ASIIN Accreditation Report

Bachelor's and Master's Degree Programmes
Geology and Exploration of Mineral Deposits

offered by

East Kazakhstan State Technical University Ust Kamenogorsk

Version: 27.06.2014

Table of Content

A About the Accreditation Process

Title of the degree Programme	Labels applied for [1]	Previous accreditation	Involved Technical Committees (TC)[2]
Bachelor Geology	ASIIN		TC 11
Master Geology	ASIIN		TC 11
Date of the contract: 24.04.2012 **Submission of the final version of the self-assessment report:** 24.12.2012 **Date of the onsite visit:** 23 until 24 January 2014 **at: Ust Kamenogorsk**			
Peer panel: Prof. Dr. Andreas Hoppe, Technical University Darmstadt; Prof. Dr. Thomas Kirnbauer, technical University of Applied Science Bochum; Prof. Dr. Bernd Lehmann, Technical University Clausthal; Dipl.-Geol. Stephan Peters, DMT GmbH & Co. KG, Essen			
Representative of the ASIIN headquarter: Dr. Michael Meyer			
Responsible decision-making committee: Accreditation Commission for Degree Programmes			
Criteria used: European Standards and Guidelines as of 10.05.2010 ASIIN General Criteria, as of 10.12.2010 Subject-Specific Criteria of Technical Committee 11 –Geoscience as of 10.12.2011			

[1] ASIIN Seal for degree programmes;

[2] TC: Technical Committee for the following subject areas: TC 01 – Mechanical Engineering/Process Engineering; TC 02 – Electrical Engineering/Information Technology); TC 03 – Civil Engineering, 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.

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 Geology and Exploration of Mineral Deposits		Full time	8 Semester 240 CP	September 1rst; Every winter semester	80 / year	2350 $ / year
Ma Geology and Exploration of Mineral Deposits		Full time	4 Semester 120 CP	September 1rst; Every winter semester	5 / year	2860 $ / year

For the degree programmes the self-assessment report states the following **intended learning outcomes**:

Goal code	Goal formulation
G1	Training a graduate for production activity at industrial enterprises in the area of geology who has advanced knowledge of scientific, engineering, and economical character as a foundation of professional education
G2	Training a specialist for research activity for creating innovative technologies; forming innovative thinking and mastering the methodology of research work
G3	Training a specialist for organizational management activity for supporting effective functioning of an industrial enterprise
G4	Training a specialist for design activity in the area of geology, exploration, and mineral resources mining, rational nature management
G5	Training the graduates for independent learning and mastering new professional knowledge and skills, continuous professional self-improvement under changing labor market lows

G 6 M	Training graduates of high class for research, industrial and pedagogical activity in the area of geology on the basis of deepening earlier obtained knowledge.

	Special competences	**Modules**
R1	To use deep basic and special, scientific and professional knowledge in professional activity for solving the problems of supporting mineral-raw basis and rational nature management	GMRK 206; GR 207; Chem 106; Geod107;MB 305
R2	To improve existing and introduce new methods of substance examining, doing geological exploration, technological decisions. Search of new technologies for ore extracting and processing. To do laboratory and experimental geological-mineral-geochemical studying using up-to-date software.	CMP 202; GIS 208; GD 104; TRO 306
R3	To solve presented problems. To select, analyse and generalize stock geological, geochemical and other data, to develop prognosis-geological-industrial deposits types, to formulate the tasks for geological and exploration work	STG 203; GeoCH 209; SEMD 301; DCGM 304
R4	To know about global ecological problems in connection with economical development of human society, basic principles of rational mineral resources use, and control of georesources of the Republic of Kazakhstan, be able to assess the affect of an industrial object on the environment	GHG 201; IEBMP 204; MDG 302;Hyd 303
R5	Ability for mobility and perception to the improvement of machinery and technology, to the use of scientific-technological progress, the ability to assess the innovative potential of produced goods, their competitiveness	BEA 205; Psy; HPS
R6	Deepening interdisciplinary and beyond disciplinary knowledge obtained at first professional training stage; completing this knowledge by widening methodological and analytical research apparatus	HGRMD; MH; MG; LR; MXRMR

R7	Skills for selecting optimal ways of solving problems, deepening methodological approach for solving nonstandard problems and tasks, the ability to assess their results critically using analytical interdisciplinary approach	MOO; GeoM; Ped
R8	The ability to use up-to-date methods for developing low-waste, energy-saving and ecologically pure technologies of extracting and developing mineral resources supporting people vital function safety	MRAD; MPG; MDK
Social competences		
R9	The ability to use fundamental and special knowledge in the area of mathematics, science, Liberal arts and economics in complex engineering activity on the basis of integral network of scientific knowledge about surrounding world for information processing and analysis of geological data for solving typical professional problems	HK 401; Eco 405; Math 101; Phys 103
R10	To master a foreign language actively on the level allowing to work in an international team, to develop the documentation, to present and defend the results of innovative activity in the sphere of geological-exploration work	K(R)L 402; FL 403; SS 2224
R 11	To demonstrate the knowledge of legal, social, ecological, and cultural aspects of complex engineering activity, awareness of health protection issues and vital functions and labor safety at mining enterprises.	OP 4109; ESAI 105
R 12	To work effectively individually and in a team as a member or a leader of a group including specialists of different specialities and qualification; to demonstrate the responsibility for the work results and readiness to follow the corporative culture of an organization	SOZ 3107
R 13	To demonstrate the understanding of essence and meaning of information in developing modern geology, possessing the basic methods and ways of getting, keeping, and procsessing information; using up-to-date technology and informational technologies for solving communicative problems	CS 102

R 14	To study and continuously improve the qualification during the whole period of professional activity	FL; IPHE;
R 15	The ability for independent research, to organize, conduct, and lead complicated projects, to obtain scientific, engineering, and social competences, experience of international and cross cultural interaction	Phil 104; ECO 405

An undergraduate and a graduates of the speciality must be trained and ready for solving the following professional problems:

In organizational-administrative activity:

- Taking part in organizing seminars, conferences, meetings;
- Taking part in planning and organizing field and laboratorial geological works; taking part in the control for observing on-the-job safety;
- Organizing team work;
- Making administrative decision under different conditions;
- Determining the ways of optimal solving the put problems at compromise correlation of quality, safety, and cost of the work done;
- Providing the requited quality of the product

In scientific-industrial activity:

- Taking part in preparing field equipment and tools;
- Taking part in field geological examination and measurements using up-to-date technology;
- Taking part in selecting and processing field data in generalization of stock geological, geo-physical, geo-chemical, hydrogeological, engineering-geological, ecological-geological data with the help of modern informational technologies;
- Taking part in making maps, schemes, sections, tables, diagrams, and other established reports using approved forms.
- Developing optimal technology of geological-exploration work with the goal of mineral deposits prospecting;

- Increasing the effectiveness of geological exploration by using remote, geophysical, and other methods;
- Rational use of materials, equipment, special measuring and recording apparatus, algorithms, programs, computers at different stages of geological exploration work.

