Expert's Report on the Accreditation of Study Programs at Kazan Federal University, Russia 1496-xx-1



Study Program	Degree	Program Dura- tion	Type of Pro- gram	maximum annua intake
Direction: Physics Condensed Matter Physics	Master's (Magistr)	2 years	full time	10
Direction: Radiophysics Physics of Magnetic Phenomena	Master's (Magistr)	2 years	full time	10
Direction: Biology Neurobiology	Master's (Magistr)	2 years	full time	5
Direction: Chemistry Chemoinformatics and Molecular Modeling	Master's (Magistr)	2 years	full time	10

Accreditation contract signed on: April 15, 2015

Date of site visit: 16-19 June, 2015

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Hanover, 14 August, 2015



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I Final Vote of the Expert Panel and Decision of the Accreditation Commission

1 Decision of the ZEvA Commission for International Affairs (KIA)



I. Final Vote of the Expert Panel and Decision of the Accreditation Commission

1. Decision of the ZEvA Commission for International Affairs (KIA)

The KIA follows the experts' report and recommendations and takes into account the response of the university.

In due consideration of the requirements of the European Standards and Guidelines for Quality Assurance in Higher Education (ESG), the accreditation of the study programs is awarded with the following conditions:

- > The quality assurance of the study programs must include a systematic monitoring of the student workload required for each teaching unit or module.
- All relevant information about the programs must be made available in English. In particular, the profile, contents and intended learning outcomes of the programs must be made transparent. To this end, a course catalogue based on the recommendations of the ECTS Users' Guide should be made available. Also, information regarding the rules of application, admission, selection and examination must be given in English.
- Transparent regulations and procedures for the transfer and recognition of credits must be presented. If no formal regulations exist yet, they must be developed based on the requirements of the ESG and the Lisbon Convention.

The conditions must be fulfilled within a period of 18 months. Failure to comply with the conditions in due time will result in withdrawal of the accreditation.

The KIA accredits the Master's program "Physics: Condensed Matter Physics" at Kazan Federal University for the duration of five years with the above mentioned conditions.

The KIA accredits the Master's program "Radiophysics: Physics of Magnetic Phenomena" at Kazan Federal University for the duration of five years with the above mentioned conditions.

The KIA accredits the Master's program "Biology: Neurobiology" at Kazan Federal University for the duration of five years with the above mentioned conditions.

The KIA accredits the Master's program "Chemistry: Neuroinformatics and Molecular Modeling" at Kazan Federal University for the duration of five years with the above mentioned conditions.

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2. Final Vote of the Expert Panel

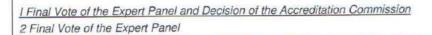
2.1 General Aspects

2.1.1 General Recommendations:

- > The teaching faculty should get a chance to take foreign language classes and receive didactic training on a regular basis.
- In each study program, there should be at least one annual meeting of all faculty and students to discuss issues of quality and quality improvement.
- > The quality policy and the mission statement of the university should be available online, both in Russian and in English.
- > The experts recommend a more gradual shift from Russian to English as the main language of instruction.
- All key textbooks should be made available to the students in English. Students should at least know where to get English learning materials and publications. Also, students should be more thoroughly encouraged to practice their spoken English in class. For example, talks or poster presentations should be given in English, in order to prepare students for their future tasks as researchers in international environments. Special emphasis should be placed on developing the students' writing skills in English.
- > The process of application and admission should be made more transparent, especially for prospective students from outside Russia.
- The intended learning outcomes of the study programs should be documented online and/or in course catalogues.

2.1.2 General Conditions:

- The quality assurance of the study programs must include a systematic monitoring of student workload.
- All central information concerning the programs must be made available in English. In particular, the profile, contents and intended learning outcomes of the programs must be made transparent. To this end, a course catalogue based on the recommendations of the ECTS Users' Guide should be generated. Also, information regarding the rules of application, admission, selection and examination must be given in English.
- Transparent regulations and procedures for the transfer and recognition of credits must be presented. If no formal regulations exist yet, they must be developed based on the requirements of the ESG and the Lisbon Convention.





2.2 Condensed Matter Physics

2.2.1 Recommendations:

The experts recommend further streamlining and focusing the curriculum on those disciplines which are of direct relevance to the specialization. In particular, the course on cosmology should be replaced in favour of additional language classes.

2.2.2 Recommendation to the ZEvA International Accreditation Commission:

The expert group recommends the accreditation of the Master's program in Condensed Matter Physics for the duration of five years, provided the above listed conditions are met.

2.3 Physics of Magnetic Phenomena

2.3.1 Recommendations:

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2.3.2 Recommendation to the ZEvA International Accreditation Commission:

The expert group recommends the accreditation of the Master's program in Physics of Magnetic Phenomena for the duration of five years, provided the above listed conditions are met.

2.4 Master's Program in Neurobiology

2.4.1 Recommendations:

A survey lecture (or series of lectures) should be offered to provide students with a general overview of the topic of Neurobiology.

2.4.2 Recommendation to the ZEvA International Accreditation Commission:

The expert group recommends the accreditation of the Master's program in Neurobiology for the duration of five years, provided the above listed conditions are met.

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2.5 Chemoinformatics and Molecular Modeling

2.5.1 Recommendations:

2.5.2 Recommendation to the ZEvA International Accreditation Commission:

The expert group recommends the accreditation of the Master's program in Chemoinformatics and Molecular Modeling for the duration of five years, provided the above listed conditions are met.





II. Evaluation Report of the Expert Panel

Introduction: Purpose, Design and Context of the Accreditation Procedure

This evaluation report is part of an international accreditation procedure jointly organized by the German agency ZEvA and the Russian agency AKKORK on the basis of a cooperation agreement closed in 2014.

It is the purpose of the accreditation procedure to assess the quality of four Master's programs offered by the University of Kazan, Russia, against international standards. The assessment is based on ZEvA's "Assessment Framework for the Evaluation of Study Programs" as laid out in the "Manual for Evaluation and Certification of Study Programs". This assessment framework is in part based on the "European Standards and Guidelines for Quality Assurance in Higher Education (ESG)" (ENQA 2009), the "Framework for Qualifications of the European Higher Education Area" (2005) and the "ECTS Users' Guide" (European Communities, 2015).

