ASIIN Seal & Euro Inf Label

Accreditation Report

Bachelor's Degree Programme
Computer Science
Mathematics

Provided by
Caspian State University of Technologies and Engineering

Version: 07.12.2018

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
5B011100-Информатика	5B011100 - Computer science	ASIIN, Euro-Inf® Label	--	TC 04
5B010900-Математика	5B010900- Mathematics	ASIIN	--	TC 12
Date of the contract: 13.06.2012 **Submission of the final version of the self-assessment report:** 12.07.2016 **Date of the onsite visit:** 27./28.10.2016 **at: Aktau**				
Peer panel: Iliyas Appazov, Student peer International Information Technologies University Almaty Prof. Dr. Hans Ulrich Bühler, Fulda University of Applied Science; Alexandra Dreiseidler, former Emil-Fischer Secondary School Euskirchen; Jürgen Schaldach, former T-Systems; Prof. Dr. Christof Schelthoff, Aachen University of Applied Science; Prof. Dr. Andreas Schwill, University of Potsdam; Prof. Dr. Wolfgang Willems, Otto von Guericke University Magdeburg;				
Representative of the ASIIN headquarter: Dr. Michael Meyer				
Responsible decision-making committee: Accreditation Commission for Degree Programmes				

[1] ASIIN Seal for degree programmes; Euro-Inf® Label

[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.

Criteria used: European Standards and Guidelines as of 10.05.2005 ASIIN General Criteria, as of 28.06.2012 Subject-Specific Criteria of Technical Committees TC 04 – Informatics/Computer Science) as of 09.12.2011 and TC 12- Mathematics as of 09.12.2011	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
5B011100-Информатика	Bachelor of Education of specialty: "Computer science"		Level 6	Full time / part time,		8 Semester	264 ECTS/ 176 Kazakhstan credits/ 7800 academic hours	Autumn semester 2009
5B010900-Математика	Bachelor of Education of specialty: "Mathematics"		Level 6	Full time / part time,		8 Semester	239 ECTS/ 168 Kazakhstan credits / 7170 academic hours	Autumn semester 2009

For the Bachelor's degree programme computer science the institution has presented the following profile in the self-assessment report:

The purpose of the educational program 5B011100 - Informatics is to prepare highly qualified school teachers for computer science, capable to carry out professional activities in the following areas:

- Education and formation of comprehensively developed personalities of the pupils
- The formation of systematic knowledge in the field of computer science and information and communication technologies;
- The organization of educational process on computer at modern scientific level;
- Implementation of research.

For the bachelor's degree programme mathematics the institution has presented the following profile in the self-assessment report:

The aim of the programme is the training of school teachers on the basis of an effective preparation of the modern teacher's competitiveness in the labour market, competent,

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

responsible, fluent in their profession and based in adjacent areas, capable of efficient operation of the specialty to the world standard, able to effective work in specialty, professional development, social and professional mobility.

For the both bachelor's degree programmes the institution has presented the following profile in the self-assessment report:

- Providing high-quality training of teachers of mathematics and computer science to meet the needs of the labour market;

- The formation of scientific and special knowledge and skills, professional system of competences in the field of educational, organizational and administrative, advisory and methodological work;

- Mastering of methods of physical, spiritual and intellectual self-development, the formation of the legal, economic and psychological literacy, culture of thinking and behavior;

- Study and implementation of innovative technologies;

- Improving the forms and methods of training young people.

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:

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

Preliminary assessment and analysis of the peers:
The University defined study aims and intended learning outcomes of both programmes at a level of higher education which corresponds to learning outcomes relevant to level 6 of the European Qualifications Framework. Learning outcomes are accessible to students, staff members, and all the other stakeholders on the faculty web site. Those objectives were discussed in academic staff meetings with the faculty team, alumni, professional societies, industry, and government/public agencies. The panel welcomed the transparent way to publish the objectives and the intention of the faculty to get a permanent feedback from representatives of the labour market. As they understood in both programmes graduates should enter secondary schools as teachers.

The objectives of the educational bachelor's degree programme in computer science met the areas of competence as set forth by the Subject-Specific Criteria in Computer Sciences as far as it is suitable for a bachelor of education in Kazakhstan. Out of the objective matrix (see Appendix, below) the peers got the impression that graduates of the programme should have acquired a fundamental understanding of central concepts and methods, that they should understand central notions and concepts of informatics and that they should

[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.

be able to assess the possibilities and constraints of algorithmic operations. Further on the peers assessed that the university seeks for its graduates a basic understanding of the composition and functioning of computers and key informatics systems.

From the point of view of the peers the objectives of the programme are poor regarding application abilities and regarding the understanding of more complex themes or the ability for scientific work. But as they understand these points are not as much necessary for school teachers as they would be for more academic oriented bachelor programmes. On the other hand they were astonished that the competencies mentioned in the objective matrix are almost entirely subject specific and do not reflect on any pedagogical aspects necessary for school teachers.

Regarding the field specific aspects the objectives are sufficient regarding the preparation for teaching at schools but the objectives do not meet the criteria for the EURO-Inf Label. To fulfil those aspects it would be necessary to seek a more deeply understanding of theoretical informatics, more wide application abilities to solve complex problems and the ability to use academic methods.

