

**Peoples' Friendship University of Russia, Moscow**  
**- Academy of Engineering -**  
**International Accreditation of Study Programmes**



**Experts' Report**

**8<sup>th</sup> Meeting of the ZEV A Commission on November 5, 2019**

**Reference Number I-1738-1**

Study Programme	Degree	Programme Duration	Type of Programme	Maximum annual intake
Innovative Technologies in Prospecting and Exploration of Solid Minerals	Master	2 years	Full-time	16

Accreditation contract signed on: September 27, 2018

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

1 Decision of the ZEvA Commission (ZEKo) of November 5, 2019

## **I. Vote of the Expert Panel and Decision of the Accreditation Commission**

### **1. Decision of the ZEvA Commission (ZEKo) of November 5, 2019**

*The ZEvA Commission follows the experts' report and agrees with their recommendations. The commission also takes note of the university's written response to the experts' report, as well as the experts' feedback in return.*

*The commission decides to accredit the Master's programme Innovative Technologies in the Prospecting and Exploration of Solid Minerals as offered by Peoples' Friendship University, Moscow for a period of six years.*

*The university is required to submit a follow-up report to ZEvA within a period of two years. The report needs to include concrete and detailed information on the ways in which the recommendations of the experts have been adopted.*

*This decision is based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), the Framework of Qualifications of the European Higher Education Area and the recommendations of the ECTS Users' Guide as referred to in the ZEvA Manual for the External Assessment of Study Programmes.*

## 2. Experts' Appraisal

### 2.1 Executive Summary

Based on the self-report and the outcomes of the on-site talks, the experts are convinced that the study programme provides a solid education at Master's level and opens up good career prospects for graduates both in Russia and abroad. The curriculum is well-structured and provides a broad knowledge base by integrating elements from different subject disciplines. The experts regard this integrative aspect as a particular strength of the programme, as well as its special emphasis on computation.

As regards the aspect of scientific research, the experts see room for further optimization: students should receive a more thorough methodological training, and the laboratory infrastructure on campus needs to be significantly enhanced and modernized.

### 2.2 Final Vote of the Expert Panel

The expert panel recommends the accreditation of the Master's programme *Innovative Technologies in the Prospecting and Exploration of Solid Minerals* as offered by *Peoples' Friendship University, Moscow* for a period of six years.

To support the further enhancement of the programme, the experts give the following recommendations:

- The experts strongly recommend a swift and substantial modernization of the laboratory infrastructure, including equipment for field training.
- The experts urgently recommend appointing a full professor with an industry background and strong international network as academic coordinator of the programme.
- The experts recommend a general raise in academic standards for the Master's theses, for example as regards the required scope of external sources and references. In addition, a compulsory course on scientific writing should be introduced into the programme.
- In order to further enhance the programme's international profile the coordinators should seek closer contact with international associations in the fields of Geology and Mineralogy. In addition to that, the Academy's efforts to invite external experts from abroad for guest lectures and Master classes should be continued.
- The title of the study programme should be changed to better match the actual programme profile.

1 Vote of the Expert Panel and Decision of the Accreditation Commission

*2 Experts' Appraisal*

In addition, the experts give the following general recommendations:

- The university should more intensely promote the implementation of its quality assurance tools at programme level. This applies especially to course evaluation, which should be more frequently applied and more strongly formalized.
- The experts strongly recommend introducing a close and regular monitoring of student workload at programme/and or class level as a standard quality assurance tool.

II Evaluation Report of the Expert Panel

*0 Introduction: Purpose, Design and Context of the Accreditation Procedure*

## **II. Evaluation Report of the Expert Panel**

### **Introduction: Purpose, Design and Context of the Accreditation Procedure**

In September 2018, People's Friendship University of Russia (RUDN University) mandated ZEvA with the international accreditation of three Master's programmes, all of which are offered by the university's Academy of Engineering.

For the purpose of assessing the study programmes, the university was asked to submit a self-report in English including an appendix of documents, as e.g. selected course syllabi, CVs of teaching faculty, central statistical data, relevant formal regulations and policies as well as sample questionnaires for course evaluation. All documents were translated into English before submission.

In the course of the review process, ZEvA was supported by the colleagues of the Russian accreditation agency AKKORK, who provided assistance in all organizational and administrative matters.

ZEvA and AKKORK jointly assembled three international expert panels (one group of experts for each programme), who conducted a two-day site visit in Moscow in May 2019. The site visit involved talks with members of the university leadership board, the director of the Academy of Engineering, the head of the quality assurance department as well as teaching faculty, students and graduates of the programmes. Also, the experts were given a tour of the central university campus, including laboratories and other facilities of relevance for the three study programmes.