In project activity:

- Taking part in projecting of field and laboratorial work;
- Taking part in preparing estimate documents for doing field geological work.
- Preparing tasks for developing project decisions;
- Organization and doing complex of geological exploration, preparing estimate documents;
- Making calculations on the projects, feasibility study, ecological-economical basis of planned decisions;
- Assessing the innovative potential of the project, innovative risks;

In research activity:

- Taking part in working with experimental plants, models, laboratory and field equipment and instruments;
- Taking part in making sections of scientific-engineering reports, reviews, explanatory notes;
- Taking part in writing summaries, bibliography, preparing reports on conducted research topics for publication.
- To reveal timely the problematic issues arising during industrial and research work, determining the rational ways of their solving;
- studying the achievements of geological science, newest technological and methodological developments;
- doing specified kinds of research, improving methodology and methods of cartographical work and other expression of the research results.

In educational (pedagogical) activity:

- Teaching all kinds of classes to students, mastering the methodology and organizing of the training process as a whole and the separate courses of the disciplines;
- Developing, publication and introduction of educational-methodological work;
- Supporting the correlation of the training process with the latest achievements of science and industry.

The following **curriculum** is presented:

Bachelor Geology and Exploration of Mineral Deposits:

Mathematical and scientific disciplines

	Compulsory component
Module of Mathematics	Mathematics I
	Mathematics II
Module of Computer science	Computer science
Module of Physics	Physics 1
	Physics 2
Module of Descriptive geometry and graphics	Descriptive geometry and graphics
Module of Ecology and personal and social safety	Ecology and sustainable development
	Personal and social safety
Module of Chemistry	Chemistry
	Elective component 1 Physical and colloidal chemistry
Module of Geodesy	Geodesy with fundamentals of topography
	Total, Cycle 1: 43 ECTS Points

Special disciplines

	Compulsory componentт

Module of General and historical geology	General and historical Geology
	Elective component 2 Fundamentals of facies analysis
Module of Crystallography, mineralogy and petrography	Crystallography, mineralogy
	Petrography
	Elective component 3 Lithology
Module of Tectonics	**Elective component 4** Geomorphology
	Elective component 5 Geological mapping
	Structural geology
Module of Economics and principles of mineral management	Economics and production organization
	Fundamentals of mineral management
	Total 40 ECTS Points
	Elective component
Module of Fundamentals of enterpreneurial activity and patent branch	Elective component 6 Patent branch
	Elective component 7 Fundamentals of entrepreneurial activity
Module of Geotectonics and mineral resources of Kazakhstan	Elective component 8 Geotectonics
	Geology and mineral resources of Kazakhstan
	Elective component 9 Regional Geology
Module of GIS	Elective component 10 Mathematical methods in geology
	Elective component 11 GIS
Module of Geochemistry	Elective component 12 Geochemistry
	Elective component 13 Geochemical methods of mineral exploration
	Total 37 ECTS Points

Improvement of special knowledge (specialization)

Module of Exploration of mineral deposits and prospecting	Exploration of mineral deposits and prospecting

	Elective component 14 Mine geology
Module of the Geology of mineral deposits	Geology of mineral deposits
	Elective component 15 Industrial types of mineral deposits
Module of Hydrogeology	Hydrogeology
Module of Well-Drilling and geo-physical methods	Well-Drilling
	Geophysical methods
Module of Fundamentals of mining engineering	Elective component 16 Fundamentals of Mining engineering
Module of Mineral processing	Elective component 17 Mineral processing
	Total 45 ECTS Points

Other subjects and interdisciplinary sciences

Module of History of Kazakhstan	History of Kazakhstan
Module of Kazakh (Russian) lan-guage	Kazakh (Russian) language
Module of foreign languages	Foreign languages
Module of Philosophy	Philosophy
Module of Economic theory	Fundamentals of Economic theory
Module of Political sciences and sociology	Sociology
	Political sciences
	Fundamentals of law
Module of standardization	**Elective component 18** Standardization
	Total 45 ECTS Points

Master Geology and Exploration of Mineral Deposits

Modules lists		ECTS - credits		
No.	**Module title**	**SD**	**ASK**	**Total**
1	Science history and philosophy	6		6

2	Foreign languages	6		6
3	Pedagogy	6		6
4	Psychology	6		6
5	Applied geophysics	9		9
6	Fundamentals of innovative technologies in the educational process	9		9
7	Mine-ore geology	9		9
8	X-ray microscopic researches	9		9
	Total	**60**		**60**
10	Modern problems of geology		18	18
11	Mineral resources of Kazakhstan		9	9
12	Geology of natural and anthro-pogenic deposits		9	9
13	Hydrogeochemical exploration of mineral deposits		6	6
14	Mine hydrogeology		6	6
15	Modeling of ore deposits		6	6
16	Methods of laboratory research		9	9
	Total		**63**	**63**
17	Practical training		18	18
18	Graduate research		34	34
19	Final state attestation		18	18
	Total	**60**	**133**	**193**
	Percentage to the number of modules for the whole training period	**35.8**	**64.2**	**100%**

C Peer Report for the ASIIN Seal

1. Formal Specifications

Criterion 1 Formal Specifications

Evidence:

- Self-assessment report
- Discussions with representatives of the university

Preliminary assessment and analysis of the peers:
The peers noted that according to Kazakh legislations, scholarships are offered to those students applying with the highest grades after completion of high school. In the Geology programmes nearly all students get scholarships. The peers found all formal information to be appropriate.

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

Due to the fact that the university do not give any further information with its comment the peers confirm their preliminary assessement.

2. Degree programme: Concept & Implementation

Criterion 2.1 Objectives of the degree programme 2.2 Learning Outcomes of the Programme

Evidence:

- Self-assessment report
- Discussions with representatives of the university [objectives, classification]

Preliminary assessment and analysis of the peers:
The programmes under review aim at an education of geology with the specialisation in mineral deposits. The self-assessment report presented a lengthy list of objectives and intended learning outcomes for the Bachelor's and the Master's programme which the peers found reasonable and useful goals with respect to the demands of the labour market. But because the aims and learning outcomes were not differentiated between the

two levels it is questioned whether all these statements were suitable on both the level of the Bachelor's and the Master's degree programme. The peers saw the necessity to describe the aims and learning outcomes clearly separated for both programmes.

They also took note that the intended aims and learning outcomes as they were written in the self-assessment report were not accessible in the same manner in any formal documents, on the website or the draft diploma supplement. The intended learning outcomes should be publicly available in a clear and concise manner so that all stakeholders can refer to them and all quality assurance measures can be tailored towards verifying their actual achievement.