The objectives of the educational bachelor's degree programme in mathematics also correspond largely with the fields of the ASIIN Subject Specific Criteria for mathematics. Out of the objective matrix (see appendix below) the peers assessed that graduates should have an overview of the contents of fundamental mathematical disciplines and a comprehension of the significance of mathematical modeling and should be able to create mathematical models. The peers assessed that it is not the intention of the university to focus on the ability of the graduates to work in a scientific way, since this point seems not to be essential for school teachers. On the other hand the peers welcomed that the objectives of the programme contain pedagogical aspects as well and the described competences in the objective matrix are more teaching oriented.

Criterion 1.2 Name of the degree programme

Evidence:

- The name of the study programme is published in the specific regulation on the webpage.

Preliminary assessment and analysis of the peers:
The titles of the programmes are published on the subject specific webpage. The information about the programme is published in Kazakh, Russian and English language. The peers confirmed that names reflect the intended aims and learning outcomes.

Criterion 1.3 Curriculum

Evidence:

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

Preliminary assessment and analysis of the peers:
The auditors assessed the curricula of the programmes under review against the programme objectives provided in the self-assessment report as well as against the stipulations of the Subject-Specific Criteria.

The peers determined that both programmes have an extensive number of elective courses comparing to European bachelor programmes due to governmental regulations. They assessed that the mandatory parts of the curricula mainly contain not-field specific aspects like Kazakh history, language skill, philosophy, politics, economy, law etc., while nearly all field specific aspects of computer science or mathematics are elective. As far as the peers appreciated the curricula students do not have to select core aspects of the programmes. The peers understood that the mandatory courses are defined by the government and they welcomed that students also get impressions of other scientific disciplines. On the other hand from their point of view academic programmes have to ensure that all students become familiar at least with the core aspects of the discipline. Therefore it seemed necessary for the peers to define the core aspects in both programmes as mandatory as well. In case the actual mandatory courses could not be reduced the elective opportunities of the students should be decreased.

Regarding the pedagogical education in both programmes the peers welcomed that there are several sections of field practice at schools involved in the curricula. Each year students stay for six weeks in schools. During the first years students only observe teaching and get homework from the school teachers while they have to teach 2 hours a week by themselves in the last semesters. During these internships students learn different pedagogical methods for pupils in different ages.

These practical experiences of the students are complemented by theoretical pedagogical modules. While the university offers numerous modules in the field of pedagogic in the bachelor's degree programme in mathematics there are offered 4 modules about field specific didactic aspects and in the bachelor programme of computer sciences there is even only one module of this field.

For the programme in mathematics the pedagogical and field specific didactical education of the students seemed to be sufficient for the peers. But they observed that obviously students mainly learn how to teach without the theoretical pedagogical background in the specific field of mathematics. Hence the peers recommended to enhance student's ability to teach through adequate didactical means so-called pedagogical content knowledge.

In the bachelor's degree programme of computer science the pedagogical education seemed to be sufficient as well while the field specific didactical educations is too poor from the point of view of the peers. In the pedagogical modules students learn how to interact with pupils but in only one didactical module they could not learn to teach computer sciences at schools. Therefore the peers saw it necessary to offer more opportunities for students to get knowledge about computer science specific didactical aspects.

Criterion 1.4 Admission requirements

Evidence:

- Joint Self-Assessment Report
- Rules of admission to the organization of education, implementing professional training programs in higher education, approved by the Government Resolution, January 19, 2012 No 111 (with amendments of April 19, 2012 No 487)

Preliminary assessment and analysis of the peers:

The procedures for admission to the programme are governed by strictly applied and transparent procedures and quality criteria.

The rules for admission to the Bachelor's degree programmes respectively were considered to be overall adequate by the peer group. The access to the Bachelor's level requires the completion of secondary education as well as passing a nation-wide general test. For both programmes there are no practical experiences required.

The auditors confirmed that the requirements and procedures for admission are transparent and clear. All applicants are treated according to the same standards and regulations. According to the peers, especially the faculty-specific test supported the students in achieving the learning outcomes.

But the peers determined that no regulations are in place covering the recognition of activities completed externally. The peers learned that transfer from or to other higher education institutions nationally or internationally currently is rather seldom. Nevertheless from their point of view there should be rules for the recognition of credits acquired at other higher education institutions in accordance with the Lisbon Recognition Convention.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion only partially fulfilled and suggested requirements for both programmes about the basic knowledge of the students in field specific core disciplines and the recognition rules of credits acquired at other higher education institutions. Additionally, they suggested a requirement for the bachelor computer science and a recommendation for the bachelor mathematics about field specific didactical aspects.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Student's Guide
- Module descriptions
- Discussions with representatives of MUST management, programme coordinators, lecturers, students

Preliminary assessment and analysis of the peers:

The peers assessed that the degree programmes are 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 in the bachelor's degree programme mathematics.

For the bachelor's degree programme computer science the peers determined that data base design covers the theoretical background which is needed for data management. But in the curriculum the module "data base / data base management" is placed in the sixth semester before the module "data base design" in the seventh semester. Further on, the alignment between lecturers obviously could be improved in the light of several modules with similar contents or redundancies. For example security aspects are treated in 15 modules and the term "computer architecture" could be found more than 30 times in the module descriptions. Further on, it was unclear for the peers why courses on probability theory (TVMS2305) or Autocad (PAC4309) are school-relevant.