For the purpose of assessing the programs, the university was asked to hand in a self-report, describing in detail the institution and the programs to be assessed, covering all aspects of ZEvA's assessment framework. Concurrently, the agencies assembled a review panel of three German and four Russian experts, including one student representative.

After receiving the self-report, the panel members met in Kazan for a three-day site-visit. During the site-visit, the expert panel had the opportunity to speak with the university's management and teaching staff as well as students and graduates of all study programs. Also, the members of the expert panel were given a tour of the university's facilities, including laboratories and the new student village.

This report is based on the experts' assessment of the university's self-report and their findings during the site-visit. It will serve as a basis for ZEvA's Commission for International Affairs to decide on the accreditation of the university's study programs. In the case of a positive decision by the Commission, ZEvA will award its quality seal for a limited time period, after which the university can apply for re-accreditation.

The experts would like to thank the leadership board, faculty, staff and students of the University of Kazan for the friendly and open atmosphere during the on-site talks. A special thanks is due to the project managers of AKKORK and the interpreters for their assistance and the efficient organization of the site-visit.

Il Evaluation Report of the Expert Panel

1 Governance, Management and Profile of the University



Governance, Management and Profile of the University

Organizational Structure and Mission of the University

Kazan Federal University (KFU) was founded in 1804 as one of the first higher education institutions in Russia. Ever since, it has been an important centre of culture, research and innovation in the Volga region. Today, with about 40.000 enrolled students and over 3.000 members of faculty the university counts among the largest higher education institutions in the country. KFU offers the wide spectrum of academic disciplines of a classical university, ranging from Medical Studies over Natural Sciences, Psychology, Law and Economics to the Arts and Humanities. In 2010, it was granted the status of Federal University, which led to a significant increase in funding and institutional autonomy, for example regarding the design of study programs.

In organizational terms, Kazan Federal University is divided into several faculties (Natural Sciences, Physics and Mathematics, Humanities & Social Sciences), each of which in turn consists of a number of institutes and departments. "Specialist" degree programs (comparable to the pre-Bologna diploma programs in Germany) exist side by side with the new Bachelor/Master system. About one third of the students are enrolled at the faculties of Natural Sciences (especially in the fields of Medicine and Pharmacy) and Mathematics/Physics, another 25% at the Humanities faculty, which also hosts the Law Faculty, the Institute of Psychology and Education and the Institute of Management, Economics and Finance.

The Academic Council functions as the central self-governing body of the university. The council is elected for a period of five years and consists of the rector, the vice-rectors, the heads of the institutes and other members. Also, there is a Supervisory Board consisting of representatives of external stakeholders (i.e. state/governmental authorities and representatives of the employment sector).

The university has defined a number of focus areas that are meant to function as major drivers of growth and competitiveness over the next years (Biomedicine and Pharmaceutics, Oil Extraction, Refining and Chemistry, Infocommunications and Aerospace Technologies, Advanced Materials, Social and Humanitarian Studies). To this end, the university has founded special centres of excellence and Open Labs in cooperation with international partners from industry and academia.

KFU has defined its goals and mission in its Charter and in a mission statement, both of which are publicly available. In its self-report, the university lists the following main objectives, which are also part of the Charter:

- meeting the needs of the person in intellectual, cultural and moral development through higher and postgraduate education;
- meet the needs of society and the state in qualified specialists with higher education and academic staff;
- organizing and conducting fundamental and applied scientific investigations on important issues;
- preparation of academic staff through postgraduate, doctoral and candidate programs;
- 5) retraining and advanced training faculty members, senior officials, experts on the profile of the University;



1 Governance, Management and Profile of the University



- accumulation, preservation and increase of moral, cultural and scientific values of society:
- 7) instilling a sense of patriotism, love and respect for the people, national traditions and spiritual heritage of Russia, of respect for the reputation of the University;
- 8) formation of students' civic position, the development of responsibility, self-reliance and creativity:
- 9) dissemination of knowledge among the population, improving its educational and cultural level.

The experts find that the institutional profile and mission of KFU are clearly defined and well described. The strategic goals of the university, as well as its special position within the Russian higher education system have become fully transparent in the course of the accreditation procedure.

Student Mobility and Internationalisation

As laid out in the self-report, internationalisation is an integral part of the university's mission:

Kazan University is focused on international cooperation, is committed to the highest level of world achievements in various fields. The University participates in international programs and projects, develops its connections with universities, with various institutions, with scientists and specialists from all over the world. Kazan University is opened to students and researchers of all countries, attracts the intellectual elite and encourages exchanges. Academic potential of the university is always open to other regions of Russia, near and far abroad.

KFU has forged numerous co-operations with higher education institutions and companies around the globe, most of which are located in Europe and Asia. The percentage of foreign students has significantly increased within the last few years (with about 50% of all international students coming from former Soviet Republics, as e.g. Kazakhstan, Uzbekistan, Azerbaijan etc.). It is the goal of the university to increase the percentage of international students from the current 6% to 15% by the year 2020. By then, the percentage of international faculty is expected to reach 12%.

In addition, KFU supports the mobility of its own students and staff in various ways, as, for example, participation in student exchange programs, joint Bachelor, Master and doctoral programs with universities abroad, programs taught in English, research internships, joint research projects etc.

By and large, the experts are convinced that KFU will succeed in achieving its goals in the field of internationalisation. During the on-site talks, it became very clear that a high degree of internationalisation has already been reached: in particular, the panel members were very impressed by the extensive international experience and outlook of both faculty and administrative staff. The four Master's programs that are the subject of this review procedure are only one of numerous measures taken to put the university's internationalization strategy into practice (cf. program-related chapters below).

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1 Governance, Management and Profile of the University



However, the peers still see room for optimization. In particular, it has not become fully clear which rules and criteria for the recognition of credits earned at other higher education institutions in Russia are applied at KFU (not counting joint programs, which are usually based on a general agreement regarding the transfer of credits between institutions). According to the self-report, formal regulations do exist, but were, however, not presented to the panel.