Nevertheless, the peers found that the areas of competence as set forth by the Subject-Specific Criteria in Geosciences are largely met by the programmes. Regarding the underlying bases the students shall have basic knowledge and understanding of the natural sciences, of the essential features, processes, materials, history and the development of the Earth and of the key aspects and concepts of geology. Especially, they shall be aware of the temporal and spatial dimensions in Earth processes - which should be trained intensely during excursions, practical field work and exercises - and of the applications and responsibilities of Geosciences and its role in society including its environmental aspects. Furthermore the peers found the intended learning outcomes of the bachelor's and the master's degree programme adequate to the requirements of the Subject Specific Criteria in Geosciences regarding abilities in Analysis, Design and Implementation, the technological, methodological and transferable skills and additional professional competences.

The teaching staff of the sub-department is responsible for the evaluation of the goals corresponding to the demand of the labor market.

Criterion 2.3 Learning outcomes of the modules/module objectives

Evidence:

- module description

Preliminary assessment and analysis of the peers:

The peers judged the module descriptions in general as an appropriate information base for the students but their comparability was hindered by the unequal elaboration of the individual modules. In some cases the intended learning outcomes of modules are described only generally while in other cases they were formulated very detailed. For some modules as for example the modules "Tectonical geology" (better: "Tectonics") or "Modern problems of geology" the peers questioned whether the described contents and goals are corresponding with the titles of the modules. So from the point of view of the peers

the module descriptions have to be revised and must give subject-specific information of the goals, content and the learning outcomes, i.e.- the special abilities a student will have after completing the study programme.

The module descriptions should be available to the students and other interested persons digitally on the internet and in printed form.

Criterion 2.4 Job market perspectives and practical relevance

Evidence:

- Statistics on graduates employment in terms of numbers and market sector
- Overview of jobs and companies of graduate employment
- Overview of companies for practical training
- Description of expected learning outcomes

Preliminary assessment and analysis of the peers:

The peers were impressed about the employment rate of the graduates with more than 90% in each cohort. They understood that in present times there is a big demand for geologists to prospect and explore for new mineral resources which is the reason why more than 80% of the graduates found their employment in governmental companies or institutions. There is a high demand on the labor market for graduates who possess the intended learning outcomes. The peers saw very intensive connections between teaching staff and industry and very good chances on the labor market for the graduates.

Practical experiences the students earn in laboratory work, in excursions and in field work. The peers remarked that the practical parts of the single modules were not respected in the module descriptions and have to be added. The peers learned that there is an excursion in the first year, after the second year there are two weeks for practical application of field work methods, and after the third year four weeks in production companies are scheduled. The peers unanimously regard the ability of thinking in space and time of geological phenomena with its mineral deposits as a key competence of geologists which requires learning in the field from numerous and manifold examples. They were astonished about the short time which is planned for practical work in the field and they questioned whether it is possible to visit different kinds of deposits during this short period. They could follow the wish of the students for more field work and recommended intensively that the students get more practical experiences in field work, especially with different types of mineral deposits.

Criterion 2.5 Admissions and entry requirements

Evidence:

- 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 and to the Master's degree programmes, respectively, were considered to be overall adequate by the peer group. While access to the Bachelor's level requires the completion of secondary education as well as passing a nation-wide general test, for the Master's level the completion of a first cycle programme as well as an English language and a subject-related exam have to be passed. The main aim of this additional exam is to test the qualifications gained through the previous Bachelor's degree. For both programmes there are no practical experiences required. So, the admission and entry requirements are designed to facilitate the achievement of the learning outcomes. They therefore ensure that those students admitted possess the required competences and formal training. The admissions and entry requirements ensure that all applicants are treated equally.

Regulations are in place covering the recognition of activities completed externally. They ensure that the learning outcomes are achieved at the intended level. The peers learned that transfer from or to other higher education institutions nationally or internationally currently is rather rare. Student exchange is organized, with very few exceptions, with other Russian-speaking countries. Rules for the recognition of external study attainments/achievements are stipulated in the EKSTU document "Transfer and Restitution of D. Serikbaev EKSTU Students" and regulate that transfers from other Kazakh or foreign institutions can be made when no more than five core disciplines differ.

Peers and interviewed students agreed on the advantages of students exchange programs to increase the mobility of students. Therefore, rules for the recognition of activities completed at other national and international higher education institutions should be established.

Criterion 2.6 Curriculum/Content

Evidence:

- Curricular structures

- Discussions with students and teaching staff

Preliminary assessment and analysis of the peers:
The objectives and content of the individual modules are coordinated in order to avoid any unintended overlap.

In general the curriculum makes it possible to achieve most of the intended learning outcomes by the time the degree is completed. But the peers wondered how the study aims could be fully achieved regarding the large ratio of elective courses. The peers noted that the elective courses contain a lot of field specific basics which are core disciplines of geology. From their point of view all geologists exploring for mineral deposits at least should have knowledge and understanding of geological mapping, lithology, geotectonics, regional geology and geochemistry which should be compulsory subjects for every student.

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

Regarding the objectives and learning outcomes of the programmes the peers appreciate the new descriptions sent with the comment. The university has separated the aims and learning outcomes for the two programmes in a reasonable way and adequate to the qualification levels of bachelor's and master's degree programmes. Therefore from the view of the peers the criteria 2.1 and 2.2 are fulfilled.

The peers appreciate also that the aims and learning outcomes are available on the internal webpage of the university and that they are fixed in the diploma supplements. On the other hand the aims are still not published in a way that external stakeholders could inform themselves also and the peers still see the necessity to publish the aims in more publically way.

Regarding the module descriptions the peers notice the willingness of the university to revise the presentation of the aims and the explanation of the practical parts in the single modules. Because the university could not sent yet revised descriptions the peers confirm their assessment regarding criterion 2.3.

The peers thank for the additional clarifications about practical work within the bachelor's degree programme. They are approved in their preliminary assessment that there is only little time for the specific field work and they confirm their recommendation that the Students should get more practical experiences in field work, especially with different types of mineral deposits.

The peers notice very positive that the university has approved already rules for the recognition of activities completed at other national and international higher education insti-

tutions to strengthen the international mobility of the students. But due to the fact they did not see those regulations yet they confirm their recommendation to criterion 2.5.

In regard to the curricula the peers acknowledge that there are detailed governmental rules for compulsory and elective parts. On the other side from their view it is necessary for geologists to have knowledge and understanding of the core disciplines which are for the peers geological mapping, lithology, geotectonics, regional geology and geochemistry. Therefore they recommended very strictly to teach these fields not only as elective but as compulsory courses.

3. Degree Programme: Structures, Methods & Implementation

Criterion 3.1 Structure and modularity

Evidence:

- The curricular structures define the structure and modularity of the programmes.

Preliminary assessment and analysis of the peers:
The programmes are modular. Each module is a coherent and consistent package of teaching and learning in itself. The sequence of modules is organized so as to ensure that it is possible to commence the programme in every semester when admissions take place.

The size and duration of the modules allow students to combine them flexibly. The peers learned that the high ratio of elective courses with about 40% of the curricular is based on governmental regulations. On the one side they appreciate the flexibility for the students on the other from their point of view the elective courses contain geological base disciplines necessary to obtain the key competences of a geologist exploring for mineral deposits which should be part of the core curriculum (compare chapter 2.6, above). In general they would prefer a different arrangement of compulsory and elective courses regarding volume and contents.