On the other hand the peers missed several keywords about fields students have to know in the module descriptions like i.e. tree, searching, sorting, Dijkstra, Chomsky, Church, formal language, functional programming, logic or predicative programming, order calculus O(f), halting problem or inheritance.

Also the peers assessed that the defined content of modules not always could be taught and learned during the foreseen student workload (i.e. the modules “Computer Science” in the first and “Discrete Mathematics” in the fifth semester). Hence within the module structure it became visible for the peers that only few computer scientists are involved in the programme. For the peers it would be necessary that the sequence and the workload of the modules are consistent to their content.

In both programmes elective courses are offered which allow students in general to define an individual focus. But due to the teaching capacity only those elective modules were hold by lecturers which were chosen by a majority of students. The peers could see the difficulties regarding to the teaching capacity but from their point of view it would be helpful to allow students to define an individual focus by their own not depending on the choice of the majority of the students.

The module structure with its elective courses allows students to absolve studies abroad without any structural conditioned loss of time. The university offers exchange programmes with Bulgarian universities but students of the educational programmes did not use these opportunities yet.

Criterion 2.2 Work load and credits

Evidence:

- Self Assessment Report
- Module descriptions:
- Provision of the system of ECTS credits transfer
- Discussions with representatives of MUST management, programme coordinators, lecturers, students

Preliminary assessment and analysis of the peers:
The peers understood that CSUTE uses on the one side a Kazakh national credit point system based on contact hours and on the other side ECTS credit point based on the student workload. The university defined a certain conversion factor which sets one Kazakh credit equivalent to 1,5 ECTS points.

The peers noticed that in the module descriptions the hours for lectures and self study do not correspond to the given ECTS Points. In different descriptions the ECTS points based on

different numbers of student workload hours, either 27 or 30 hours. Additionally, they determined that both programmes cover different numbers of ECTS points in total although both have the same duration and last 8 semesters. For the Bachelor in Mathematics the university defined 239 ECTS Points and for the Bachelor of Computer science 264 ECTS points are given in total. The peers observed that for programmes with 8 semesters regularly are given 240 ECTS points which means a maximum of 7200 hours student workload for the complete programme. The Bachelor Computer Science exceeds this maximum with 7800 hours in total.

Additionally, the peers determined that in both programmes there is a peak of the workload in the 4th and 5th semester with up to 40 ECTS points per semester. From their point of view it is necessary to ensure that the workload of the students does not exceed 7200 hours in total and to avoid structural peaks of workload as in the 4th and 5th semester.

Further on the peers got the impression by assessing the bachelor theses that the needed workload seems to be much higher than 2 Kazakh respectively 3 ECTS points. For them it is necessary that the ECTS points given for the final thesis correspond to the real workload of the students.

Criterion 2.3 Teaching methodology

Evidence:

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

Preliminary assessment and analysis of the peers:
The programmes under review are full-time programmes with classroom, structured, and self-study activities. The staff members apply various teaching and learning methods (such as lectures, computer training and classroom, individual and group assignments,). Structured activities include tutorial, homework and assignment. Group project assignments are also given in some courses to develop students' skills in teamwork, discussion, and coordination. The peers concluded also with reference to the remarks of the students that the teaching methods and instruments used support the students in achieving the learning outcomes. The degree programmes are balanced between attendance-based learning and self-study.

Criterion 2.4 Support and assistance

Evidence:

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

Preliminary assessment and analysis of the peers:
There are several centralized institutions at CSUTE for the general support of students. The field specific support is given by the lecturers. Students complimented the reachability of the professors and the quality of their support. The peers underlined that the allocated advice and guidance assist the students in achieving the learning outcomes and in completing the course within the scheduled time.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion only partially fulfilled and suggested requirements for both programmes about the basic knowledge of the students in field specific core disciplines and the recognition rules of credits acquired at other higher education institutions. Further on they suggested requirements about the total workload of the students and the ECTS points given for the final thesis. Additionally, they suggested a requirement for the bachelor computer science about the consistency of the sequence and workload of the modules and a recommendation for both programmes about the opportunities of the students to define an individual focus.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation

Evidence:

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

Preliminary assessment and analysis of the peers:
The exams are module related. For each module, a form of assessment (including suitable alternatives, if any) has been defined. But the peers determined that not all exams are structured to cover the intended learning outcomes. In the first semesters most exams are computer based and only in the later semesters there are more written and oral exams. Therefore from the point of view of the peers not all exams offer students continuous feedback on their progress in developing competences. They recommended to stronger align the form of examination with the intended learning outcomes of the respective module.

On average students have to absolve 8 exams per semester with additional midterms. From the point of view of the peers the number and distribution of the exams still ensure that both the exam load and preparation times are adequate. All exams are organised in a way which avoids delays to student progression caused by deadlines, exam correction times, re-sits etc and are marked using transparent criteria. Failed exams can be repeated as often as students like to do but they have to pay credit fees for the repetition.