The experts are of the opinion that binding regulations for credit transfer and recognition need to be established in order to facilitate student mobility through reliable and transparent standards. In particular, it should be ensured that the principles of the Lisbon Convention are adhered to at all times, as required by the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). Even though the experts are aware that from a purely formal point of view, the ECTS system has not been introduced in Russia, the Russian credit system has so much in common with it that the application of Bologna key principles and instruments (credit recognition based on learning outcomes, Learning Agreements with partner universities abroad etc.) should not cause any major problems.

In order to gain a clearer picture of the principles for credit recognition applied at KFU, the experts kindly ask the university to provide them with a document containing the official regulations that are currently applied (in English translation). If no such formal regulations exist, they must be established based on the above mentioned principles.

Equal Opportunities

As Kazan Federal University is situated in a multi-ethnic and multi-religious environment, the principles of inclusion, equal opportunities and tolerance are an integral part of its institutional ethos. In its self-report, the university has described the measures taken to create equal opportunities and gender equality at all levels. Equal opportunities are also part of the mission statement of KFU.

There are various forms of support for disabled students. For instance, they may take distance learning classes if unable to attend classes on campus. Wherever possible, a barrier-free environment is created. Disabilities are also accounted for in admission and examination procedures, and financial support can be provided in the form of special grants and scholar-ships. If necessary, learning paths are adapted to the individual needs of disabled students.

The International Office of KFU provides special advisory and support services for students from outside Russia.

An active Women's League promotes the issue of gender equality on campus through various activities, as e.g. the organization of conferences and seminars, research activities, charity etc.

All in all, the experts come to the conclusion that equal opportunities are established and promoted at KFU to a satisfactory extent, even though there seems to be no official policy providing a basis for this. However, binding regulations are provided where necessary, for example as part of general admission and assessment regulations.

II Evaluation Report of the Expert Panel 2 Assessment of the Study Programs



2. Assessment of the Study Programs

2.1 Common Features and Strategic Dimension of the Programs

The four Master's programs for which KFU is seeking accreditation belong to different fields (Physics/Biology/Chemistry), but also have some central features in common, as, for instance, basic structural aspects: all four programs can be absolved within two years and lead up to the degree of "Magistr" (equivalent of a Master's degree). Applicants must have successfully completed either the equivalent of a Bachelor's program or a "specialist" program in the same or a closely related academic discipline. All programs are based on a credit system that strongly resembles ECTS: at the completion of each educational unit, students are awarded a certain number of credit points, depending on the average number of hours required to complete the unit. As a general rule, one credit point equals 36 academic hours (or 27 clock hours, respectively). In total, 120 credit points are awarded for each program.

The programs are divided into two so called "cikly" (educational "cycles"), as prescribed by Federal Educational Standards. The majority of courses in the general scientific cycle impart basic subject-related knowledge and methodical skills, as e.g. academic writing, data analysis or foreign language skills, lab management, IT skills, teaching skills etc., while the professional cycle includes more specialized courses on the core contents of the program. In addition, all curricula encompass continuous practical research work in the laboratory and finish with a thesis and the final state examination.

Furthermore, all four programs are supposed to be taught only in English from the academic year 2015/16 onwards. All programs have already existed for some time (the Physics programs date back to the mid-1990s, while the other two programs were only set up about 3-5 years ago). Due to its double degree option, the Master's program in Chemoinformatics has had a clear international profile from the beginning, while the other three programs have been primarily directed at Russian students until now. By introducing English as the standard language in class, KFU aims at increasing its attractiveness for students from non-Russian speaking countries, which is in turn part of the university's general strategy of internationalization. Also, the thematic focus of the programs is directly linked to the university's priority development areas mentioned in Chapter 1.

In principle, the peers appreciate the new language policy for the programs as plausible and promising. Nevertheless, it seems that the shift from one language to another should not be quite as abrupt and thorough as planned by the university, especially as not all members of the teaching faculty seem to be sufficiently prepared for this yet (cf. Chapter 2.4). Therefore, the peers recommend a more gradual transition, i.e. testing the concept by introducing English only in a few selected courses first and, in case of good results, extending it to the entire program.

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2.2 Intended Learning Outcomes

KFU has submitted detailed course descriptions for the four study programs, which include outlines of the teaching contents and objectives of each educational unit. Course descriptions are also available to the students via the responsible departments/chairs and/or the website of the university. However, a comprehensive course catalogue for each program does not seem to exist yet.

Based on the requirements of Federal State Educational Standards, intended learning outcomes (ILOs) have also been formulated for each educational cycle and for each program as a whole. These include a set of various professional and generic skills, the most important of which are laid out in the self-report of the university.

The common link between the programs is their strong focus on research: all programs primarily aim at preparing students for future careers in science, research and development, either in academia or in industry. Students are to deepen their knowledge and acquire the necessary methodical skills in their chosen discipline to be able to conduct their own research projects autonomously and/or as part of a team (at national or international level). Also, they are expected to acquire a number of relevant key competencies, as e.g. foreign language skills, academic writing skills, the ability to present and defend research results in front of colleagues, as well as related IT and teaching skills. All of these skills are not only meant to contribute to the students' future employability, but also to their general personal development into leading research personalities.

The experts conclude that competency-based learning outcomes have been formulated for the programs and their teaching components which are largely compliant with the Master's level descriptors of the Framework for Qualifications of the European Higher Education Area (Dublin Descriptors) and reflect most of the four purposes of higher education as defined by the Council of Europe (preparing students for their future careers and supporting their personal development, as well as stimulating research and innovation). The aim of preparing students for active citizenship is also indirectly addressed in some of the general cultural competencies included in the educational standards, as e.g. "readiness to act in nonstandard situations, to take social and ethical responsibility for decisions".

For reasons of transparency, the experts recommend publishing the most important educational goals of each study program online and/or as part of a program-specific course catalogue, as they will most likely be of interest to students and the general public, especially to prospective students from abroad.

