																					
1	PP 15	PP 5401	Module Practice (production)				2	6	3	225	75				120			3			
Total in practice:								6	3	225	75				120						
Experimental and research work ERW of the Master's student - 3 (360)																					
1	EIRM 17	NIRM 5501	Module Experimental and research work of the Master's student including fulfillment of Master's thesis				2	6	3	360	45				315			3			
Total in research work of the Master's student:								6	3	360	45				315						
FC - Final certification - 4 (420)																					
1	OSMD 20	OSMD 5601	Module Organizational structure and defence of the Master's thesis	4				9	3	315	45				270			3			
2	KE 21	KE 5602	Module Complex exam	4				3	1	105	15				45	45		1			
Total in FC:								12	4	420	60				315	45					
Total in credits:								75	28	2085	450				1290	315	8	20			

For the degree programme MA Production of Building Materials, Products, and Structures (two years), the self-assessment report states the following **intended learning outcomes**:

“Graduates of "5M073000 - Production of building materials, products and structures" can perform the following professional activities:

- Industrial and technological;
- Organizational and management;
- Experimental Research;
- Design;
- Educational.

Functions of professional activity of graduates:

- Design, organization of enterprises producing construction materials and structures (and / or their departments);
 - The organization, the implementation of measures to ensure the stability and efficiency of the current processes of the enterprise;
 - Management of enterprises or their subdivisions;
 - Teaching majors in vocational education corresponding profile.
- Bachelor of Education Program on the specialty "6M073000 - Production of building materials, products and structures" in the profile preparation should:

to know: international and domestic standards, regulations and guidance, standards in quality management of ISO-9000, 14000, and others;

- prospects for technological development and characteristics of the institution, organization, enterprise;
- methods of expertise in the production of building materials, products and structures;

to be able to: formulate and solve problems in the course of professional activities;

- to represent the results of the work done in the form of reports, papers;
- to choose appropriate research methods, modify existing, and develop new methods;
- to process the results, analyze and draw conclusions;

be competent: in organizing, planning and carrying out all types of professional activity;

- in all aspects of professional activity on the production of building materials, products and designs.

with the scientific and pedagogical training should:

to know: international and national standards;

- the basic requirements for the technical documentation, materials, products;
- methods for scientific research and calculations, determine the technical, economic, and environmental and economic performance of the research and development activities;

to be able to: select appropriate research methods, modify existing and develop new methods, based on the specific study objectives;

- to process the results, analyze them according to the published data;
- to represent the results of the work done in the form of reports, abstracts, and articles;
- to formulate and develop objectives to achieve the goal;

to be competent: in organizing, planning and carrying out all types of professional activity;

- in all aspects of professional activity on the production of building materials, products and designs.

The objects of professional activity of graduates are in graduate profile preparation: companies, firms and enterprises for the production, distribution and use of building materials, design organizations, with research and teacher training: research and academic institutions training.

Graduates with a degree "6M073000 - Production of building materials, products and structures" can perform the following professional activities:
with the scientific and pedagogical training:

- research activities: the development of plans and programs for research and technological development;

- preparation of individual jobs for artists, collection, processing, analysis and systematization of scientific and technical information on the study;

- the choice of methods and means of solving the problem, the development of methods and organization of the experiments, analysis of results, conducting patent searches, preparation of scientific and technical reports, surveys, publications on the results of the research;

- educational activities: implementation of educational activities in vocational, higher education, development, publishing, teaching and implementation of teaching materials for specialty profile, educational work among students”.

The following **curriculum** is presented:

																	Apprenticeship 2 year				
																	Offer: Full time				
№ n/n	Code of the module	Cycle of disciplines	TITLE OF MODULE AND TITLES OF COURSES, MAKING UP THE MODULE	Distribution by semester						Hours								Allocation of credits per term			
				Exams	course projects	course works	тестовых заданий, рп, рр, педагогов, отчетов	ECTS number of credits	number of credits	total number of hours	of them										
											classroom hours	lectures	pract/seminars lessons	laboratory works	IMWV	IMVT	1term	2term	3term	4term	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
BC - BASIC courses - 16 (1200)																					
OK 2.1			Core subjects - 8 (600)																		
1	IFN 1	IFN 5201	Module History and philosophy of science	2				6	2	150	30	30			60	60			2		
2	IYa 2	IYa 5202	Module Foreign Language (professional-oriented)	1				6	2	150	30		30		60	60	2				
3	Ped 4	Ped 5203	Module Pedagogy	1				6	2	150	30	30			60	60	2				
4	Psi 3	Psi 5204	Module Psychology	1				6	2	150	30	15	15		60	60	2				
KB 2.2			Elective component - 8 (600)																		
5	DKYa 5	DKYa 5201	Module Business Kazakh Language	2				6	2	150	30		30		60	60			2		
6	MB 6	MB 5202	Module Modified Concrete	2				12	4	300	60	30	30		120	120			4		
7	MPTD 7	MPTD 6203	Module Methods of teaching technical sciences	3				6	2	150	30	15	15		60	60			2		
Total in basic majors:								48	16	1200	240	120	120		480	480					
PD - Profile disciplines - 18 (1350)																					
OK 3.1			Mandatory component - 6 (450)																		
1	PTSMI 8	PTSMI 5301	Module Progressive technologies of building materials and products	1				6	2	150	30	30			60	60	2				
2	ONI 9	ONI 5302	Module Basis of research	2				6	2	150	30	30			60	60			2		
3	KFHIM 10	KFHIM 5303	Module Physical-chemical methods of materials research	1				6	2	150	30	30			60	60	2				
KB 3.2			Elective component - 12 (900)																		
4	AiOM 11	AiOM 6301	Module Corrosion resistant and fireproof building materials	3				9	3	225	45	30	15		90	90			3		
5	NVC 12	NVC 6302	Module New types of cement	3				9	3	225	45	45			90	90			3		
6	PPTM 13	PPTM 6303	Module Production on polymer materials for heat and sound insulation	4				9	3	225	45	45			90	90			3		
7	RTPSM 14	RTPSM 6304	Module Energy efficient technologies for production of building materials	4				9	3	225	45	45			90	90			3		
PD TOTAL								54	18	1350	270	255	15		540	540					
Total theoretical learning								102	34	2550	510	375	135		1020	1020	10	10	8	6	
											Number of course projects										
											Number of course works										
											Number of tests, essays, reports										
											Number of exams				4 4 4 2						
P - Practice - 7 (525)																					
1	PP 15	PP 6401	Module Pedagogical Practice				3	9	4	120	45				75				4		
2	PI 16	PI 6402	Module Research Practice				2	9	3	360	45				315				3		
Total in P:								18	7	480	90				390						
RWMS- Research Work of the Master's Student -8 (960)																					
1	RWMS 17	RWMS 6501	Module Research work of the Master's student, including fulfillment of the Master's Thesis				2,4	21	8	960					960				4	4	
Total in RWMS:								21	8	960					960						
FC - Final Certification - 4 (420)																					
1	OSDMT 20	OSDMT 6601	Module Organizational Structure and defence of Master's thesis	4				9	3	315	45				270					3	
2	CE 21	KE 6602	Module Complex examination	4				3	1	105	15				45	45				1	
Total in FC:								12	4	420	60				315	45					
Total credits:								153	53	4410	660				2685	1065	10	17	12	14	

C Peer Report for the ASIIN Seal³

1. Formal Specifications

Criterion 1 Formal Specifications
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Evidence:

- Self Assessment Report

Preliminary assessment and analysis of the peers:

Regarding the declaration of full-time studies the peers asked whether a part-time study model was also possible. They were told by the programme coordinators that the degree programmes are designed as full-time studies only. A part time study is not intended.

The peers noticed the studies fees for the degree programmes. They asked the HEI representatives about the possibilities for grants for students. The peers learned that the Kazakh government provides a certain number of grants for students of technical studies per year to foster interest in technical subjects. The award of grants is based on a nationwide examination. Although it is possible to study the programmes on a self-paying basis, most of the students even at Bachelor's level have grants. Master degree students nearly all have a grant.

The peers perceived that there are two different varieties of the Master's degree programme, one with two years of length, one with only one year of length. The peers asked for information about the differences between the two varieties and if it were possible for students in the shorter Master's degree programme to proceed with a PhD programme. The HEI representatives explained that the 2 years Master educates scientific personnel, whereas the one year Master is for the education of professional staff for the industry. Only the two years Master's programme leads the student/graduate to an academic career teaching and researching at a university.

The peers deemed the criteria regarding the formal specifications to be fulfilled.

³ 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.

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

The peers confirmed their initial judgment concerning the criterion.

2. Degree programme: Concept & Implementation

Criterion 2.1 Objectives of the degree programme

Evidence:

- Self Assessment Report
- Objectives Matrices
- Diploma Supplement

Preliminary assessment and analysis of the peers:

The peers got a positive impression of the Bachelor's degree and the two years Master's degree programmes' objectives. The peers felt that that HEI has duly classified the final degrees of the Bachelor's and two years Master's degree programmes in academic and professional terms. With regard to the one year Master's degree programme the peers felt that although the HEI has defined the programmes' objectives in academic and professional terms, the programme lacks the length and academic depth to really attain the goal of a Master's education, especially on academic and scientific terms (see C.2.2 below).

Criterion 2.2 Learning Outcomes of the Programme

Evidence:

- Self Assessment Report
- Objectives Matrices
- Diploma Supplement
- Discussions with representatives and students of the university

Preliminary assessment and analysis of the peers:

The peers found the learning outcomes of the Bachelor's and two years Master's degree programmes reflecting the level of qualification sought. They were comparable to the exemplary learning outcomes set out in the appropriate ASIIN Subject Specific Criteria. The peers judged the learning outcomes to be achievable and valid. The students con-

firmly that the learning outcomes were known to them and easily accessible on the internet and in the library. The students expressed also their strong commitment to the HEI and the degree programmes. They told the peers that most of them choose the degree programmes because of a recommendation of alumni or relatives and the high reputation of the HEI.