Regarding the final thesis the peers learned that students with a poor grade average may choose to write a bachelor thesis or only a state exam. The final decision who is allowed to write a thesis is taken by the scientific council of the university. This regulation was given by the ministry in 2015 in order to avoid students with poor grades entering master programmes. Since the regulation is in place only 4 out of 18 graduates wrote a thesis. From the view of the peers an academic study programme has to ensure that students are able to work independently on an academic level. They knew that the university cannot change that regulation by itself. On the other side an exam only seems not to be adequate to an academic programme. Hence there should be at least some kind of final project for all students if a regular thesis is not accomplishable.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion partially fulfilled and suggested a requirement for both programmes about the thesis or final project which should be absolved by all students. Further on they suggested a recommendation for both programmes to align stronger the form of examination with the intended learning outcomes of the respective modules.

4. Resources

Criterion 4.1 Staff

Evidence:

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

Preliminary assessment and analysis of the peers:
Considering the other programmes offered by the faculties the quantity of the teaching staff seems to be sufficient to offer all programmes in the foreseen quality. Additional to the educational programmes there are field specific programmes in the faculties of Computer Science and the mathematics programme is included in the faculty of pedagogic.

Each lector has a teaching load of 500 hours a year which corresponds to around 16 hours per week in one semester. Until 2015 the teaching load included 600 hours but it was reduced to get more time for research activities. Because of the quantity of staff members and their teaching workload there is not much time for research activities from the point of view of the peers. Hence there are only few research projects in the fields of computer science and mathematics conducted by the lecturers.

Regarding the scientific orientation and qualification of the teaching staff the peers determined that there are only three mathematicians and also only a few computer scientists involved in the programmes. Even in case that in educational programmes there is less need of references to actual research activities it seems to be essential that all field specific aspects have to be taught by experts. Therefore the peers saw it necessary that the field specific qualification of the teaching staff has to be increased. That means that the number of lecturers educated in computer science and mathematics has to be increased.

Criterion 4.2 Staff development

Evidence:

- Self Assessment Report
- Discussions with representatives of CSUTE 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 the teaching staff. Especially new staff members were required to take short

courses in teaching methodology. Also sabbaticals are possible even though only for a couple of weeks. Hence, the peers could see that CSUTE offered opportunities to staff members to further develop their professional and teaching skills.

Criterion 4.3 Funds and equipment

Evidence:

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

Preliminary assessment and analysis of the peers:
The peers were explained that financial sources for CSUTE originated from tuition fees, government funding and society funding. The report provided an overview of the budget for the Faculty. The operational funds were distributed to the Faculties based on a specific formula depending on the number of students.

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

The peers saw an adequate equipment in hard- and software for the teaching requirements although they noticed need for modernisation of the existing computers and software. Especially for the self studies of students it would be very helpful to increase the number of computer workstations and rooms available for their unguided studies.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion only partially fulfilled and suggested a requirement for both programmes to define a concept how to increase the field specific qualification of the teaching staff. Further on they suggested a recommendation to increase the number of computer workstations and working places available for the self study of students.

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 the modules have comprehensible names and identification codes, that responsible persons are named, the teaching methods are specified and the workload is defined in connection with the credit points for each module. Additionally the learning outcomes are defined for knowledge, abilities and competences.

But the peers determined that the contents of the modules described especially for the Bachelor Computer Science are not quite significant and that the examination forms and durations are not defined in the module descriptions. Here the peers saw the need for a revision of the module descriptions.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

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

Preliminary assessment and analysis of the peers:
After graduation a certificate in Kazakh and Russian 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 point of 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 Kazakh 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:

- 51 different regulations for academic and student Affairs

Preliminary assessment and analysis of the peers:
Comparing to European universities the peers considered a tremendous number of regulations and rules defined by the university. In these different regulations all rights and duties of both the higher education institution and students are clearly defined and they contain all relevant course-related information and are published on the websites of the university.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion only partially fulfilled and suggested a requirement for both programmes about the module descriptions and the diploma supplements.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self Assessment Report
- Discussions with representatives of CSUTE 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 and the head of university 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 develop-

ment responsibilities and mechanisms are defined. 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 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 are not really interested in the results. Nevertheless from the point of view of the peers it is necessary to close the feedback loops with the students as well in order to motivate them to give significant answers to the evaluation.

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

The university resigned on any comment to this criterion. Hence the peers confirmed their former assessment. They saw the criterion partially fulfilled and suggested a requirement for both programmes about a feedback to students regarding the evaluation results.

D Additional Documents

No additional documents needed

E Comment of the Higher Education Institution

The university resigned on any comment to the report.

F Summary: Peer recommendations

Due to the fact the university resigned on any comment the peers assessed their assessments during the onsite visit.

The peers recommend the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Computer Science	With requirements for one year	Refusal EuroInf®	30.09.2022
Ba Mathematics	With requirements for one year	--	30.09.2022

Requirements

For both programmes

A 1. (ASIIN 1.3, 2.1) Ensure that all students get at least basic knowledge in the field specific core disciplines.

A 2. (ASIIN 1.4) Define rules for the recognition of credits acquired at other higher education institutions in accordance with the Lisbon Recognition Convention.

A 3. (ASIIN 2.2) Ensure that the workload of the students does not exceed 7200 hours in total. Equalize the workload of the students during the single semester in order to avoid structural peeks in the 4th and 5th semester.

A 4. (ASIIN 2.2) Ensure that the ECTS Points given for the final thesis correspond to the real workload of the students.