2.3 Concept and Structure of the Study Programs

2.3.1 Condensed Matter Physics

As outlined above, the curriculum is divided into a general scientific part and a more specialized part (so-called professional cycle). All educational units of the general cycle are compul-

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sory, whereas the professional cycle consists of a number of courses from different subareas of Physics (as e.g. Nanophysics, Nuclear Physics, Radio and Laser Spectroscopy, Quantum Physics etc.) that the students may choose from. From each of these fields, students must select one out of two elective courses. The courses of the professional cycle are variable, i.e. this part of the curriculum is not tied to the educational standards, but may be freely designed by the university.

The general scientific cycle of the program includes a number of educational units on more general aspects of Condensed Matter Physics and related areas, supplemented by a few smaller educational units on philosophical and historical aspects of the natural sciences and on academic writing, as well as foreign language classes. In addition, students must absolve a practical teacher's training to prepare them for future tasks as lecturers at university level.

In addition, students are continuously involved in research work in the laboratory, where they acquire the methodical skills they need for conducting independent research. The lab work also serves as a preparation for (and as an actual part of) the final Master's thesis. All in all, laboratory practice amounts to about 50% of the students' total workload.

The experts especially appreciate the high degree of attention paid to the practical application of knowledge throughout the entire program. Theoretical and practical elements appear to be very well balanced, and the students get a chance to gather comprehensive hands-on experience in order to prepare for their future careers as scientists. Students are also encouraged to participate in scientific conferences and to publish their research results in scientific journals or edited volumes. In this sense, the study program is very well tailored to the central goal of educating top-class researchers.

As for the theoretical part of the program, the experts recommend further streamlining and focusing the curriculum on those disciplines that are of direct relevance for the specialization. In particular, the unit on cosmology should be replaced in favour of additional English classes.

2.3.2 Physics of Magnetic Phenomena

Generally speaking, the program is designed in a very similar way as described above for the Master's program in Condensed Matter Physics. About 45% of the curriculum are dedicated to practical research (including the Master's thesis), 55% to theory-based courses.

In the basic part, some of the general units are identical (foreign language training, academic writing etc.), even though teacher's training is apparently no explicit requirement here (at least it is not mentioned in the survey of the curriculum or in the course catalogue).

In the core discipline of Physics, there is less overlap between the two programs, neither in the general nor in the variable/elective part, as the thematic focus is, of course, a different one.

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Regardless of that, the experts arrive at a similar conclusion for the Master's in Magnetic Phenomena. As far as the panel members can see, the program serves its overall purpose very well and is well geared to its intended learning outcomes both in structure and content.

2.3.3 Neurobiology

The Master's program in Neurobiology was established in the year 2010. It primarily aims at educating highly qualified scientific researchers in the field of neuroscience and psychophysiology.

The theory-based part of the program comprises 66 credit points. In total, 48 credits are awarded for the practical components (including the research in connection with the Master's thesis).

As in the two Physics programs, the general part (or "cycle") of the curriculum aims at further developing students' general cultural and professional competences and seeks to provide them with an understanding of the history and the fundamental challenges of their discipline. As part of the general cycle, students must also take classes on the "Psychology of Leadership" and increase their teaching and IT skills.

The variable part (or "professional cycle", as it is referred to in the description of the Physics programs) encompasses a number of mandatory courses on special topics of Neurobio-logy (as, for example, bioethics, psychophysiology, neurobiology of learning and memory). Apart from that, students may specialize on one of three elective areas (cell neurobiology, neuroscience or cognitive physiology). The final 6 months are dedicated exclusively to the Master's thesis and to the state examination.

The peers are convinced that the program is apt to provide students with all the knowledge and skills that can be expected from a Master's graduate in the field. Theory and practice are closely linked from the beginning, and there is enough room for the development of generic competencies, too.

However, some doubt remains whether the entrance qualifications of students are taken into account to a sufficient extent. Even though all applicants must pass entrance examinations (both on general biology and on neurobiology) some students may be admitted without possessing extensive previous knowledge in the field. On the other hand, the program is highly specialized and takes a very narrow focus from the very beginning, which might cause some difficulties for students with a background other than biology. Hence, the peers recommend introducing a more general lecture (or perhaps a series of lectures) on molecular and cellular neurobiology for first year students.

2.3.4 Chemoinformatics and Molecular Modeling

The Master's program in Chemoinformatics is the first of its kind in Russia and one of very few study programs worldwide that focus on this relatively new discipline. The program is of

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relevance to all of KFU's priority research areas and blends elements of Chemistry/Biochemistry, Pharmacology and Informatics. It also offers a double degree option based on a formal cooperation agreement with the University of Strasbourg/France, where a similar program is offered. Students who take that option spend the second year of their studies in France. All classes taken there are fully credited, and students receive a degree from both universities. During the site visit, the panel members could also speak to two students from Kazan currently studying in France, as well as to the program coordinator in Strasbourg.

The basic structure of the program is the same as described in the previous chapters (general scientific cycle including survey lectures on the discipline and related areas, as well as a professional cycle of more specialized elective units, plus research internships/laboratory practice and Master's thesis). As in the other three programs, more than 40% of the program is dedicated to practical research and the final thesis and about 55% to theory. Applicants to the program should ideally have a first degree in Chemistry or Chemical Technology, but must be able to demonstrate at least basic knowledge in the field.

The experts have gained a very positive overall impression of the program, even though it has existed only for a few years and has therefore produced only a handful of graduates so far. As has been convincingly demonstrated in the self-report of the university, all dimensions of the Framework for Qualifications of the European Higher Education Area are reflected in the contents and the applied methods of teaching and learning.

The co-operation with the University of Strasbourg seems to be beneficial for both partners, increases the overall attractiveness of the program and should therefore be continued. During the on-site talks, the experts gained the impression that there is a close, continuous and lively exchange between the program coordinators, and that the Russian exchange students receive sufficient support and assistance at their host university. To overcome existing language barriers and prepare students for their stay abroad, KFU also offers classes in French. Increased efforts should be taken to attract more French students to Kazan, especially by publishing all relevant information in English (cf. Chapter 2.8).