Regarding the flexibility the concept of both programmes offers time to spend a semester at another higher education institution or on a practical placement abroad. Students should be encouraged to benefit from studies abroad by getting more support in its organization by the university.

The Master's degree programme does not incorporate any modules at undergraduate level.

Criterion 3.2 Workload and credit points

Evidence:

- The curricular structures define the workload of the single modules.
- The students report about their experiences with the workload.

Preliminary assessment and analysis of the peers:
A credit point system is in place. All the work done by students is appropriately represented within it. All credit points are designated as ECTS Points. 60 credit points are awarded each year, 30 per semester. All compulsory components of the programmes are awarded credit points. For the Master's degree programme the university offered a new curricular structure with revised ECTS points. The peers asked for the digital edition of the new structure.

Projected time budgets are realistic, so that the programmes can be studied within the standard period of study for the degree. Although the workload is above the standard defined by ECTS the peers received the impression from discussion with the students that it is set at a level that avoids structural pressure on training quality and requirements for the level of study.

The allocation of credit points to modules is transparent and logical. Credit points are only given if the learning objectives of a module have been achieved.

Criterion 3.3 Educational methods

Evidence:

- Module descriptions
- Self report

Preliminary assessment and analysis of the peers:
The educational methods consist of lectures, lab classes, practical classes, independent student work with a teacher, independent student work, course projects and practical training/field practice. The peers appreciated the small study groups during laboratory work and lectures.

Lactures are told in Russian, Kazakh or, in some cases, in English. From the view of the peers the teaching methods and tools support the achievement of the learning outcomes at the intended level. The ratio of contact classes and independent working hours for undergraduates is 1:2, for graduates this ratio is 1:4. This ratio ensures the achievement of the defined goals. In this context the peers saw that the independent work with a teacher

is a kind of tutorial work which is voluntarily for the students. Laboratory work with different types of microscopes is hold four times a week.

The peers wonder about the textbooks given in the module descriptions and its limitation to Russian language. They recommended to amend the list of literature in all module descriptions in order to make it more usable for students and to include English language literature.

Criterion 3.4 Support and advice

Evidence:

- Self report
- During the visit the students reported on their experiences with support and advice of the teaching and administrative staff.

Preliminary assessment and analysis of the peers:
The peers saw sufficient resources available for offering individual support, supervision and advice to students. The advisory methods envisaged (subject-specific and general) are suitable for supporting students to achieve the learning outcomes and complete their degree within the normal period of study.

During the discussions with teaching staff and with students, the peer group met with a high degree of commitment. They learned that the teachers actively support students individually. Also, there are regular round tables for the discussion of papers and thesis work. The peers got the impression of a very highly motivated teaching staff and, correspondingly, they met very highly motivated students.

In the discussion with the students, they greatly appreciated that they now and then broaden their view by guest lecturers from abroad: The only area for improvement they mentioned is more information on possibilities to spend a semester or internship abroad. In the discussion with the programme coordinators, the peers noted that the university fosters academic mobility and that the Department for International Cooperation counsels students about the available programmes. Nevertheless the peers recommended to intensify the support of students to find possibilities for a semester at a university abroad.

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

The peers appreciate that the university got the financial support to establish structures for an additional support of students regarding studies abroad. So the corresponding recommendation seems no longer necessary. They also notice the new curricular structure

of the master's degree programme with the revised ECTS-Points and confirm their preliminary assessment.

4. Examination: System, Concept & Implementation

Criterion 4 Exams: System, concept & implementation

Evidence:

- EKSTU DP 808 Final Control and Students' Knowledge Assessment
- During the visit the students reported about their experiences with the examination system

Preliminary assessment and analysis of the peers:

Student testing is carried out with the help of current, intermediate and final control. The current control takes place for example as individual homework, intermediate control are usually written exams but also oral presentations, and the final exams are mainly computer testing and examination using paper question lists. In addition, students have to present their results during projects or laboratory work. Practical skills and the understanding of field specific context of the students are proven every two weeks by partial examinations about knowledge and understanding of cross sections.

When the examination session is over, the University organises an additional period (usually for 10 days) during which the students who skipped the examination by some reason are allowed to take the examinations.

The peers generally considered that all aspects regarding the type, organisation, distribution, and grading of examinations were regulated in a satisfactory manner. The type, organization and distribution of examinations are designed to support the attainment of the intended learning outcomes by the time the degree is completed. Examinations are coordinated so that students have sufficient time to prepare for them. The form of examination is laid down in the module description for each module. It is ensured that at the commencement of the teaching term, students are informed as to examination and pre-examination requirements, which must be in line with the module objectives. The examination organization guarantees examinations that accompany study and does not cause extensions to the period of study. The evaluation criteria are transparent for lecturers and students and focus on achieving the learning outcomes. During the presentations it is checked whether students are capable of orally discussing a problem from their specialist area and how it might be solved, placing it in the context of the subject.

Regarding the final thesis the peers got the impression that students can carry out an assigned task independently at the level of the qualification. To support the international mobility of students and graduates it is recommended to add an English abstract to the thesis in both programmes.

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

Regarding the English abstract added to the final thesis the peers see a missunderstanding in the comment of the university. These abstracts should be written by the students as part of the final thesis to facilitate the understanding of the thesis for foreign stakeholders. They confirm their preliminary assassement.

5. Resources

Criterion 5.1 Staff involved

Evidence:

- cf. staff handbook
- List of and information about research projects in the self-assessment report
- Self report

Preliminary assessment and analysis of the peers:
In total the teaching staff consists of 68 persons; 4 persons have a status comparable to full professors, 7 are associate professors and 3 are assistant professors. The rest of the staff is comparable to research fellows. Professors have to teach 12-15 hours a week and research fellows up to 20 hours a week. Additionally, there are external Professors from international universities teaching at EKSTU for several weeks each semester. In the last year 20 international professors were engaged in the field of geology.

From the view of the peers the composition and (specialist) training of the teaching body ensure that the intended learning outcomes are achieved by the time the degree is completed. The available contact hours (overall and for individual lectures) are sufficient for teaching and student supervision.

The professors are involved in different research projects financed by the government with about 400,000 Euro in total. Most international projects are related to Russian speaking areas and sabbatical semesters also are concentrated in this language environment. Nevertheless there are also scientific contacts to universities in Japan, Norway and Poland.

Criterion 5.2 Staff development

Evidence:

- Self report
- Discussion with the teaching staff

Preliminary assessment and analysis of the peers:
Regarding didactical skills almost all members of the teaching staff visit courses offered by the didactical teaching center of the EKSTU. Additionally the EKSTU arranges a competition for the teacher of the year.

Sabbatical semesters are conducted regularly by the professors.