A 5. (ASIIN 3) Ensure that all students absolve a thesis or a final project which ensures that they work on a set task independently and at the level aimed for.

A 6. (ASIIN 4.1) Define a concept how to increase the field specific qualification of the teaching staff.

A 7. (ASIIN 5.1) Rewrite the module descriptions so as to include information about the contents (especially Ba Computer Science) and the conditions for the award of credits (examination form and duration).

A 8. (ASIIN 5.2) Ensure that the Diploma Supplement contains detailed information about the educational objectives, intended learning outcomes, ECTS points as well as about

the educational system of Kazakh and statistical data according to the ECTS-Users' guide in addition to the final grade.

A 9. (ASIIN 6) Ensure that the students get a feedback about the results of the teaching evaluation.

For Bachelor Computer Science

A 10. (ASIIN 1.3) Offer more opportunities for students to get knowledge about field specific didactical aspects in computer science.

A 11. (ASIIN 2.1) Ensure that the sequence and the workload of the modules are consistent to their content.

Recommendations

E 1. (ASIIN 2.1) It is recommended to allow students to define an individual focus and course of study by their own not depending on the choice of the majority of the students.

E 2. (ASIIN 3) It is recommended to stronger align the form of examination with the intended learning outcomes of the respective module.

E 3. (ASIIN 4.3) It is recommend to increase the number of computer workstations and rooms available for the self study of students.

Mathematics

E 4. (ASIIN 1.3) It is recommended to enhance student's ability to teach through adequate didactical means what it is called pedagogical content knowledge.

G Comment of the Technical Committees

Technical Committee 04 - Informatics

The Technical committee discussed the report of the peers only regarding to the bachelor's degree programme in computer sciences. Considering the fact that not one of the criteria is fulfilled completely the Technical Committee doubted whether the programmes could

be accredited at this moment. Especially the point that nearly all field specific core disciplines are elective and hence the curriculum not ensures that all students get at least basic knowledge of the core disciplines of computer sciences seemed to be extremely critical from the point of view of the Technical Committee. Further on the Technical Committee could not understand how students should be prepared teaching computer sciences at schools nearly without any field specific didactical competences. The Committee confirmed that the general pedagogical education seemed to be sufficient but without adequate field specific didactical offers the curriculum could not achieve the intended objectives of the programme. In combination with the fact that the field specific qualification of the teaching staff seems to be quite poor the committee could not see how the programmes could be restructured adequately within the next months and who could it do. Hence the committee recommended to the Accreditation Committee to change the requirements 1, 6 and 10 suggested by the peers into preconditions which have to be fulfilled before the accreditation. Further on, the committee confirmed the other requirements and recommendations suggested by the peers. The final decision about these requirements and recommendations should be taken after the fulfilment of the preconditions.

The Technical Committee 04 – Informatics recommends the award of the seals as follows subject to the final assessment of the peers:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Computer Science	Suspension	Refusal Euro-Inf®	30.09.2022
Ba Mathematics	Suspension	--	30.09.2022

Preconditions to be fulfilled before an accreditation

P 1. (ASIIN 1.3, 2.1) Ensure that all students get at least basic knowledge in the field specific core disciplines.

P 2. (ASIIN 4.1) Define a concept how to increase the field specific qualification of the teaching staff.

P 3. (ASIIN 1.3) Offer more opportunities for students to get knowledge about field specific didactical aspects in computer science.

Possible Requirements

For both programmes

A 1. (ASIIN 1.4, 2.1) Define rules for the recognition of credits acquired at other higher education institutions in accordance with the regulations of the Lisbon Recognition Convention.

A 2. (ASIIN 2.2) Ensure that the workload of the students does not exceed 7200 hours in total. Equalize the workload of the students during the single semester in order to avoid structural peeks in the 4th and 5th semester.

A 3. (ASIIN 2.2) Ensure that the ECTS Points given for the final thesis correspond to the real workload of the students.

A 4. (ASIIN 3) Ensure that all students absolve a thesis or a final project which ensures that they work on a set task independently and at the level aimed for.

A 5. (ASIIN 5.1) Rewrite the module descriptions so as to include information about the contents (especially Ba Computer Science) and the conditions for the award of credits (examination form and duration).

A 6. (ASIIN 5.2) Ensure that the Diploma Supplement contains detailed information about the educational objectives, intended learning outcomes, ECTS points as well as about the educational system of Kazakh and statistical data according to the ECTS-Users' guide in addition to the final grade.

A 7. (ASIIN 6) Ensure that the students get a feedback about the results of the teaching evaluation.

For Bachelor Computer Science

A 8. (ASIIN 2.1) Ensure that the sequence and the workload of the modules are consistent to their content.

Possible Recommendations

E 1. (ASIIN 2.1) It is recommended to allow students to define an individual focus and course of study by their own not depending on the choice of the majority of the students.

E 2. (ASIIN 3) It is recommended to align stronger the form of examination with the intended learning outcomes of the respective modules.

E 3. (ASIIN 4.3) It is recommend to increase the number of computer workstations and working places available for the self study of students.

Mathematics

E 4. (ASIIN 1.3) It is recommended to enhance student's teaching abilities through adequate didactical means what it is called pedagogical content knowledge.