2.4 Teaching Faculty

During the site visit, the members of the expert panel talked to the program coordinators and other members of faculty involved in the four study programs. For each program, CVs of the teaching staff were submitted as part of the self-report.

All participating institutes and departments dispose of a relatively large number of faculty. Hence, the student-to-teacher ratio is generally quite low. The on-site talks have shown that all program coordinators are firmly embedded in the scientific community and possess extensive international experience. The experts were especially impressed by the close cooperation and teamwork across organizational units that became obvious during the site visit. Beyond that, guest lecturers from abroad are also invited on a regular basis.

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All in all, the experts found the teaching faculty to be of high quality, both in qualitative and quantitative terms. However, as all programs are to be taught only in English rather soon, there will most likely be problems for part of the teaching faculty. It should therefore be ensured that all members of faculty involved in the Master's programs get the opportunity to take classes in English if necessary. Since the university offers such classes at its own institute for foreign languages, this should be easy to organize.

Also, the experts suggest extending the measures of staff development to courses on didactics and teaching methods, as they still see room for optimization in that particular area (cf. Chapter 2.6).

2.5 Infrastructure, Resources and Student Support

Research Infrastructure

Due to their strong focus on research, the quality of the four Master's programs depends to a great extent on the standard of the laboratory infrastructure on campus. In addition to the core infrastructure, the university has more recently established so-called "Open Labs" in order to promote research progress in the priority areas mentioned above. In the context of the Open Labs, national and international researchers work together on special questions and topics of their discipline. The Master's students are also involved in these co-operative projects: for instance, there are two Open Labs contributing to the Master's program in Neurobiology, and there is one Open Lab that focuses exclusively on the field of Chemoinformatics and Molecular Modelling.

During the site visit in Kazan the members of the review panel were given a guided tour of several laboratories that are relevant for the Master's programs. In summary, the experts found that the university provides an excellent research environment: students and researchers have state-of-the-art equipment at their disposal that lives up to international standards. For example, the nuclear laboratory is one of the best to be found in the Russian Federation. In the same line, state-of-the-art microscopy and electrophysiology equipment is available for the neurobiology program.

Scientists and students also collaborate in (further) developing scientific equipment of excellent quality. During the day, laboratory assistants are present in the labs for assisting and supervising students. The Master's students, who spend a considerable part of their study time in the lab, can also apply for special permission to use the laboratories outside regular opening hours. At the labs, the students also have access to an up-to-date IT infrastructure, which may for example, be used for molecular modelling.

Library

The library of Kazan Federal University is one of the biggest in the country and provides access to numerous online databases, e-journals and e-books. During the on-site talks, it was reported that books in English or other foreign languages are not covered by the regular budget of the library, and must therefore be funded from other, external sources. Also, the overwhelming majority of the textbooks listed in the course catalogues are in Russian. With a

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view to the importance of the English language for the natural sciences in general and for the four Master's programs in particular, this is a less than ideal situation, in spite of the large-scale availability of electronic resources. Therefore, the experts recommend further extending the use of learning materials in English. As a minimum, all key textbooks used should be in English.

If publications are available both in Russian and in English, students should at least know where to get the English version.

Teaching and Learning Environment/Student Support Services

As far as the experts can see, KFU provides its students with an excellent teaching and learning environment. The university buildings are modern (or renovated) and well-equipped, and the Olympic village that was specially built for the 2013 World Student Games is now used for student accommodation.

In their spare time, students can participate in a large number of extracurricular activities offered by numerous student clubs and societies. There is a Student Council at KFU which represents the interests of all students. The Academic Council includes student representatives, too.

The Department of Career Development assists students and graduates in entering the employment market and in promoting their future careers, for example by establishing contacts with potential employers. The Department of International Relations takes special care of the needs of incoming foreign students and helps Russian students to organize a study period abroad. Furthermore, a special council was created to improve study conditions for persons with disabilities.

In all academic matters, the Master's students are free to approach a member of faculty for assistance. Every student has his or her individual supervisor. As student cohorts are very small in all four programs, teachers and program coordinators usually know their students quite well and have a detailed picture of their academic progress.

The two students currently enrolled at the University of Strasbourg reported that they were well supported by the local course coordinators in all academic and non-academic matters. Generally, they were very satisfied with the general conditions at Strasbourg, even though the language barrier was a problem sometimes. A further increase in foreign language classes (both French and English) would therefore make sense, at least for those students who choose the double degree option.

The experts have gained the overall impression that KFU provides all student support services that can be expected from a higher education institution of its size. The students and graduates who were interviewed during the site visit displayed a high level of satisfaction and motivation. Apart from the wish for more foreign language training, there seems to be no need for major improvements or changes from the students' point of view.

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2.6 Methods of Teaching and Student Assessment

Admission to the Master's programs

In order to be admitted to the Master's programs, all applicants must hold a university degree (usually a Bachelor's degree or a "specialist"), preferably in the same or a closely related discipline. All applicants must also pass written and/or oral entrance examinations.

The general rules and procedures for the admission and selection of applicants are described in the official Admission Policies of the university. However, the selection criteria (in case there are more applicants than places) and the exact design and requirements of the entrance examination do not become fully transparent in the document.

Hence, the experts recommend making the general process of application and admission more transparent, especially for foreign students. All relevant information (including formal aspects, the requirements of the entrance examination and the selection criteria) should be available in English on the university website or from other easily accessible sources. Also, applicants from abroad should be allowed to take the entrance examination in English (provided this is allowed by law).

Student Assessment

Students are continuously assessed throughout the semester, for example by means of tests, term papers, practical projects or by contribution to scientific conferences (so-called "formative assessment"). For each successful performance, students receive credit. In some educational units, students must sit an additional written or oral examination at the end of the semester (so-called "midterm assessment"). This applies in particular to the mandatory courses of the general scientific cycle. At the beginning of each course, the teacher informs the students about the general expectations and requirements. In all four Master's programs, about 50% of all units finish with a marked examination. All other units may be, but do not necessarily have to be marked.