However, the peers gained the impression that the degree programmes are strongly designed according to the needs of the local industry, and therefore are lacking in the depth of the engineering education. Especially basics of natural science and engineering fundamentals are relatively weak in the curricula of the degree programmes. The peers were for these reasons not convinced that the degree programmes can meet all requirements of engineering analysis and engineering design of the Subject Specific Criteria of the Technical Committee and herewith the respective requirements for the award of the EUR-ACE label. The peers recommended that the EUR-ACE label cannot be awarded.

Concerning the one year Master's degree programme the peers expressed strong doubts that a programme of only one year duration and with a total of 75 credits can achieve the scientific and academic level required for a Master's degree programme. The programme coordinators explained to the peers that this programme was designed to meet the needs of the industry for a workforce with better qualification than a Bachelor's but equally high practical skills. It was not intended to prepare the graduates for a academic career and the preparation of a PhD thesis. This is solely the aim of the longer two years Master's programme. Among the students interviewed by the peers was only one who was enrolled in the one year Master's programme. His objective was to secure a better position in a company; academic pursuits were not his aim.

The peers judged the learning outcomes of the one year Master's degree programme to be too meager and weak on engineering aspects on an academic level. In the opinion of the peers the degree programme is not able to attain the level of a Master's degree in scientific and academic terms. To achieve this, the programme has to be longer and better structured in the curriculum. As it is now, a large percentage of the combined curricula of the Bachelor's and Master's degree programmes consist of general courses about culture, language and other non subject specific contents. Without these general contents the one year Master's degree programme does not reach a total of 300 ECTS credits, but only around 250 at the most. Even if taking difficulties into account arising from the transfer of Kazakh credits to ECTS credits, the total is still much too low. For the two year Master's programme on the other hand the requirement of 300 ECTS is still fulfilled after deducting the general courses. The peers came to the conclusion that the one year Master's degree programme does not fulfill the basic requirements according to level 7 of the European Qualifications Framework for Lifelong Learning. The ASIIN seal can there-

fore not be awarded. The peers suggested to the programme representatives to drop the programme entirely from the portfolio of the HEI or to not include it in further accreditation procedures.

Criterion 2.3 Learning outcomes of the modules/module objectives

Evidence:

- module descriptions/module handbook
- Self Assessment Report

Preliminary assessment and analysis of the peers:

The peers deemed the Bachelor's and Master's degree programmes generally of a good quality which is also expressed in the module descriptions. The modules descriptions are available on the internet and in the library of the HEI. They are in the view of the peers completely able to make it clear what knowledge, abilities, and competences students are expected to acquire in the individual modules. In the opinion of the peers were the intended learning outcomes and the prerequisites for achieving them clearly understandable to the students. The students confirmed this view to the peers.

Criterion 2.4 Job market perspectives and practical relevance

Evidence:

- Self Assessment Report
- Overview of companies for practical training
- Description of expected learning outcomes
- Discussions with students and teaching staff

Preliminary assessment and analysis of the peers:

The peers gained the impression that job market perspectives for graduates who acquired the intended learning outcomes are good. The competences as presented allow graduates to work in a field appropriate to the qualification. The students confirmed towards the peers that they all expect to find an employment after graduation. The peers were informed by the programme coordinators that from 2009 onward, 4 out of 13 graduates of the two year Master's degree programme stayed at the HEI for an academic career. The actual number depends on the ministry's regulations; usually it is one position per year. The peers found that the employability of graduates from the two years Master's programme would profit from a broadened curricula. Therefore, they recommended to the HEI to take appropriate steps into consideration (see also C.2.6).

Criterion 2.5 Admissions and entry requirements

Evidence:

- Quality Management System, Standard of Organization (QMS SO 4.4.01 – 2012)
- Self Assessment report
- Discussion with programmes' representatives

Preliminary assessment and analysis of the peers:

The peers judged the admission and entry requirements complying with the ASIIN general criteria. They are governed by strictly applied and transparent procedures and criteria; they facilitate the achievement of the learning outcomes; they ensure that all applicants are treated equally; they contain regulations covering the recognition of activities completed externally, and they enable flexibility to some extent in the admission of those who fall short of some admission or entry requirements.

The peers asked the HEI representatives to explain the admission process for the Bachelor's degree programme. They were informed that admission is based on a nation-wide entry examination. The examination contents follow the subject that the applicant has chosen, e.g. a focus on technical subjects in the examination for applicants of technical degree programmes. The HEI grants admissions according the examination results of the applicants. Usually the admission is linked to a government grant. But a smaller part of the students are enrolled on a commercial basis, provided their examination achieves a positive result. Enrollment figures signify the current actual status of students' applications. There is no limit of a maximum enrollment figure. All applicants who have passed the entry examination can commence their studies in the chosen subject.

The peers were informed by the HEI representatives that admission for the Master's degree programme is based on a Master's entrance examination, which contains a subject-specific part and an English language part. The applicants achieving the best examination results get the government grants, others who still have passed the examination can gain admission.

Criterion 2.6 Curriculum/Content

Evidence:

- Curriculum / content overview
- Discussion with the HEI representatives

Preliminary assessment and analysis of the peers:

The peers came to the conclusion that the curriculum in place makes it possible to achieve the intended learning outcomes and that objectives and contents of the individual modules are coordinated in order to avoid overlaps.