Technical Committee 12 - Mathematics

The Technical committee discussed the report of the peers only regarding to the bachelor's degree programme in mathematics. As the technical Committee for Informatics it doubted whether a programme could be accredited which does not fulfil completely even one of the criteria. It followed as well the TC Informatics that it is extremely critical that nearly all field specific core disciplines are elective and hence the curriculum not ensures that all students get at least basic knowledge of the core disciplines of mathematics. Considering the field specific qualification of the teaching staff the committee doubted that the curriculum of the programme could be restructured adequately within the next months only by the existing staff members. Hence the committee recommended to the Accreditation Committee to change the requirements 1 and 6 suggested by the peers into preconditions which have to be fulfilled before the accreditation.

Regarding the field specific didactical education the situation seemed to be better than in the programme of computer science. Nevertheless the Technical Committee found the existing didactical offers as not sufficient to achieve the intended objectives completely. Therefore it suggested to change the appropriate recommendation into a requirement.

Further on, the committee confirmed the other requirements and recommendations suggested by the peers. The final decision about these requirements and recommendations should be taken after the fulfilment of the preconditions.

The Technical Committee 12 – Mathematics recommends the award of the seals as follows subject to the final assessment of the peers:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditaiton
Ba Computer Science	Suspension	Refusal Euro-Inf®	30.09.2022
Ba Mathematics	Suspension	--	30.09.2022

Preconditions to be fulfilled before an accreditation

P 1. (ASIIN 1.3, 2.1) Ensure that all students get at least basic knowledge in the field specific core disciplines.

P 2. (ASIIN 4.1) Define a concept how to increase the field specific qualification of the teaching staff.

Requirements

For both programmes

A 1. (ASIIN 1.4, 2.1) Define rules for the recognition of credits acquired at other higher education institutions in accordance with the regulations of the Lisbon Recognition Convention.

A 2. (ASIIN 2.2) Ensure that the workload of the students does not exceed 7200 hours in total. Equalize the workload of the students during the single semester in order to avoid structural peeks in the 4th and 5th semester.

A 3. (ASIIN 2.2) Ensure that the ECTS Points given for the final thesis correspond to the real workload of the students.

A 4. (ASIIN 3) Ensure that all students absolve a thesis or a final project which ensures that they work on a set task independently and at the level aimed for.

A 5. (ASIIN 5.1) Rewrite the module descriptions so as to include information about the contents (especially Ba Computer Science) and the conditions for the award of credits (examination form and duration).

A 6. (ASIIN 5.2) Ensure that the Diploma Supplement contains detailed information about the educational objectives, intended learning outcomes, ECTS points as well as about the educational system of Kazakh and statistical data according to the ECTS-Users‘ guide in addition to the final grade.

A 7. (ASIIN 6) Ensure that the students get a feedback about the results of the teaching evaluation.

For Bachelor Computer Science

A 8. (ASIIN 2.1) Ensure that the sequence and the workload of the modules are consistent to their content.

For Bachelor Mathematics

A 9. (ASIIN 1.3) Offer more opportunities for students to get knowledge about field specific didactical aspects in computer science.

Recommendations

E 1. (ASIIN 2.1) It is recommended to allow students to define an individual focus and course of study by their own not depending on the choice of the majority of the students.

E 2. (ASIIN 3) It is recommended to align stronger the form of examination with the intended learning outcomes of the respective modules.

E 3. (ASIIN 4.3) It is recommend to increase the number of computer workstations and working places available for the self study of students.

Mathematics

E 4. (ASIIN 1.3) It is recommended to enhance student's teaching abilities through adequate didactical means what it is called pedagogical content knowledge.

H Decision of the Accreditation Commission (31.03.2017)

The Accreditation Committee discussed the procedure and followed the recommendation of the Technical Committees involved to suspend the programmes. The Accreditation Committee doubted whether the university could increase the field specific qualification of the teaching staff and afterwards restructure the curricula in a way that solve the problems mentioned in the report within the next nine month (the regular time line for the fulfilment of requirements). There the Accreditation Committee changed for the bachelor's degree programme in mathematics two requirements and for the bachelor's degree programme in computer science three requirements into preconditions. The university is asked to fulfil these preconditions before a final decision of the accreditation within 18 Month. Additionally, the Accreditation Committee already named possible requirements and recommendations which will be defined with the final decision about the accreditation. Additional documents by the university about the possible requirements and recommendations will be respected for the final decision.

Assessment and analysis for the award of the Euro-Inf® Label:

The Accreditation Committee judges that the intended learning outcomes of the bachelor's degree programme in Computer Science not comply with the Subject-Specific Criteria of the Technical Committee 04 - Informatics.

The Accreditation Commission for Degree Programmes decides to award the following seals subject to the comment of the Technical Committee 12 - Mathematics:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Computer Science	Suspension	Refusal Euro-Inf®	30.09.2022
Ba Mathematics	Suspension	--	30.09.2022

Conditions to be met for resumption

For all programmes

V 1. (ASIIN 1.3, 2.1) Ensure that all students get at least basic knowledge in the field specific core disciplines.

V 2. (ASIIN 4.1) Define a concept how to increase the field specific qualification of the teaching staff.

For the Bachelor Computer Science

V 3. (ASIIN 1.3) Offer more opportunities for students to get knowledge about field specific didactical aspects in computer science.