The peers find that the overall system of assessment is apt to provide teachers with a detailed picture of student's progress, both regarding the theoretical knowledge and the methodical skills they are expected to acquire (as, for example, academic writing skills). The performance and the personal development of each student are quite closely monitored, and problems are noticed at an early stage. Even though assessments are relatively numerous and occur frequently, they still seem to remain feasible for students. Dropouts due to academic underachievement have not been reported for any of the programs.

KFU has official regulations both for formative and midterm assessment and for the final state examination. The documents are published and available to all students and take mitigating circumstances into account. Students have a right to repeat failed exams and tests up to two times, and an appeals procedure has been established as part of the formal exam regulations.

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Teaching Methods

Theory and practice are closely and effectively linked at the level of the educational units. Mostly, theoretical input (in the form of lectures) is combined with practical instruction in the laboratory and/or seminars and workshops. Due to the small number of students in all Master's programs, there is also a lot of room for intense discussion and interaction in class. Furthermore, all students are expected to dedicate about 40% of their time to independent work (self-study time).

When talking with the students, the peers got the impression that the teaching methods should be more closely aligned with the intended learning outcomes of the study programs. In particular, students still seem to have too little opportunity to consolidate certain key competencies, as e.g. the ability to explain and defend their own research results in front of an English-speaking audience. Hence, the peers recommend having more talks, poster presentations etc. in English to give students a chance to practice. Also, even more emphasis should be placed on teaching students how to write research papers in English.

2.7 Quality Assurance

General Procedures and Underlying Regulations

The university has submitted a general quality guideline as part of the self-report. The document outlines the basic instruments applied at KFU for the quality assurance and further development of the institution and its educational services. For example, the quality management system of the university is submitted to an internal audit on a regular basis (a detailed manual for the internal audit is included in the documentation). Also, the satisfaction of students and faculty with the study programs is continuously monitored and analysed. A sample of a typical student questionnaire has also been presented to the expert panel.

The self-report also mentions the official quality policy of KFU and summarizes the most important institutional quality goals included in the current version of the policy. Unfortunately, the panel members were not provided with a translated version of this central document. The experts recommend making the quality policy available online, preferably both in Russian and in English. The same goes for the mission statement of the university, which is not yet available in English.

According to the self-report, the quality policy of KFU is updated on a regular basis in order to adjust it to the needs of all stakeholders. Among the 10 main quality objectives listed in the report are, for example, "to improve the quality of graduates of the university by introducing modern means of teaching and teaching technologies in the educational process" and "to increase the effectiveness of international cooperation, [...] to bring the HEI's activities in line with the Bologna requirements, to attract foreign students to the university [...]".

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Responsibilities and Stakeholder Involvement

The leadership board of the university is responsible for the strategic part of the quality assurance system, as, for example, the development and implementation of the institutional mission and the policy for quality assurance. On the other hand, the internal quality assurance department is responsible for all "operative" issues in quality management, as e.g. the organization of internal audits and other monitoring procedures, as well as the aggregation and analysis of collected data for the institutes and the rectorate.

Apart from external stakeholders like ministerial authorities and employers, the internal stakeholders are involved in the quality assurance of study programs, too. As mentioned above, the university conducts regular online surveys both among faculty and students.

Each semester, students are asked to evaluate the quality of the educational process and the teaching performance of lecturers. In case of negative results, teachers may be obliged by the management to undergo further training to remedy deficiencies.

Beyond course evaluation, students are always free to approach a member of faculty to articulate criticism. The Student Council is also there to represent the interests of students in case of conflict, and there are student representatives in the Academic Councils at central level and at the level of the institutes.

Based on the self-report and the outcomes of the on-site talks, the experts conclude that KFU is taking clearly defined and formalized measures for the on-going monitoring and continuous improvement of its study programs. All stakeholders are involved to a satisfactory extent, and all collected information is analysed at a central level. It has also become sufficiently clear that the university everything it can do to remedy identified deficiencies if necessary.

However, the experts still see need for improvement regarding some aspects of the quality assurance system: for example, there seems to be no systematic monitoring of student workload yet. Generally, the allocation of credit points to educational units seems somewhat arbitrary to the experts, and it is apparently not a goal of course evaluation to check whether the average workload calculated for each educational unit is accurate. From the experts' point of view, workload monitoring must become an integral part of program review. It should also be possible to modify the number of credit points awarded for certain units or to change forms of assessment or teaching contents based on the results of workload monitoring. Without this feed-back dimension, the credit point system remains at a purely formal level without being a reliable indicator of the scope of each unit and program.

The experts would also like to recommend organizing at least one annual meeting of all students and staff involved in each study program in order to discuss issues of quality assurance and improvement. Such meetings would be particularly advisable for the joint program in Chemoinformatics, even though the experts are aware that they might be difficult to organize. As a minimum, there should be regular meetings of the program coordinators from Kazan and Strasbourg, or a separate quality commission could be founded consisting of representatives of both universities.

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The experts have gained the general impression that although all necessary procedures and instruments have been implemented, the university is still on its way to a comprehensive quality culture. At the level of the institutes/faculties, there still seems to be relatively little knowledge about the design and functioning of the quality management system, and it has remained unclear whether students and staff always receive feedback on the results of evaluation surveys and the measures taken in response. Regardless of that, the quality assurance of the four Master's programs seems to be working very well, even though it is still (at least to some extent) informal.

2.8 Transparency and Public Information

Kazan Federal University has published extensive information regarding its activities in research, teaching and learning online. There is also an English version of the website that contains the basic facts and figures concerning the university and its study programs.

As the four Master's programs are (or shortly will be) taught in English only, it is of particular significance to provide all relevant information concerning these programs not only in Russian, but also in English. Especially, the profile and intended learning outcomes of the programs, as well as the rules of application, admission, selection and examination should be made transparent. The experts also propose publishing a course catalogue online that is based on the recommendations of the ECTS Users' Guide and contains clear, transparent information regarding teaching contents and educational goals, student workload, forms of assessment etc. It would also be helpful to illustrate the curricular structure by means of a survey diagram or chart.

The Diploma Supplements for the programs should not only include a survey of the grades achieved, but also a brief outline of the graduate's qualification profile, as recommended in the ECTS Users' Guide.