Criterion 5.3 Institutional environment, financial and physical resources

Evidence:

- The self report describes the institutional environment as well as the financial and physical resources.
- During the audit the peers visit the laboratories, library and lecture rooms

Preliminary assessment and analysis of the peers:
The peers learned that geology is one of the central scientific fields in Kazakhstan and therefore one of the most important disciplines for the university.

The resources employed form a sustainable basis to achieve the intended learning outcomes. The peers found excellently equipped laboratories for research requirements and also the laboratories for student work have good equipments. Only the microscope equipment used by the students could and should be modernized. The rest of the infrastructure (e.g. library, IT provision, class rooms) meets the qualitative and quantitative requirements of the degree programmes.

The financing of the programme is assured by governmental funds, the student fees and special grants or scholarships for students. PhD students are completely financed by the government.

There is no defined cooperation for teaching imports with other universities in both programmes. Regarding research activities there are different contacts with international universities. Due to the language skills of the research staff most of these cooperation contracts were concluded with institutions in Russian speaking countries. Additionally, there are research projects with universities in Japan, Norway and Poland. From the view of the peers a further international orientation of the sub department would help the students to get experiences abroad.

The organisation and decision-making structures are 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 thank for the clarification that the foreign professors at the department not only are involved in research projects but also are part of the teaching staff. For the mobility of the students additional international cooperation like additional student exchange programmes would be very helpful and they confirm their preliminary assessement.

6. Quality Management: Further Development of Degree Programmes

Criterion 6.1 Quality assurance & further development

Evidence:

- Self report
- EKSTU Quality Manual
- EKSTU internal code of conduct

Preliminary assessment and analysis of the peers:

The peers found a quality assurance system which includes several arrangements on the different administrative levels. Analysis and evaluation of the effectiveness of the management of the university and its departments are carried out periodically. Assessment is divided into external and internal evaluations. External evaluation is based on the ranking of higher educational institutions at regional and international levels, the rating of educational programs, procedures of certification and accreditation of the university, quality management systems certification. Internal evaluation is carried out by a public hearing of reports of department heads at meetings of collegial management bodies (Academic Council, the Coordinating Council for the QMS, university administration, faculty councils, training and coordinating councils, etc.), internal audits, staff rating, administration and management personnel, subdivisions, departments and faculties, as well as through various surveys of customer satisfaction.

From the view of the peers a well working quality assurance system is in place. It is regularly further developed, and is designed to ensure the continual improvement of the degree programme. This quality assurance system enables the university to ascertain any failure to achieve goals, to check on the extent to which the set goals are achievable and reasonable and to draft suitable measures. Students and other stakeholders participate in quality assurance activities. Mechanisms and scopes of responsibility have been determined to ensure the regular further development of degree programmes.

Criterion 6.2 Instruments, methods and data

Evidence:

- Self report
- EKSTU Quality Manual
- EKSTU internal code of conduct
- Self report

Preliminary assessment and analysis of the peers:
The results of the survey "Teacher - through the eyes of students," suggests that EKSTU faculties are objective in assessing the academic achievement of students, respect them, are tactful, and comply with standards of teaching ethics. No negative trends have been identified. The introduction of new educational technology does not cause negative reactions among students.

Every year during the “Graduate Fair” employers are interviewed. In 2011, 50 representatives of enterprises and organizations took part in the survey. The analysis of the information revealed that, in the opinion of employers, EKSTU graduates have considerable knowledge and skills to autonomously deal with professional challenges without a long adaptation period (36.6%).

The peers find that the data collection methods are suitable for the aims of the university with regard to the degree programmes, in particular the monitoring of student numbers and progress as well as the achievement of the intended programme objectives.

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

The peers confirm their preliminary assessment.

7. Documentation & Transparency

Criterion 7.1 Relevant Regulations

Evidence:

- EKSTU DP 807-II-2012 "Students' Progress Midterm Control"
- EKSTU DP 808-II-2012 "Final Control and Students' Progress Assessment"
- EKSTU DP 704-I-2011 "Research and Scientific Production Activity"
- EKSTU DP 705-I-2012 "Forming of the Contingent for Master's and Doctor PhD Courses"
- EKSTU DP 706-II -2012 "Transfer and Restitution of D. Serikbaev EKSTU Students"
- EKSTU P 702.02-I-2011 "Regulations about Practical Training"
- EKSTU P 702.03-I-2012 "Regulations about School Laboratory" (appendix K)
- EKSTU R 708.01-I-2012 "Regulations about Organization of Masters' Scientific In-Depth Training".

Preliminary assessment and analysis of the peers:
The regulations for the programme encompass all key stipulations for admissions, the operation of the programme and graduation. The relevant regulations have been subject to a legal check and are in force. The regulations are accessible for consultation.

Criterion 7.2 Diploma Supplement and Certificate

Evidence:

- Diploma Supplement

Preliminary assessment and analysis of the peers:
Samples of the Diploma Supplements were provided to the peers as additional information to the self-assessment report before the on-site visit. They provide information about the study aims and learning objectives, nature, level, context, content and status of the studies, the success of the graduates as well as the composition of the final grade.

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

The peers appreciate the new diploma supplements given by the university together with the comment which includes even more detailed information about the programmes.

[…]

D Additional Documents

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

The new tables of curricula with the actual ECTS-Points (also regarding to the single semesters)

E Comment of the Higher Education Institution (02.06.2014)

2. Degree programme: Concept & Implementation

Criterion 2.1 Objectives of the degree programme 2.2 Learning Outcomes of the Programme

The peers saw the necessity to describe the aims and learning outcomes clearly separated for both programmes.

The goals and expected results for bachelor and master educational programs were divided and presented in tables. Tables 2.1, 2.2, 2.3, 2.4 are following.

Table 2.1 Goals for bachelor educational programme

Goal code	Goal statement
G1	Training graduates for productive activities in industrial enterprises in the field of geology, based on the theoretical and practical knowledge and skills
G2	Training graduates for experimental research activities, the formation of innovative thinking, the development of research techniques on the basis of domestic and international experience in relation to the challenges of geology production
G3	Training technical leaders for various units of businesses and organizations dealing with the effective functioning of the geology-mining industry
G4	Training graduates for project design activities in the field of geology, environmental management
G5	Formation of a graduate's human, social and personal values, preparing for self-study and the development of new professional knowledge and skills, continuing professional self-improvement in changing conditions of labor market

Table 2.2 Goals for master educational programme

Code of objective	Educational objectives
O1	Training masters for production activity in geology who have advanced professional knowledge on the basis of deepening acquired special, interdisciplinary knowledge at the first stage training
O2	Training masters for research activity, based on the newest achievements in theory and practice in geology
O3	Developing managerial skills, in the geology and exploration of mineral deposits providing training for professional managers at industrial enterprises
O4	Training teachers for the system of vocational, and higher, and postgraduate education, having profound professional pedagogic training
O5	Preparing masters for independent leaning and continuing professional development in geology, acquisition of intercultural communication skills (including communication in foreign languages).

The outcomes are expressed in terms of training bachelors' competence and designed on the basis of the Dublin descriptor Level 1 training (bachelor's degree).