However, the peers gained the impression that the curriculum of the Bachelor's degree programme – although strong on subject specific contents – should be improved by strengthening the basics of natural sciences and engineering fundamentals. This would allow the students to build up a better foundation of general engineering skills and prevent the graduates to be overly focused on subject specific aspects needed primarily of the regional industry. The peers therefore recommended to the HEI to adapt the curriculum of the Bachelor's degree programme accordingly.

For the Master's degree programme the peers found a similar situation. The Master's degree programme could profit in the view of the peers by thematic broadening of the curriculum in order to improve the employability of the graduates. The peers recommended to the HEI to take appropriate steps into consideration.

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

The peers took notice of the HEI's decision to withdraw the accreditation application of the one year Master's programme. The one year Master's degree programme Production of Building Materials, Products, and Structures will not be included in the further accreditation procedure.

The peers noticed the statement of the HEI that graduates of the Bachelor's degree programme have no difficulty to find job opportunities. However, they still felt the need for the Bachelor's degree programme for a broader curriculum concept. This would enhance the graduates' employability for the international labor market, and make job chances at the national level even better. The peers therefore upheld the respective recommendation.

The peers welcomed that the HEI expressed their consent with the recommendation to strengthen the basics of natural sciences and engineering fundamentals in the curricula, and that the HEI has already started to implement improvements in this direction.

Otherwise, the peers saw no need to alter their original judgment regarding the criterion.

3. Degree Programme: Structures, Methods & Implementation

Criterion 3.1 Structure and modularity

Evidence:

- Self Assessment report
- Curricular overviews
- Quality Management System, Educational and organizational process management (QMS SO 4.5.03 – 2012)

Preliminary assessment and analysis of the peers:

The peers found that the programmes are modular, and that each module is a coherent and consistent learning package.

The peers judged that the size and duration of the modules allow students to combine them flexibly and to facilitate the transfer of credits. Studies abroad are possible within the degree programmes and credits earned at a foreign HEI can be transferred according to the regulations.

The peers saw that the Master's degree programme does not incorporate any modules at undergraduate level. They perceived that individual students may not be awarded credits for the same module at Bachelor's and again at Master's level.

The peers wondered about the high proportion of general courses about Russian and Kazakh language, history, culture, and others. The programme coordinators informed the peers that these courses are mandatory by regulation of the ministry for education. The students expressed their view towards the peers that these courses are a useful component of the degree programmes since not all people in the country have an equally good mastery of the Russian and Kazakh languages and graduates have therefore to be versed in both languages. The peers understood the reasons for the cultural courses. Since the remaining credits for subject specific topics in both the Bachelor's degree programme and the two years Master's degree programme are still sufficient to guarantee the achievement of the intended learning outcomes the peers expressed no objections against the current model. However, the peers felt that the concentration of the general culture modules in a studium generale of the degree programmes could make it easier for students to focus on their chosen subject afterwards. Therefore, the peers recommended to the HEI to bundle the general courses on culture and language to a studium generale and place it at the beginning of the curricula.

For the one year Master's degree programme the peers found the number of general culture courses in comparison to the subject specific content of the curriculum too great. The peers were of the opinion that the remaining number of credits is by far not sufficient to achieve the intended learning outcomes at a Master's degree level (see also C.2.2). Therefore, they recommended that the ASIIN seal cannot be awarded to the one year Master's degree programme.

Criterion 3.2 Workload and credit points

Evidence:

- Self Assessment report
- Curricular overviews
- Quality Management System, Educational and organizational process management (QMS SO 4.5.03 – 2012)
- Discussion with students and teaching staff

Preliminary assessment and analysis of the peers:

The peers wondered about the very high student workload, which seems to amount to about 60 working hours a week. The representatives of the HEI declared that according to Kazakh law 57 working hours per week for students are standard. They further explained to the peers the calculation of ECTS credits in the Bachelor's and Master's degree programmes. The peers could understand the reasoning of the HEI in calculating the overall students' workload with 269 CP for the Bachelor's degree programme and 153 CP for the Master's degree programme. The peers took also notice of the state regulations concerning students working hours per week. The students expressed their satisfaction with the current workload arrangements toward the peers. They confirmed the number of working hours per week, but did not feel too pressed and said they could manage all their tasks to prepare for classes and exams. However, according to common European standards underlying the General Criteria of ASIIN applied to this accreditation, the peers thought the workload of the students to be too high. The peers expressed their concern that such a high workload may impair the achievement of the intended learning outcomes in the long run by constantly overstraining students' physical and mental resources. Therefore, the peers pointed out to the HEI that the students' workload per semester must be set at a level that avoids structural pressure on training quality. In line with the ECTS Users' Guide, the workload per semester must not exceed that of a full-time employee (maximum of 900h). The ECTS credits awarded must be adapted accordingly.

In connection with the calculation of the workload, the peers perceived a grossly unbalanced distribution of credits per semester in the two year Master's degree programme. The span ranges from 30 credit points in the first term to 60 credit points in the second term. The peers deemed it necessary to find a more balanced distribution of credits along the course of studies. They pointed out to the HEI that the workload and distribution of ECTS per semester have to be corrected. The transformation between Kazakh and European credit point systems appeared not transparent to the peers. In addition, they emphasized that there is a mismatch between the total working hours and the ECTS credits in the study plan overviews which has to be made consistent.