2.9 Summary of the Findings and Impressions of the Expert Panel

The four Master's programs benefit from an excellent research environment and highly qualified, internationally experienced teaching faculty. The experts have no doubt that the graduates will be able to compete on an international market and get well prepared for a career as scientific researchers. There is a recognizable coherence between the curricula and the intended learning outcomes of the programs, and a good balance between theory and practice in each program. All programs are firmly embedded in the overall strategy of the university and play a role in the achievement of central institutional goals.

The experts have also identified potential for improvement in some areas. For example, adequate measures should be taken to prevent over-specialization and a too rapid transition to English as the prime language of instruction. Furthermore, the experts see the necessity for a more detailed monitoring of student workload and for providing all central program-related information in English.

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1. Governance, Management and Profile of the University

Student Mobility and Internationalisation

RECOMMENDATION:

However, the peers still see room for optimization. In particular, it has not become fully clear which rules and criteria for the recognition of credits earned at other higher education institu-tions in Russia are applied at KFU (not counting joint programs, which are usually based on a general agreement regarding the transfer of credits between institutions). According to the self-report, formal regulations do exist, but were, however, not presented to the panel.

The experts are of the opinion that binding regulations for credit transfer and recognition need to be established in order to facilitate student mobility through reliable and transparent standards. In particular, it should be ensured that the principles of the Lisbon Convention are adhered to at all times, as required by the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). Even though the experts are aware that from a purely formal point of view, the ECTS system has not been introduced in Russia, the Russian credit system has so much in common with it that the application of Bologna key principles and instruments (credit recognition based on learning outcomes, Learning Agreements with partner universities abroad etc.) should not cause any major problems.

In order to gain a clearer picture of the principles for credit recognition applied at KFU, the experts kindly ask the university to provide them with a document containing the official regulations that are currently applied (in English translation). If no such formal regulations exist, they must be established based on the above mentioned principles.

COMMENT OF KFU:

With regard to the principles approved by the Lisbon Convention the KFU uses the "Guidelines for the organization of educational activities with the use of network forms of educational programs" developed by the Ministry of Education on August 28, 2015, AK-2563.05 (http://kpfu.ru/portal/docs/f2038136707/AK 2563 05 ot 28.08.2015.pdf).

In addition, the recognition of study periods is reflected in the provisions of the academic mobility of students, teachers and researchers in the KFU in the section of the External Relations Department ((http://kpfu.ru/portal/docs/F652970160/academ_mobility.pdf).

According this provision, a student taking part in a program of academic mobility should apply to the Dean's Office / Responsible persons at the Department / Institute before his/her departure. A Conciliation Commission is created with the order of the Dean of the Department / Director of the institute of the Faculty / Institute, which examines the program of academic mobility in detail and gives an expert opinion. Positive expert opinion of the Conciliation Commission is given if a) the study program in a foreign university meets the objectives of the student's program of the KFU; b) the workload of disciplines studied during the academic mobility, is close / corresponds to the workload of the study program of the KFU in ECTS. At the same time the Conciliation Commission members analyze the alleged list of subjects that the student will master after academical mobility programs, and determine what subjects of the curriculum of the KFU they correspond for further transferring. That is,

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the solution to all issues related to the transfer of disciplines is given before the student's departure, and no any other problems occur upon his/her arrival. When studying in a foreign university affects the timing and schedule of studying in KFU, the student is transferred to the individual curriculum enabling to pass the exams in the period appointed by the Dean's Office / Directorate.

Currently, in connection with the release of a new federal regulatory documentation the provisions on transfer of exams are edited with the principles laid down in the Lisbon Convention.

2. Assessment of the Study Programs

2.1 Common Features and Strategic Dimension of the Programs

RECOMMENDATION:

In principle, the peers appreciate the new language policy for the programs as plausible and promising. Nevertheless, it seems that the shift from one language to another should not be quite as abrupt and thorough as planned by the university, especially as not all members of the teaching faculty seem to be sufficiently prepared for this yet (cf. Chapter 2.4). Therefore, the peers recommend a more gradual transition, i.e. testing the concept by introducing Eng-lish only in a few selected courses first and, in case of good results, extending it to the entire program.

COMMENT OF KFU:

In the future we plan to increase the number of classroom hours devoted to the English language in the Master's programs.

The KFU creates the opportunities for learning foreign languages. Training Centre of the Department of English ((http://kpfu.ru/lingvo/struktura/kafedry/kafedra-anglijskogo-yazyka/uchebnyj-centr-kafedry-anglijskogo-yazyka-kfu) organized the whole system of commercial language courses at various levels for students and teachers of KFU and external customers where all interested parties have the opportunity to improve the language skills or learn English from the beginner level.

In addition, the Kazan Federal University has testing centers where you can take the exams in English (TOEFLIBT, CambridgeESOL), German, Spanish and Russian, to obtain international certificates. All necessary information on organization, payment, evaluation and other matters relating to the testing, can be found in the relevant sections of the link http://kpfu.ru/international/yazykovoetestirovanie.

2.2 Intended Learning Outcomes

RECOMMENDATION:

For reasons of transparency, the experts recommend publishing the most important educational goals of each study program online and/or as part of a program-specific course catalogue, as they will most likely be of interest to students and the general public, especially to prospective students from abroad.

COMMENT OF KFU:

On the site of the KFU there is a description of the basic professional educational master's and bachelor's programs, implemented by the University. Moreover, at the site of the Institutes you can find not only the educational program as a whole, but also a detailed description of subjects of the curriculum. It is regulated by the Federal Service for Supervision in Education and Science (Rosobrnadzor) Nº785 dated 29.05.2014 "On approval of the structure requirements of the official website

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of the educational organization in information and telecommunications network "Internet "and the form for submitting information on it". To place information on the website of the University a special section "Information about the educational institution" is set up (http://kpfu.ru/about/obrazovanie).