Table 2.3 Intended learning outcomes of bachelor educational programme

The outcome code	learning outcome (a graduate must be competent)	Elements of curriculum (module, course, production practice, projects etc)
1	2	3
Professional (special) competences		
P1	Ability to apply deep fundamental and special, nature-scientific and professional knowledge in professional activity.	G1 GMRK 206; GR 207; Chem 106; Geod 107; MB 305
P2	Ability to apply present methods and techniques and implement new ones for substance researching, carrying out prospecting, engineering process solutions. Search for new ore production practices and its processing.	G2 CMP 202; GIS 208; GD 104; TRO 306
P 3	To solve issues of functioning and supply of geological enterprises. To capture, analyse and integrate fund, geological, geochemical,	STG 203; GeoCH 209; SEMD 301; DCGM 304

	geophysical and other data, to develop prognostic-exploration models of various geological payable deposits, formulate problems of geological and exploratory works.	
P4	Ability to do estimated calculations. To have skills to develop projects for carrying out geological exploration. To have vision of global ecological problems in the connection with economic development of human society, main principles of rational subsoil usage and geo resources of the Republic of Kazakhstan management; to be able to estimate influence of industrial project on the environment.	G1 GHG 201; IEBMP 204; MDG 302; Hyd 303
P5	Ability to be mobile and acquisitive of improving machinery and technologies; of applying scientific and technical achievements; ability to estimate innovation potential of output products and their competitiveness.	G5 BEA 205; Psy; HPS
Basic cultural (social) competences		
P 6	Ability to apply basic and special knowledge as well as knowledge of mathematics, natural sciences, human and economic sciences and complex engineering activity on the basis of integral system of scientific knowledge about visual environment for information processing and analysis of geology data for solving typical professional problems.	G3 HK 401; Eco 405; Math 101; Phys 103
P 7	To know foreign languages at the level that enables to work in international team	Ц5 K(R)L 402; FL 403; SS 2224
P 8	To demonstrate knowledge of law, social, ecological and cultural aspects of complex engineering activity, awareness in the issues of	G3 OP 4109; ESAI 105

	health care, life and labour safety at mining enterprises.	
P 9	To demonstrate understanding the nature and value of the information in the development of modern geology, mastering main methods, ways and means of obtaining, storing and processing information	G 3 CS 102
P10	To self-study and continually improve their skills within the whole period of professional teaching activity.	G 5 FL; IPHE;

Learning outcomes 2 training (Master) are expressed in terms of competence of masters and designed on the basis of the Dublin descriptor Level and meet the following acquisition of a graduate master's abilities and skills:

Table 2.4 Intended outcomes of master educational programmer

Outcome code	Learning outcome (a graduate must be competent)	Elements of curriculum (module, course, production practice, projects etc)
1	2	3
Professional (special) competences		
P1	To apply special professional, out – and intersubject knowledge for solving problems of providing mineral- raw-material base of Kazakhstan and rational nature management.	G1 GMRK 206; GR 207; Chem 106; Geod 107; MB 305
P2	To improve present methods and techniques and implement new ones for substance researching, carrying out prospecting, engineering process solutions. To carry out laboratory and experimental geological mineralogical and geochemical research with the usage of up-to-date computer technologies.	G2 CMP 202; GIS 208; GD 104; TRO 306
P3	Skills to choose optimal ways of solving prob-	G3

	lems, deepening of methodological approach for solving nonroutine problems and tasks, ability to estimate their results critically by using analytical intersubject approach.	MOO; GeoM; Ped
P 4	Ability to apply up-to-date methods for development of low-waste, energy-saving and environmentally friendly technologies for mining operations and resource development that provide life safety.	G3 MRAD; MPG; MDK
P 5	Deepening of special intersubject and outsubject knowledge obtained at the first professional educational stage, completing this knowledge for the account of enlarging methodical and analytical research vehicle, acquiring teaching skills.	G4 HGRMD; MH; MG; LR; MXRMR
P 6	Ability to be mobile and acquisitive of improving machinery and technologies; of applying scientific and technical achievements; ability to estimate innovation potential of output products and their competitiveness.	G5 BEA 205; Psy; HPS
Basic cultural (social) competences		
P7	To know a foreign language at the level that enables to work in the international team, to develop documentation, present and defend results of innovation activity in the sphere of geological exploration.	G5 K(R)L 402; FL 403; SS 2224
P8	To work effectively alone, as a member and a leader of the team consisting of specialists in different fields and of different qualifications, to demonstrate responsibility for the work results and readiness to follow enterprise corporate culture.	G3 SOZ 3107
P9	To demonstrate understanding the nature and	G 2

	value of the information in the development of modern geology, mastering main methods, ways and means of obtaining, storing and processing information, using up-to-date technical means and information technologies for solving communication problems.	CS 102
P14	To self-study and continually improve their skills within the whole period of professional teaching activity.	G 4 FL; IPHE;
P 15	Ability to carry out scientific work individually, to organize, carry out and manage complicate projects, to get scientific, technical and social competences.	G 2 Phil 104; ECO 405

Supposed goals and learning outcomes are currently available for all interested people who participate in educational program on Educational Portal of D.Serikbayev EKSTU, as well as in the project of appendices to graduation theses of bachelors and master students (Appendix 3).

Criterion 2.3 Learning outcomes of the modules/module objectives

According to peers comments modules to bachelor and master educational programs have been overviewed and adjusted to the common form comprising information about goals, outcomes, and content of a discipline. The title of the module "Tectonical Geology" was an error of technical nature. The present module title is "Geological mapping" (Appendix 1.1,). Module "Actual problems of geology" refers to compulsory disciplines stated in State Standard of the Republic of Kazakhstan. (Appendix 1.2).

Generally module content and goals are determined by standard curriculums. We have included some additional information. Besides module descriptions are completed with English language literature.

Criterion 2.4 Job market perspectives and practical relevance

According to the State Standard of the Republic of Kazakhstan practical training of geologists reflected in bachelor educational program is realized through laboratory work and different field practices. According to the State Standard and curriculums (Appendix 2.1) bachelors of the specialty "Geology and exploration of mineral deposits" have to go through training geological practice **after the first course – the 2-d term, 3 weeks**. The first week is geodesic practice and further two weeks within East Kazakhstan, when they attend typical deposits. They study the following objects:

-Novo-Akhmirovskoye deposit of lithium granites;

- Area Karauzek including bastard granite, gabbrides of Priirtyshsky complex (stannum, raw material for production of mineral cotton);

- Area Chechek (granite-gneiss of Irtysh shear zones, Chechek belt of mirolyubsky complex P_2 - T_1);

- Ust-Kamenogorsk tungsten deposit;

- Sogrinsky geologic cross-section for studying ancient metamorphic formations of Irtysh shear zone;

- Nikolayevskoye copper-zinc deposit.

After the second course – term 4, for 6 weeks – field geological practice is carried out on geological ground of EKSTU. Students go through field routes, survey in the 1:50000 scale, take samples in prospecting pits and outcrops. As a result they plot the map of the area on a scale of 1 in 50000 and make a collection of rocks.