It was not entirely clear to the peers which parts of the curricula are mandatory and which parts are elective. Especially the distribution of credits between mandatory and elective parts of the degree programmes were hard to figure out from the peers' point of view. The peers therefore asked the HEI to provide a curricular overview before the final assessment of the peers where the credits for mandatory and elective courses are clearly defined (extra-curricular activities like military training and physical education have to be excluded).

Criterion 3.3 Educational methods

Evidence:

- Module Descriptions
- Self Assessment Report
- Discussion with the teaching staff

Preliminary assessment and analysis of the peers:

The peers learned that the teaching staff provides a detailed syllabus for each module which gives information on the course of the lecture as well as on literature for further study. The peers perceived that teaching methods and tools support the achievement of the learning outcomes at the intended level. The peers found the number of elective courses to be just sufficient for the degree programmes. The students informed the peers that about 35% of the curricula consisted of elective courses. A higher number of electives would be highly desirable in the view of the peers. The peers pointed out that an engineering education without certain electives is quit hardly imaginable. They strongly recommended to the HEI to increase the number of elective elements in the degree programmes to enable the students to form their own specialties and focal points.

The peers were told by the HEI representatives that a ratio of 2 hours of self studying for every lecture hour is prescribed by government regulations and is fixed for all degree programmes at all HEIs.

The peers noted that the English language skills of the students as well as the teaching staff are not developed enough to share in the latest scientific developments and research trends on an international level. The peers found the usage of English language materials in courses and theses to be wanting. English language textbooks and journal articles are used not very widely. Only a fraction of the students have experience of studying abroad beyond the Russian speaking world. The peers expressed the view that it is very important for the HEI to attain their self proclaimed goal of better international visibility to improve the English language skills of both students and teaching staff. They recommended to the HEI to make more use of the English language in the degree programmes and to increase academic mobility of both staff and students. The programme coordinators agreed with the view of the peers and expressed their willingness to improve on the issue.

Criterion 3.4 Support and advice

Evidence:

- Self Assessment Report
- Discussions with students, teaching staff, and programme representatives

Preliminary assessment and analysis of the peers:

The students informed the peers that there is a system of students' advisors in place. Advisors support the students in managing their study plans and lend assistance in all kinds of studies related questions. The peers noted approvingly the excellent relationship of trust and cooperation between students and teaching staff. The peers found that sufficient resources are available for offering individual support, supervision and advice to students. The advisory methods envisage are suitable in the view of the peers for supporting students to achieve the learning outcomes and complete their degree within the normal period of time.

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

The peers welcomed that the HEI expressed their consent with the recommendation to bundle the general courses on culture and language to a studium generale and place it at the beginning of the curricula, and that the HEI is going to make corresponding suggestions to the relevant state agencies.

The peers noticed the comment of the HEI to the accreditation report that the students' workload lies within the boundaries of the official state regulations. Nevertheless, the peers judged the workload to be too high viewed before the background of common European standards underlying the ASIIN criteria. Therefore, the peers upheld the respective requirement concerning the workload and advise the HEI to implement appropriate steps to bring the workload in line with common European standards.

The peers considered the new curricular overviews for the degree programmes, now excluding the military training and physical education as mandatory subjects. The peers deemed the curricular overview sufficient to judge the distribution of credits as satisfactory.

The peers welcomed the announcement of the HEI to improve the foreign language skills of the teaching staff. Otherwise the peers found it not necessary to adjust their initial judgment concerning the criterion.

4. Examination: System, Concept & Implementation

Criterion 4 Exams: System, concept & implementation

Evidence:

- Self Assessment Report
- Discussion with HEI representatives and students
- Samples of exam papers and theses

Preliminary assessment and analysis of the peers:

The peers asked the HEI representatives to explain the examination organization. They learned that every grade consists of two mid-term exams and the final examination at the end of the module. Each part is weighed equally. The final exams take place in a timeframe of three weeks at the end of the semester. Between each exam there is at least a break of three days. Oral exams are only used for language courses and state examinations, but presentations and other oral elements are taking place during courses. If a student fails to pass a module he can take the exams again at the next possible opportunity. If a student's marks are overall good he may proceed in his course of studies albeit having failed to take an exam, but he has to retake the exams as soon as possible. A detailed examination plan is handed out to the students at the start of each semester. Nearly all of the students finish their programme in the regular time frame.

The students showed themselves satisfied with the number, content, organization, and difficulty of examinations. The peers were informed by the students that drop-out rates are low. Only during the first few semesters students do sometimes fail their exams, in later semesters this is very uncommon. The students confirmed that they get all relevant information concerning exams on time in printed matter. Examination regulations are handed out to freshmen at the beginning of their studies and are publicly available at the library.

The peers inspected a sample of examination papers and Bachelor's as well as Master's theses. They gained the impression that the overall quality of the samples reflects the level of the Bachelor's and Master's degree respectively, although some samples were only just sufficient in the peers' view. However, the number of available samples was extremely limited. Upon request the peers learned from the programme coordinators that exam papers are regularly destroyed after a short time. The peers pointed out to the HEI that examination papers have to be stored for a sufficient length of time to give students the opportunity for an inspection, and to facilitate further accreditation procedures.