2.3 Concept and Structure of the Study Programs

2.3.3. Neurobiology

RECOMMENDATION:

However, some doubt remains whether the entrance qualifications of students are taken into account to a sufficient extent. Even though all applicants must pass entrance examinations (both on general biology and on neurobiology) some students may be admitted without possessing extensive previous knowledge in the field. On the other hand, the program is highly specialized and takes a very narrow focus from the very beginning, which might cause some difficulties for students with a background other than biology. Hence, the peers recommend introducing a more general lecture (or perhaps a series of lectures) on molecular and cellular neurobiology for first year students.

COMMENT OF KFU:

We agree with the reviewers, this year the changes in the Master's program will be done, and for the first study year the module of molecular and cellular neurobiology will be organized.

2.3.4. Chemoinformatics and Molecular Modeling

RECOMMENDATION:

Increased efforts should be taken to attract more French students to Kazan, especially by publishing all relevant information in English (cf. Chapter 2.8).

COMMENT OF KFU: Currently we are working in this field.

2.4 Teaching Faculty

RECOMMENDATION:

It should therefore be ensured that all members of faculty involved in the Master's programs get the opportunity to take classes in English if necessary. Since the university offers such classes at its own institute for foreign languages, this should be easy to organize.

Also, the experts suggest extending the measures of staff development to courses on didac-tics and teaching methods, as they still see room for optimization in that particular area (cf. Chapter 2.6).

COMMENT OF KFU:

KFU implements various programs for teaching foreign languages. Training Centre of the Department of English (http://kpfu.ru/lingvo/struktura/kafedry/kafedra-anglijskogo-yazyka/uchebnyj-centr-kafedry-anglijskogo-yazyka-kfu) conducts language courses at various levels for students and teachers of the KFU where everyone is given the opportunity to improve the level of foreign language skills or learn a foreign language from the beginner level.

Furthermore a growing number of guest lecturers with international experience for teaching in English. Foreign scientists and teachers are invited not only to give workshops and open lectures, but also to hold the entire lecture courses.



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2.5 Infrastructure, Resources and Student Support

Library

RECOMMENDATION:

Therefore, the experts recommend further extend-ing the use of learning materials in English. As a minimum, all key textbooks used should be in English.

If publications are available both in Russian and in English, students should at least know where to get the English version.

COMMENT OF KFU:

The KFU widely uses the electronic library accessible to all students and teachers, the content of textbooks in foreign languages of which is high. Also it is available electronic subscriptions to foreign magazines, the right of access to foreign libraries is regularly bought. For example, in the library of the KFU there is a service of electronic document delivery, allowing students and teachers to order articles from journals that are not in the library, including foreign ones. Via the website of the library (http://kpfu.ru/library) there is an opportunity to take advantage of the electronic central catalogue of 15 major libraries of Kazan. The right for access to electronic resources of leading foreign and domestic publishers and aggregators is purchased regularly (electronic dissertations library of Russian State Library, Digital Collections Elsevier, abstract database Scopus, etc.).

For students admitted to the KFU, there is a compulsory introductory course "Fundamentals of Bibliography", where they learn to use information services of the library of the KFU, as well as the to work with catalogues.

2.6 Methods of Teaching and Student Assessment

Teaching Methods

RECOMMENDATION:

When talking with the students, the peers got the impression that the teaching methods should be more closely aligned with the intended learning outcomes of the study programs. In particular, students still seem to have too little opportunity to consolidate certain key competencies, as e.g. the ability to explain and defend their own research results in front of an English-speaking audience. Hence, the peers recommend having more talks, poster presentations etc. in English to give students a chance to practice. Also, even more emphasis should be placed on teaching students how to write research papers in English.

COMMENT OF KFU:

We agree with the reviewers on the need to strengthen this competence. However even now students have the opportunity to participate in international conferences, trainings in foreign laboratories, as well as to participate in the preparation of the articles in English. In addition, the KFU regularly hold seminars and lectures with invited foreign researchers.

2.7 Quality Assurance

General Procedures and Underlying Regulations

RECOMMENDATION:

Unfortunately, the panel members were not provided with a translated version of this central document. The experts recommend making the quality policy available online, preferably both in Russian

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and in English. The same goes for the mission statement of the university, which is not yet available in English.

COMMENT OF KFU:

The policy of KFU quality is translated into English and posted on the website of KFU (see attachment).

Responsibilities and Stakeholder Involvement

RECOMMENDATION:

However, the experts still see need for improvement regarding some aspects of the quality assurance system: for example, there seems to be no systematic monitoring of student work-load yet. Generally, the allocation of credit points to educational units seems somewhat arbi-trary to the experts, and it is apparently not a goal of course evaluation to check whether the average workload calculated for each educational unit is accurate. From the experts' point of view, workload monitoring must become an integral part of program review. It should also be possible to modify the number of credit points awarded for certain units or to change forms of assessment or teaching contents based on the results of workload monitoring. Without this feed-back dimension, the credit point system remains at a purely formal level without being a reliable indicator of the scope of each unit and program.

COMMENT OF KFU:

Monitoring of students' load is carried out in accordance with the approved curriculum. The approved curriculum establishes the list, work load, consistency and distribution of periods of study subjects, courses, disciplines (modules), practices, forms of intermediate certification and other learning activities, set by the Federal Law of the Russian Federation dated December 29, 2012 No 273-FZ "On Education in the Russian Federation" and the requirements of educational standards. Curricula approved in accordance with the legislation of the Russian Federation are posted on the official portal of the KFU.

RECOMMENDATION:

The experts would also like to recommend organizing at least one annual meeting of all students and staff involved in each study program in order to discuss issues of quality assurance and improvement. Such meetings would be particularly advisable for the joint program in Chemoinformatics, even though the experts are aware that they might be difficult to organize. As a minimum, there should be regular meetings of the program coordinators from Kazan and Strasbourg, or a separate quality commission could be founded consisting of representatives of both universities.

COMMENT OF KFU:

Such meetings are organized regularly at several institutions of the KFU. We will expand such practice. More than that, the study programs provide classroom hours for consultations with the teachers of the program. In addition, for each group of students the curator is appointed from the number of teachers of administering department, whose responsibilities include monitoring the quality of education of the group entrusted to him/her.