The quality assessment was conducted based on the ZEvA Manual for the External Assessment of Study Programmes. The assessment framework laid out was developed with close reference to the "European Standards and Guidelines for Quality Assurance in Higher Education (ESG)" (ENQA 2015), the "Framework of Qualifications for the European Higher Education Area" (2005) and the "ECTS Users' Guide" (European Communities, 2015).

This accreditation report refers to the Master's programme "Innovative Technologies in the Prospecting and Exploration of Solid Minerals". It is based on the experts' assessment of the self-report and the outcomes of the on-site talks and will serve as a basis for the final accreditation decision of the ZEvA commission. Provided the decision is positive, ZEvA will award its quality seal for a limited period, after which the university can apply for re-accreditation of the programme.

Separate accreditation reports were generated for the other two programmes of the cluster (Reference Ns. I-1736-1; I-1737-1). All reports will be published on the ZEvA website upon finalization.

The experts would like to thank the Vice-Rector for Academic Affairs of RUDN University, the Director of the Academy of Engineering as well as all faculty, staff and students involved for the friendly reception and the open and constructive atmosphere during the on-site talks in Moscow.

## 1. General Aspects

### 1.1 Profile and Mission of the University

Peoples' Friendship University (RUDN University) was founded in 1960, with the prime goal of providing higher education to students from developing countries in Asia, Africa and Latin America as well as to Russian students from low-income families. The university is located in Moscow, with an additional branch in Sochi.

Still today, internationality and multi-culturalism lie at the heart of the university's profile and mission: students from 150 countries are currently enrolled at RUDN University. The university (slogan: "Discover the World in One University!") is co-operating with more than 250 foreign universities and research centres worldwide and offers a wide variety of foreign-language Master's programmes.

This strong international orientation also becomes apparent in the strategic aims that the university names for the period from 2018 to 2020 (cf. self-report, p. 5):

- *To increase the contribution of RUDN University to the development of human capital for solving regional and global problems of humanity in the fields of innovation and infrastructure, urban development, energy, sustainable development, linguistic and civilizational problems of modern society and healthcare;*
- *To strengthen the position of RUDN on the world stage as the most international university in Russia;*
- *Significantly expand the presence of the university in the global digital socio-cultural and educational environment;*
- *To strengthen the integration of the new brand of RUDN University into the international space.*

In 2012, RUDN University was authorized to develop and apply its own educational standards in addition to the national standards. As the third university in Russia, RUDN University also gained the status of an autonomous university in 2014. As such, RUDN University can take independent management decisions on strategic, administrative and financial matters.

The university presently counts around 31.000 students, about 8.500 of whom are from outside Russia. RUDN University offers educational programmes (mainly Bachelor's, Master's and Ph.D. programmes) in all the subject disciplines of a classical university, including Humanities and Social Sciences, Natural Sciences, Medicine, Engineering & Technology, Agriculture, Languages and Media, Economics and Management.

#### Organizational Structure

According to the website, RUDN University hosts six faculties and 10 institutes, complemented by the Academy of Engineering as an independent organizational unit.



## II Evaluation Report of the Expert Panel

### 1 General Aspects

The university is headed by a Rector and 12 Vice-Rectors with different areas of responsibility, including the Vice-Rector for Academic Affairs. The most important collegial body at central level is the Academic Council, consisting of the members of the Rectorate, the President of the University, the heads of the faculties and institutes as well as elected representatives of the students and staff. The Academic Council is responsible for the general strategic management of the university, which includes the provision of quality educational services.

Furthermore, a Supervisory Board and a Fiduciary Board function as the main advisory bodies of the university. Various external stakeholders are represented in the boards, as e.g. state authorities, employers and graduates.

The Student Council is the umbrella organization that unites all student associations and committees under one roof. It represents and protects the interests of all RUDN students and ensures sufficient student participation in the general management and governance of the university. It also deals with student appeals and organizes extracurricular activities.

The Academy of Engineering came into existence in 2016 as part of an internal reorganization process resulting in the dissolution of the former Faculty of Engineering. It currently hosts about 3.000 students, one third of them foreigners, and more than 200 teaching staff. The Academy is involved in a broad range of study programmes, including 13 Master's programmes and 5 Ph.D. programmes taught in English. The academic disciplines covered include Space Technology, Mining and Geology, Nanotechnology as well as Mechanical and Electrical Engineering.

### Experts' Appraisal

From the experts' point of view, the mission and profile of People's Friendship University are described very clearly on the university website and in the self-report. The university holds a unique position among Russian higher education institutions, especially as far as the aspect of internationality is concerned.