The peers come to the conclusion that the ASIIN criteria regarding the examinations system, concept, and organization are all fulfilled.

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

The peers confirmed their initial judgment regarding the criterion.

5. Resources

Criterion 5.1 Staff involved

Evidence:

- Staff handbook
- Self Assessment report

Preliminary assessment and analysis of the peers:

The peers judged the composition and (specialist) training of the teaching body as sufficient to ensure that the intended learning outcomes are achieved by the time the degree is completed. However, the peers noticed that a relatively huge proportion of the reaching staff had been recruited among graduates of the own degree programmes. For a higher scientific profile and the exchange of ideas and concepts between different HEIs

the peers recommended to the HEI to recruit teaching staff from other universities for the degree programmes.

The peers noted that the research performance of most members of the teaching staff is only average. In the opinion of the peers this comes mainly from the limited English language skills of most of the personnel. The peers stated that the scientific performance of the teaching staff has an important impact on the development of the degree programmes too. The peers therefore recommended to the HEI to improve the scientific excellence and reimplement the results of these efforts in the study programs. To be better able to judge the international academic profile of the teaching staff, the peers asked the HEI to provide a list of publications of the teaching staff in international journals before the final assessment of the peers.

The available contact hours (overall and for individual lecturers) are sufficient for teaching and student supervision.

Criterion 5.2 Staff development

Evidence:

- Self Assessment report
- Discussion with the teaching staff

Preliminary assessment and analysis of the peers:

The peers observed that opportunities for further development of subject-relevant knowledge and teaching skills are available for lecturers.

Criterion 5.3 Institutional environment, financial and physical resources

Evidence:

- Organisational scheme
- Laboratory rooms
- Self Assessment Report
- Visit of the faculty and laboratories

Preliminary assessment and analysis of the peers:

The peers could witness that resources employed form a sustainable basis to achieve the intended learning outcomes. The financing of the programme is assured.

The general infrastructure (e.g. library and IT provision) meets the qualitative and quantitative requirements of the degree programme. The peers expressed their opinion that laboratories and equipment are not sufficient according to modern standards. The pro-

programme coordinators told the peers that they were satisfied with the current state of their equipment; they do not feel something missing or the being not adequate. The students consented to the view of the programme coordinators. They informed the peers that they could use modern equipment during their practical modules in the industries. However, the peers recommended that the HEI must prepare modern laboratory equipment by themselves and cannot rely on the services of the industry alone. Especially for the goal of attaining higher scientific standards and a better international ranking placement of the HEI modern laboratory equipment is essential. The peers therefore pointed out towards the HEI that the laboratory equipment has to be improved according to international standards. To this the peers added the recommendation to improve the scientific excellence and reimplement the results of these efforts in the study programs.

The peers noted that co-operations – both national and international – for research as well as the training of the students exist. These collaborations are sufficient for the purpose and subject to definitive arrangements.

The peers found the organisation and decision-making structures suited to delivering the training measures.

The organisation is able to react to problems, solve them and make up for shortfalls (e.g. staffing, financing, numbers of incoming student) without compromising students' opportunity to complete the degree in the normal time period.

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

The peers welcomed the statement of the HEI to invite more foreign scientist for lectures at the HEI.

The peers considered the list of publications of the teaching staff in international journals provided by the HEI as an additional document. The peers observed only minor publication activity with regard to the specific scientific topics of the programs. They recommended that the visible scientific activity of the teaching staff should be improved mentionable.

The peers welcomed the intention of the HEI to buy modern laboratory equipment in the upcoming year to improve the laboratory standards.

Otherwise, the peers confirmed their initial judgment regarding the criterion.

6. Quality Management: Further Development of Degree Programmes

Criterion 6.1 Quality assurance & further development

Evidence:

- Self Assessment Report
- Quality Management System Instructions
- Discussion with the HEI representatives

Preliminary assessment and analysis of the peers:

The peers found that a quality assurance concept is in place, is regularly further developed, and is designed to ensure the continual improvement of the degree programmes.

The Students confirmed to the peers that they participate in quality assurance activities, and that there is a student representative attaining to those matters.

The evaluation of lectures is conducted on a regular basis. Questionnaires are designed by the ministry of education, the center for quality management, and the students' representatives. The results of the evaluation are checked by the vice rector and published on the internet. A disciplinary commission is in place to solve problems and make decision. The students expressed their satisfaction with the quality management system of the HEI in general and the evaluation of lectures in particular. They informed the peers that the results of the evaluation are communicated to them and that they can perceive improvements stemming from the evaluation outcome.

The peers came to the conclusion that generally mechanisms and scopes of responsibility have been determined to ensure the regular further development of degree programmes. In the opinion of the peers no further steps need to be taken.

Criterion 6.2 Instruments, methods and data

Evidence:

- Self Assessment Report
- Quality Management System Instructions
- Discussion with the HEI representatives

Preliminary assessment and analysis of the peers:

The peers approved of the various efforts of the HEI to collect and assess data to ensure that the quality of the degree programmes is maintained and further developed. The peers saw that these measures are documented and are frequently reviewed.