Possible Requirements

For all programmes

A 1. (ASIIN 1.4, 2.1) Define rules for the recognition of credits acquired at other higher education institutions in accordance with the regulations of the Lisbon Recognition Convention.

A 2. (ASIIN 2.2) Ensure that the workload of the students does not exceed 7200 hours in total. Equalize the workload of the students during the single semester in order to avoid structural peeks in the 4th and 5th semester.

A 3. (ASIIN 2.2) Ensure that the ECTS Points given for the final thesis correspond to the real workload of the students.

A 4. (ASIIN 3) Ensure that all students absolve a thesis or a final project which ensures that they work on a set task independently and at the level aimed for.

A 5. (ASIIN 5.1) Rewrite the module descriptions so as to include information about the contents (especially Ba Computer Science) and the conditions for the award of cred-its (examination form and duration).

A 6. (ASIIN 5.2) Ensure that the Diploma Supplement contains detailed information about the educational objectives, intended learning outcomes, ECTS points as well as about the educational system of Kazakh and statistical data according to the ECTS-Users‘ guide in addition to the final grade.

A 7. (ASIIN 6) Ensure that the students get a feedback about the results of the teaching evaluation.

For Bachelor Computer Science

A 8. (ASIIN 2.1) Ensure that the sequence and the workload of the modules are consistent to their content.

For Bachelor Mathematics

A 9. (ASIIN 1.3) Enhance student’s teaching abilities through adequate didactical means what it is called pedagogical content knowledge.

Possible Recommendations

E 1. (ASIIN 2.1) It is recommended to allow students to define an individual focus and course of study by their own not depending on the choice of the majority of the students.

E 2. (ASIIN 3) It is recommended to align stronger the form of examination with the intended learning outcomes of the respective modules.

E 3. (ASIIN 4.3) It is recommend to increase the number of computer workstations and working places available for the self study of students.

I Decision of the Accreditation Commission (07.12.2018)

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

Despite several inquiries, the university has not submitted any documents for the resumption of the procedure.

For this reason, the procedure is terminated and no seals will be awarded.

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

Degree Programme	ASIIN seal	Subject-specific Label	Maximum duration of accreditation
Ba Computer Science	No seal awarded	--	--
Ba Mathematics	No seal awarded	--	--

Appendix: Programme Learning Outcomes and Curricula

According to the self report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme computer science:

Specialty	Knowledge	Capability	Skills	Competencies
5B011100 - Computer science	- configuration, structure and properties of information processes, general building principles of computers, functional principles of basic logic units; - general principles of algorithm building, object-oriented programming techniques; - general principles of web-technologies design and appliance; - data security features; - techniques and tools of computer graphics and geometric modeling; - techniques of computer and information technologies appliance in practices	- apply the advanced techniques and tools of algorithm design; - solve the issues of operational and technological activities in a professional manner considering modern science and technology; - develop the application programs models; - apply the obtained skills in implementation of information and communication technologies in educational process; - apply the gained knowledge for right solution choice in development of data cryptographic security agents; - learn, analyze the educational	- apply the up-to-date information technologies in graphics building; - select, design and implement the software for the purpose of various subject domains, assess its quality and analyze its efficiency; - apply the software of general and professional purpose; - service, equip the PC with the hardware and software; - group work in development and implementation of modeling projects.	- be mobile within changing professional activities; - show the skills in formulation and solving of the issues occurred during professional and research activities; - demonstrate the motivation for studying of subjects based on advanced computer design and modeling system appliance, use the state-of-art technical tools and information technologies for solving the communication issues.

		materials, pick the required material volume.		

The following **curriculum** is presented:

Courses duration: 4 years
Academic degree: Bachelor of Education
of qualification 5B011100 - Computer science

Course	**Discipline code**	***Discipline description***	**Credit q-ty**	**Term**	**Control form**
1	2	*3*	4	5	6
GES	***General education subjects***		**33**		
MC	***Mandatory components***		**30**		
	IK 1101	History of Kazakhstan	3	1	State exam
	Fil 2102	Philosophy	3	4	Exam
	IYa 1103	Foreign language	6	1-2	Exam
	K(R)Ya 1104	Kazakh (Russian) language	6	1-2	Exam
	EUR 1105	Environment and sustainable development	2	1	Exam
	Soc1106	Sociology	2	1	Exam
	Pol 2107	Political science	2	4	Exam
	OET 2108	Elementary economics	2	3	Exam

	OP 2109	Law basics	2	4	Exam
	OBZh 1110	Health and Safety	2	1	Exam
SC	***Selectable components***		**3**		
BS	***Basic subjects***		**64**		
MC	***Mandatory components***		**20**		
	VPP 1201	Basics of pedagogical profes-sion	1	1	Exam
	Ped 1202	Pedagogics	3	2	Exam
	Etn 2203	Ethno-pedagogics	2	3	Exam
	PRCh 1204	Human psychology and devel-opment	3	2	Exam
	Sam 2205	Self-discovery	2	3	Exam
	VFShG 1206	Developmental physiology and school hygiene	2	2	Exam
	PK(R)Ya 3207	Profession-oriented Kazakh (Russian) language	2	6	Exam
	POIYa 3208	Profession-oriented foreign language	2	6	Exam
	MPI 3209	Computer science teaching techniques	3	6	Exam
SC	***Selectable components***		**44**		
MS	***Major subjects***		**32**		
MC	***Mandatory components***		**5**		