After the third course – term 6, for 6 weeks – students go through industrial practice directly at the deposits (Ridder – Sokolnoye copper and sulphide deposit, Irtyshskoye - complex deposit, Bakyrchik gold and sulphide deposit, Suzdalskoye – gold bearing crust of weathering, Karazhira - coal strip mine, Akzhal quartzous-veined, gold bearing deposit, Tishinskoye – complex deposit, Mallevskoye copper and zinc deposit, Artemyevskoye copper zinc deposit, Taganskoye – deposit of bentonites and others)
D.Serikbayev EKSTU intend to procede work for expanding excursion outes fort he first and second-year students during educational geological practices.

Criterion 2.5 Admissions and entry requirements

From the view of the peers for students exchange programmes to increase the mobility of the students there are needed rules for the recognition of activities completed at all other national and international higher education institutions. They recommended to establish such regulations.

EKSTU have rules that cover external recognition of learning outcomes. They ensure that the results are able to be achieved at the specified level. Rules for the recognition of external study attainments/achievements are stipulated in the EKSTU document “Transfer and Restitution of D. Serikbaev EKSTU Students”. This document is developed in accordance with Normative documents of RK Education and Science Ministry “ Students transfer and reinstatement rules” for the universities of Kazakhstan. In 2013 the normative document “Passing procedure of ECTS credits” which the peers mentioned. This document specify rules of passing and transferring

credits in academic mobility. At present the university apply this rule. But as the report was rendered in 2012, this document wasn't mentioned in the current self-report.

Criterion 2.6 Curriculum/Content

The peers saw that in general the curriculum makes it possible to achieve most of the intended learning outcomes by the time the degree is completed. But the peers wonder how the study aims could be fulfilled in total regarding the large ratio of elective courses.

According to State Standards of RK curriculum (Appendix 2.1). section «The Bases of special disciplines» compulsory components comprise the following disciplines: General and Historical Geology, Crystallography and mineralogy, Petrography, Structural geology, Economics and production organization, Fundamentals of minerals management, Geology and mineral resources of Kazakhstan. In order to provide all the students with the access to studying majors in al specialties (in particular geology), some of the disciplines of elective course are included into University elective component by the decision of academic council, but they are compulsory for studying according to educational programs. University elective component can regularly be reconsidered due to employers' requirements or specific character of the educational program. Thus the section «The Bases of special disciplines» includes the following disciplines Litology, Geomorphology, Geological mapping, Geotectonics, Regional Geology, Geochemistry, Geochemical methods of mineral deposits exploration. Curriculum section "Improvement of special knowledge (specialization)" the discipline "Industrial types of mineral deposits" refers to University elective component. These changes are reflected in the corrected version of the curriculum (Appendix 2.1). Thus it's possible to provide achievement of goals and expected outcomes of the educational program.

Criterion 3.1 Structure and modularity

The peers saw that the size and duration of the modules allow students to combine them flexibly. The peers learned that the high ratio of elective courses with round 40% of the curricular is based on governmental regulations. On the one side they appreciate the flexibility for the students on the other from their point of view the elective courses content geological basic disciplines which should be part of the core curriculum (compare chapter 2.6, above). In general they would prefer a different arrangement of compulsory and elective courses regarding volume and contents. But they understood that the so called extra subject modules must be compulsory with respect to governmental regulations.

This recommendation has been partly implemented due to introduction of university elective component which is compulsory for students of educational program Geology and exploration of mineral deposits. (compare chapter 2.6, above)

The peers noted that it would be helpful for the students to get more support by the university to organize studies abroad.

In 2013 and 2014 RK Ministry of education and science implement the program of students and master students academic mobility for studying abroad. In 2013 the university was provided 10 million tenge for this purpose. On the 21-st of May it was provided 3,9 million tenge.

It will enable to increase number of students and master students who will have the opportunity spend a semester at another higher education institution or on a practical placement abroad.

Criterion 3.2 Workload and credit points

For the Master's degree programme the university offered a new curricular structure with revised ECTS points (Appendix 2.2)

Criterion 3.3 Educational methods

The peers wonder about the classical literature given in some module descriptions and its limitation to Russian language literature. They recommended to amend the list of literature in all module descriptions in order to make it more usable for students and to include English language literature.

According to peers recommendations reading lists in the modules descriptions were completed with English language educational literature which is available nowadays. (compare chapter 2.3, above), see Appendix 1.1 and Appendix 1.2

Criterion 3.4 Support and advice

According to peers' opinion students must be provided with more information and actively supported for studying or going through practice in a foreign university.

The university contributes to academic mobility, thus International cooperation Department informs students about available programs, the English Club was organized where the students can improve their knowledge of English.

As it has been mentioned above (see chapter 3.1, above) the university has some opportunities to give financial support to students for studying in a foreign university abroad during a term. Students can participate in the program of traineeship and apprenticeship abroad within the IESTE framework in 2013 and 2014. RK Ministry of science and education implements academic mobility program for bachelors and master students for their studying abroad. As it has been mentioned above in 2013 the university was provided 10 million tenge for this purpose. On the 21-st of May it was provided 3,9 million tenge.

According to RK government regulation №110 of January 19, 2012 “Approval of rules for transferring and reinstatement of students of every type of educational organization” (with amendments and additions) every bachelor and master student has the opportunity to study abroad at his own expenses with further credits transfer of obtained study skills.

Criterion 4 Exams: System, concept & implementation

The peers noted that for supporting the international mobility of students and graduates it is recommended to add an English abstract to the thesis in both programs.

Upon the recommendation of peers abstracts to the thesis were added in both programmes (DIPLOMA SUPPLEMENT for bachelor и and master) (Appendix 3)

Criterion 5.3 Institutional environment, financial and physical resources

The peers noted that the resources employed form a sustainable basis to achieve the intended learning outcomes. They found excellent equipped laboratories for research requirements and also the laboratories for student work have good equipments. Library, IT provision, class rooms) meets the qualitative and quantitative requirements of the degree programmes. Only the microscopes used by students are not completely corresponding with the actual technological standards. So during the classes on Petrography and Mineralogy students are provided with 10 modern microscopes produced In Moscow and St. Petersburg (see table 5.3.1).

Table 5.3.1

№ п/п	Item		Year of production	Number
1	Microscope Altami Polar	14010178	2010	1
2	Microscope Altami Polar	14010179	2010	1
3	Microscope Altami Polar	14010180	2010	1
4	Microscope Altami Polar	14010181	2010	1
5	Petrographic microscope "Polam"R		2008	1
6	Petrographic microscope "Polam"R		2008	1
7	Petrographic microscope A		2012	1
8	Petrographic microscope A		2012	1
9	Petrographic microscope A		2012	1
10	Petrographic microscope A		2012	1
		ВСЕГО:	10	

The peers noticed that there is no defined cooperation for teaching imports with other universities in both programmes.