The peers viewed the data gathered and evaluated by the higher education institution as sufficient to review the success and achievement of the degree programmes in any given respect. The peers therefore judged that the basic requirements of the criteria under review were met.

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

The peers confirmed their initial judgment regarding the criterion.

7. Documentation & Transparency

Criterion 7.1 Relevant Regulations

Evidence:

- Quality Management System, Laboratory Classes (QMS MI 110.08-2012)
- Quality management System, Educational and Organizational Process Management (QMS SO 4.5.03 – 2012)
- Organization of Educational Process for Credit Training Technology (QMS 05.02.03 - 2012)
- Quality Management System, Standard of Organization (QMS SO 4.4.01 – 2012)

Preliminary assessment and analysis of the peers:

The peers judged the regulations for the programme to include all relevant stipulations for admissions, the operation of the programme and graduation.

The peers found the regulations to be accessible for consultation.

Criterion 7.2 Diploma Supplement and Certificate

Evidence:

- Samples of Diplomas and Transcripts of Records

Preliminary assessment and analysis of the peers:

The peers viewed the samples of Diplomas and Transcripts of Record to be sufficient. The Diploma Supplement provides standardized description of the kind, level, context, content and status of the studies completed by its holder. Statistical data according to the ECTS User's Guide assisting in interpreting the individual degree are available. The Diploma Supplement indicates the final mark and how it was calculated, so that outsiders can clearly see how each component was incorporated into the final degree.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 7:

The peers confirmed their initial judgment regarding the criterion.

D Additional Documents

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

1. List of Publications of the teaching staff in International Journals
2. Curricular overview where the credits for mandatory and elective courses are clearly defined (extra-curricular activities like military training and physical education have to be excluded)

E Comment of the Higher Education Institution (20.10.2014)

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

Information on the preliminary assessment and analysis

Bachelor's Degree Program 5B073000 - Production of Building Materials, Products and Structures

Master's Degree Program 6M073000 - Production of Building Materials, Products and Structures **Criterion 2.1 Objectives of the degree program**

Criterion 2.2 Learning Outcomes of the Programme

Concerning the one year Master's degree programme, the department came to the conclusion that the programme will not be included in the further accreditation procedures.

Criterion 2.4 Job market and practical relevance

Graduates of the accredited Master's specialty have no problems with an employment. However, it would be useful for graduates to seek jobs or continue their further education abroad (e.g., PhD).

University's further efforts will be made in the direction of cooperation with the leading foreign universities for the further education or employment prospects of the graduates.

Criterion 2.6 Curriculum / Content

The department strongly agrees with the peers recommendations on the curriculum content. In the further development of training curricula for undergraduate and graduate students, the department will increase the number of courses that will enable students to acquire basic engineering competences. The number of these courses will be increased by broadening of the elective courses.

Criterion 3.1 Structure and modularity

The Department agrees with the recommendations of the peers on this criterion, so under the development of curricula model for undergraduate and graduate students programs, the department specialists will recommend to the Republican Training and Methodical Council (RTMC) to bundle the general courses on language and culture and place them at the beginning of the curricula.

Criterion 3.2 Work load and credit points

According to the *State of Educational Standards of the Republic of Kazakhstan Higher Education. Undergraduate The main provisions № 5.04.019 -2011* a weekly load should not exceed 57-60 hours. It should be noted that the number of classroom / contact hours with the instructor is 18-20 hours; the remaining 37-40 hours are allocated for Autonomous Learning or Self Study (AL or SS). Therefore, department believes that the proposed workload for the student is not high (Appendix A).

The Master's degree curriculum (1 year of study) has unbalanced credits distribution per semester (30 hours for autonomous learning - in the first term and 60 hours of autonomous learning (self-study) - in the second). According to the criteria 2.1 and 2.2, the decision was taken not to include this program in the future accreditation procedures (Appendix B).

On the advice of peers, we attach the curriculum, where the courses "Physical Education" and "Military Training" are excluded and can be taken as are optional courses (Appendix A).

Criterion 3.3 Educational methods

The Department developed a plan to improve the foreign language skills of the teaching staff. The plan is attached (Appendix C).

Criterion 5 Resources

In 2014 the department organized the invitation of the foreign scientist from the UK - Kangwa Joseph (PhD) (Leeds University), who conducted lectures on "Building Structures" to the undergraduate students.

The scholar visit of the PhD Doctor Ilya Lieberman (Florida International University, Construction Management Department) from the United States is planned in 2014-2015.

For the more complete and reliable judgments about the scientific work of the teaching staff of the department we attach a list of staff publications in the magazines of the world ranking. The list of publications is attached (Appendix D).

For high-quality labs, as well as for students and faculty research, we filled an application to the University for the purchasing of new equipment to meet the requirements of the state standard of the education. Also in 2015 it is planned to purchase equipment produced by «Testing Bluhm & Feuerherdt GmbH» (Germany) that meets the International Standards requirements.