	TMVR 3301	Theory and methodology of up-bringing	2	6	Exam
	TOI 1302	Foundation of Computer science	3	2	Exam
SC	***Selectable components***		**27**		
TOTAL:			**129**		
AET	***Additional education types***				
PI	***Professional internship***		**Not less than - 6***		
	Education				Report
	Work experience (pedagogical)				Report
	Pre-graduation				Report
PE	***Physical Education***		**16**		
FA	***Final Assessment***		**3**		
	State exam of the speciality		1	8	
	Thesis (project) writing and defense		2	8	
TOTAl:			**Not less than - 154**		

According to the self report the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor degree programme mathematics:

Specialty	Knowledge	Capability	Skills	Competencies
5B010900 – Mathematic	– theoretical mathematics, rank and relation of mathematic with other science in general, standards, mathematic models; – methodological basis and pedagogy categories; psychological capabilities and students' demands, their typological and individual natures; – theoretical materials, theorems, basic formulas of elementary and advanced math; – the general issues of math teaching techniques: purposes, principles, matter, methods, tools, mode of math study; – mathematic problem solving technique, specific issues of math teaching techniques;	- apply the analogy in the problems, proofs or deductions with different meaning; - keep consecutive reasoning in proofs, justifications, deductions, обоснованиях, выводах; – analyze, synthesize, generalize the mathematic materials; – think in theory, schematize, improve mathematical language, mathematical memory, mathematical intuition; – plan and maintain own self-education; – apply the information and telecommunication technologies in teaching activities; apply the innovative techniques and technologies in own subject; - be able to build the various mathematic models for describing the different phenomenon and facts of reality, conduct	- handling of applied problems, effectiveness analysis of their functioning, conducting of lessons at schools and different types of education institutions; - maintaining of pedagogical cooperation in subject oriented area; – carrying out of self-analysis, self-checkout and corrections of process and teaching activities result; – all issues related to education, mental training and development of child, teenagers and young adults; – practical application of theoretical knowledge and skills in professional activities and opportunity of future career development; – skills in mathematical language and symbols,	– improve and develop the intellectual and cultural level; – be capable for self-learning of new research techniques, changing of professional activities scientific profile; – use the relevant mathematical tool for processing, analyzing and systematization of information by research issue; – apply the methods of mathematical analysis and modeling, theoretical and research studies; - be capable to search, make interpretation and handle the data, apply the basic mathematical knowledge in the professional activities being able to consolidate, analyze, absorb the information, to set the objective and select the way of its achievement.

	– software languages, application software packages.	their qualitative and quantitative analysis.	having idea of mathematical modeling, evaluation of problem solution reasoning and significance of result.	

The following **curricula** are presented:

Courses duration: 4 years
Academic degree: Bachelor of Education
of qualification 5B010900-Mathematics

Course	**Discipline code**	**Discipline description**	**Credit q-ty**	**Term**	**Control form**
1	2	3	4	5	6
GES	**General education subjects**		**33**		
MC	**Mandatory components**		**33**		
	IK 1101	History of Kazakhstan	3	1	State exam
	Fil 2102	Philosophy	3	4	Exam

	IYa 1103	Foreign language	6	1-2	Exam
	K(R)Ya 1104	Kazakh (Russian) language	6	1-2	Exam
	Inf 1105	Information Technology	3	1	Exam
	EUR 1106	Environment and sustainable development	2	1	Exam
	Soc1107	Sociology	2	1	Exam
	Pol 2108	Political science	2	4	Exam
	OET 2109	Elementary economics	2	3	Exam
	OP 2110	Law basics	2	4	Exam
	OBZh 1111	Health and Safety	2	1	Exam
SC	**Selectable components**				
BS	**Basic subjects**		**64**		
MC	**Mandatory components**		**20**		
	VPP 1201	Basics of pedagogical profession	1	1	Exam

	Ped 2202	Pedagogics	3	3	Exam
	Etn 2203	Ethno-pedagogic	2	3	Exam
	PRCh 1204	Human psychology and development	3	2	Exam
	Sam 2205	Self-discovery	2	3	Exam
	VFShG 2206	Developmental physiology and school hygiene	2	4	Exam
	PK(R)Ya 3207	Profession-oriented Kazakh (Russian) language	2	5	Exam
	POIYa 3208	Profession-oriented foreign language	2	6	Exam
	MPM 3209	Mathematics teaching techniques	3	6	Exam
SC	**Selectable components**		**44**		

MS	**Major subjects**		**32**		
MC	**Mandatory components**		**5**		
	TMVR 3301	Theory and methodology of upbringing	2	6	Exam
	EM 1302	Elementary mathematics	3	1	Exam
SC	**Selectable components**		**27**		
TOTAL:					
AET	**Additional education types**				
PI	**Professional internship**		**Not less than - 6***		
	Education				Report
	Work experience (pedagogical)				Report
	Pre-graduation				Report
PE	**Physical Education**		**16**		
FA	**Final Assessment**		**3**		
	State exam with the speciality		1	8	

	Thesis (project) writing and defense	2	8	
TOTAl:		**Not less than - 154**		