The sub department actively develop international links. In fact we cooperate with leading professors and scientists from Poland, University of Wrocław, the university of Krakow; Tur-

key, Akdeniz university; Great Britain, The Natural History museum in London; Russia: Tomsk technical university, Moscow state mining university, V.S. Sobolev Institute of Geology and Mineralogy (Novosibirsk); Japan, Akita university; Ukraine (Kiev, Lvov) and others. The teachers and scientists of these universities arrive inour university every year for lecturing their courses to bachelor and master students – geologist.

The sub-department continually holds leading position in the university rating and general rating according to Bologna Process in Kazakhstan (Appendix 4). In March 2014 Prof.,PhD Reimar Seltmann and Prof.,PhD Alla Dolgopolova lectured in the university. It is inteded to invite the professor Prof. Prof.h.c. Dr.Dr.h.c.mult. Carsted Drebenstedt from Freiberg University of Mining and Technology (Germany)

There are also plans to invite professors from universities of Germany, Great Britain etc in 2015. Britain and Kazakhstan seminar was held in D.Serikbayev EKSTU since March 11 till March 15, 2014 within the framework of British Council grant. The theme of the seminar “Mineral resources management and strengthening of scientific foundations for improvement of mining”. Twelve young scientists and from Britain fourteen young candidates of science, doctorate students, researchers from Astana, Karaganda, Almaty and Ust-Kamenogorsk participated in thematic science sessions.

The issues of building career within the framework of cooperation between Great Britain and Kazakhstan were discussed during the seminar, as well as the issues of possible sources of financing joint international programs from the side of Great Britain Government and British Council.

Criterion 6.1 Quality assurance & further development

Each year, the Center of the Bologna process and academic mobility in RK held Rating of Bachelor’s and Master’s Degree Programmes.

In 2012, the Bachelor’s Degree Programmes Geology and exploration of mineral deposits took 1th (out of 13 high schools) (in 2009 took 3th, 2010 – 2nd, 2011 – 2th rank).

Rating of educational master’s programs was first held in February - March 2013 and the Master’s Degree Programmes EKSTU Geology and exploration of mineral deposits took 1th.

Criterion 7.2 Diploma Supplement and Certificate

Diploma Supplement of Bachelor’s and Master’s Degree Programmes in Appendix 3.

F Summary: Peer recommendations (11.06.2014)

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

Degree Programme	ASIIN seal	Maximum duration of accreditation
Ba Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019
Ma Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019

Requirements

For all degree programmes

A 1. (ASIIN 2.2) The intended aims and learning outcomes must be accessible to all stakeholders.

A 2. (ASIIN 2.3, 2.4) All Module descriptions have to give a subject specific description of the goals and content and of the practical parts of each module.

Recommendations

For all degree programmes

E 1. (ASIIN 2.3) It is recommended to amend the list of literature in all module descriptions in order to make it more usable for students and to include English language literature.]

E 2. (ASIIN 3.4, 5.3) It is recommended, to intensify the international cooperation of the department to get more possibilities of international studies for the students.

E 3. (ASIIN 4) It is recommended to add an English abstract to the thesis.

E 4. (ASIIN 2.5) It is recommended to establish rules for the recognition of activities completed at other national and international higher education institutions.

For the Bachelor's degree programme

E 5. (ASIIN 2.6) It is strictly recommended to ensure that all students get abilities in geological core disciplines (geological mapping, litology, geotectonics, regional geology, geochemistry).

E 6. (ASIIN 2.4) It is strictly recommended that the Students get more practical experiences in field work, especially with different types of mineral deposits.

G Comment of the Technical Committee 11- Geosciences (12.06.2014)

Assessment and analysis for the award of the ASIIN seal:

In general the Technical Committee follows the assessment of the peers. But from its point of view for geologists it is essential to have at least basic knowledge of the core disciplines lithology, tectonics, regional geology and geochemistry as well as adequate practical experiences in field work, especially with regard to geological mapping. Therefore the Technical Committee proposes to modify the corresponding recommendations of the peers into requirements. Additionally it proposes to combine the recommendations to intensify international cooperation and to add English abstracts to the thesis to clarify the intention of theses recommendations.

The Technical Committee 11 – Geosciences recommends the award of the seals as follows:

Degree Programme	**ASIIN seal**	**Maximum duration of accreditation**
Ba Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019
Ma Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019

Requirements

For all degree programmes

A 1. (ASIIN 2.2) The intended aims and learning outcomes must be accessible to all stakeholders.

A 2. (ASIIN 2.3, 2.4) All Module descriptions have to give a subject specific description of the goals and content and of the practical parts of each module.

For the Bachelor's degree programme

A 3. (ASIIN 2.6) It must be ensured that all students get abilities in geological core disciplines (lithology, tectonics, regional geology and geochemistry).

A 4. (ASIIN 2.4) Students must get more practical experiences in field work (geological mapping, mineral deposits).

Recommendations

For all degree programmes

E 1. (ASIIN 2.3) It is recommended to amend the list of literature in all module descriptions in order to make it more usable for students and to include English language literature.]

E 2. (ASIIN 3.4, 5.3) It is recommended, to intensify the international cooperation of the department and to establish international student exchange programmes. In this context it is recommended to add an English abstract to the thesis.

E 3. (ASIIN 2.5) It is recommended to establish rules for the recognition of activities completed at other national and international higher education institutions.

H Decision of the Accreditation Commission (27.06.2014)

Assessment and analysis for the award of the ASIIN seal:

The Accreditation Commission follows the argumentation of the technical Committee and assumes the proposed changes of the requirements and recommendations. Due to the fact that

Kazakhstan signed the so called Lisbon Convention in 1997 and ratified it in 1998 the Accredition Commission adds a requirement regarding the realization of this convention.

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

Degree Programme	ASIIN seal	Maximum duration of accreditation
Ba Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019
Ma Geology and Exploration of Mineral Deposits	With requirements for one year	30.09.2019

Requirements

For all degree programmes

A 5. (ASIIN 2.2) The intended aims and learning outcomes must be accessible to all stakeholders.

A 6. (ASIIN 2.3, 2.4) All Module descriptions have to give a subject specific description of the goals and content and of the practical parts of each module.

A 7. (ASIIN 2.5) Rules for the recognition of study courses completed at other national and international higher education institutions must be defined corresponding to the Lisbon Convention.

For the Bachelor's degree programme

A 8. (ASIIN 2.6) It must be ensured that all students get abilities in geological core disciplines (lithology, tectonics, regional geology and geochemistry).

A 9. (ASIIN 2.4) Students must get more practical experiences in field work (geological mapping, mineral deposits).

Recommendations

For all degree programmes

E 1. (ASIIN 2.3) It is recommended to amend the list of literature in all module descriptions in order to make it more usable for students and to include English language literature.]

E 2. (ASIIN 3.4, 5.3) It is recommended, to intensify the international cooperation of the department and to establish international student exchange programmes. In this context it is recommended to add an English abstract to the thesis.