F Summary: Peer recommendations (31.10.2014)

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

Degree Programme	ASIIN seal	Subject-specific Label	Maximum duration of accreditation
Ba Production of Building Materials, Products, and Structures	With requirements	EUR-ACE® not awarded	30.09.2020
Ma Production of Building Materials, Products, and Structures (two years)	With requirements	EUR-ACE® not awarded	30.09.2020

Note: The one year Master's degree programme Production of Building Materials, Products, and Structures has been withdrawn from the accreditation by the HEI and is therefore not longer included in the tabular overviews.

Requirements

For all degree programmes

- A 1. (ASIIN 5.3) The laboratory equipment has to be improved according to international standards.
- A 2. (ASIIN 3.2) The students' workload per semester must be set at a level that avoids structural pressure on training quality. In line with the ECTS Users' Guide, the workload per semester must not exceed that of a full-time employee (maximum of 900h). The ECTS credits awarded must be adapted accordingly.
- A 3. (ASIIN 4, 7.1) Examination papers have to be stored for a sufficient length of time to give students the opportunity for an inspection, and to facilitate further accreditation procedures.

For the Master's degree programme

- A 4. (ASIIN 3.2) The workload and the distribution of ECTS per semester have to be corrected.

Recommendations

For all degree programmes

- E 1. (ASIIN 3.3) It is recommended to increase the number of elective courses to enable the students to develop an individual focus.
- E 2. (ASIIN 5.1, 5.3) It is recommended to improve the scientific excellence and reimplement the results of these efforts in the study programs.
- E 3. (ASIIN 3.3, 5.1) It is recommended to make more use of the English language in the degree programs and to increase academic mobility of both staff and students.

For the Bachelor's degree programme

- E 4. (ASIIN 3.1) It is recommended to bundle the general courses on culture and language to a studium generale and place it at the beginning of the curricula.
- E 5. (ASIIN 2.6) It is recommended to strengthen the basics of natural sciences and engineering fundamentals in the curricula.

For the Master's degree programme

- E 6. (ASIIN 5.1) It is recommended to recruit teaching staff from other universities for the degree program.
- E 7. (ASIIN 2.6) It is recommended to improve the employability of graduates by broadening the curricula.
- E 8. (ASIIN 5.1) It is recommended to improve the visible scientific activity of the teaching staff by original research articles published in leading international journals.

G Comment of the Technical Committee 03 - Civil Engineering, Surveying and Architecture (by way of circulation)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee follows the vote of the peers and propose to award the ASIIN accreditation seal with requirements.

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

The Technical Committee deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific part of Subject-Specific Criteria of the Technical Committee 03.

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

Degree Programme	ASIIN seal	Subject-specific Label	Maximum duration of accreditation
Ba Production of Building Materials, Products, and Structures	With requirements	EUR-ACE® not awarded	30.09.2020
Ma Production of Building Materials, Products, and Structures (two years)	With requirements	EUR-ACE® not awarded	30.09.2020

H Decision of the Accreditation Commission (05.12.2014)

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

The Accreditation Commission adapts the wording of requirement A 2. by omitting the last two sentences. Otherwise the Accreditation Commission follows the vote of the peers and the Technical Committee.

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

The Accreditation Commission deems that the intended learning outcomes of the degree programmes do not comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03.

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

Degree Programme	ASIIN seal	Subject-specific Label	Maximum duration of accreditation
Ba Production of Building Materials, Products, and Structures	With requirements	EUR-ACE® not awarded	30.09.2020
Ma Production of Building Materials, Products, and Structures (two years)	With requirements	EUR-ACE® not awarded	30.09.2020

Requirements

For all degree programmes

- A 1. (ASIIN 5.3) The laboratory equipment has to be improved according to international standards.
- A 2. (ASIIN 3.2) The students' workload per semester must be set at a level that avoids structural pressure on training quality.

- A 3. (ASIIN 4, 7.1) Examination papers have to be stored for a sufficient length of time to give students the opportunity for an inspection, and to facilitate further accreditation procedures.

For the Master's degree programme

- A 4. (ASIIN 3.2) The workload and the distribution of ECTS per semester have to be corrected.

Recommendations

For all degree programmes

- E 1. (ASIIN 3.3) It is recommended to increase the number of elective courses to enable the students to develop an individual focus.
- E 2. (ASIIN 5.1, 5.3) It is recommended to improve the scientific excellence and reimplement the results of these efforts in the study programs.
- E 3. (ASIIN 3.3, 5.1) It is recommended to make more use of the English language in the degree programs and to increase academic mobility of both staff and students.

For the Bachelor's degree programme

- E 4. (ASIIN 3.1) It is recommended to bundle the general courses on culture and language to a studium generale and place it at the beginning of the curricula.
- E 5. (ASIIN 2.6) It is recommended to strengthen the basics of natural sciences and engineering fundamentals in the curricula.

For the Master's degree programme

- E 6. (ASIIN 5.1) It is recommended to recruit teaching staff from other universities for the degree program.
- E 7. (ASIIN 2.6) It is recommended to improve the employability of graduates by broadening the curricula.
- E 8. (ASIIN 5.1) It is recommended to improve the visible scientific activity of the teaching staff by original research articles published in leading international journals.