With a view to that, it seems surprising that RUDN University selected the study programme "Innovative Technologies in the Prospecting and Exploration of Solid Minerals" for international accreditation. The programme is exclusively taught in Russian and is primarily directed at Russian students. Employment prospects for graduates are also mainly located on the labour markets of Russia and the CIS countries (cf. Chapter 2). Outgoing student mobility, if at all, only plays a minor role. Hence, the programme does not appear particularly representative of the university and its strategic goals.

Regardless of that, there are a few international students from non-Russian speaking countries (for example, Sudan or Ecuador) enrolled in the programme. During the interviews in Moscow, these students reported that they felt up to the requirements of the programme in spite of the foreign language and saw no general need to further strengthen English as a teaching language. The students also felt that the programme prepared them well for the demands of the industry in their home countries.

II Evaluation Report of the Expert Panel

1 *General Aspects*

The experts therefore do not see any necessity for immediate measures to further internationalize the programme. However, it may be worthwhile in the long run to increase the number of courses taught in English in order to make the programme more attractive for international students, to facilitate outgoing mobility and to generally enrich the study experience. In this context, the experts appreciate that guest lecturers from abroad are frequently invited to conduct (online) seminars, lectures or Master classes.

The organizational structure of the university is laid out in sufficient detail in the self-report. The experts especially commend RUDN University on the various options for students to participate in university governance and quality assurance. As far as the experts can see, all internal and external stakeholders are sufficiently represented in the internal governance structure of the university.

## 1.2 Student Support Services

RUDN University has described its advisory and support structures for students in detail in its self-report. Services include special tutoring and mentoring for first-year students and international students. Furthermore, the university is planning to offer psychological and pedagogical counselling for students in the near future. The Department of Social Development (DSD) is, among other things, responsible for the integration of students with disabilities and has set up a hotline to provide advice on issues related to inclusive education. RUDN University ensures that students with physical impairments receive equal access to learning resources at the library. Some of the dorms and lecture rooms are equipped to fit the special needs of disabled students. Also, special conditions may apply to them during examinations and in the process of student admission and selection.

A career center (Department of Students' Practices and Employment Organization) supports students in finding internship placements and working positions upon graduation. Students may always approach their tutors and academic advisors in all academic matters. The students and graduates interviewed during the site visit reported that their lecturers generally were accessible and supportive throughout.

To create equal opportunities for students and applicants, RUDN University offers various scholarships, including financial support for incoming foreign students and for RUDN students, who wish to study abroad. Foreign students may turn to the "Foreign Students Recruitment and Support Department" for advice. In addition, the university offers different social events especially designed for the integration of foreign students.

The experts gained the overall impression that RUDN University has implemented comprehensive and efficient support structures for its diverse student body. Students with special needs are offered a broad range of services and activities to help them integrate into university life and to make good progress in their studies.

During the on-site interviews both, the Russian and the international students displayed a high level of satisfaction with their programme in general and with the support they received from their teaching staff in particular. Lecturers appear to be very dedicated and always ready to provide advice to students whenever needed. Furthermore, the student organizations may be approached for appeals, requests and complaints of any kind.

### **1.3 Student Mobility and Recognition of Credits**

According to the self-report, RUDN closed numerous cooperation agreements with universities all over the world. Agreements relate to the regular exchange of staff and/or students or to the joint development of educational programmes (double degree programmes), of which RUDN University offers about 100. The university also actively participates in the Erasmus+ mobility programme.

The total number of outgoing RUDN students currently lies at around 800 per year, whereas the number of incoming foreign students is usually a lot higher, due to a high number of programmes directed especially at foreign students. RUDN University has gradually implemented ECTS in its study programmes since the year 2005. All graduates from Bachelor's and Master's programmes receive a Diploma Supplement in addition to the state diploma.

The experts commend RUDN University on its extensive network of cooperating partners, which includes a broad range of higher education institutions as well as other partners from inside and outside academia. The large number of double degree programmes is particularly impressive. As regards outgoing mobility, there still seems to be room for further optimization, which applies both, to the university as a whole and to the Master's programme discussed here (cf. Chapter 1.1 above). Hence, the experts strongly support the university's continuing participation in the Erasmus + programme and the co-operative programme with the National University of Engineering in Lima/Peru.

"Free movers" outside the framework of partnership agreements and the Erasmus programme seem to be an exception. Accordingly, no additional rules or criteria for the recognition of credits earned abroad were made known to the experts. In case such regulations exist, the panel would appreciate to receive more information on this aspect.

### **1.4 Quality Assurance**

The self-report includes an elaborate description of the university's internal quality management system. The university has implemented a central department concerned with the quality assurance of educational programmes, which deals both with internal quality management and matters of external licensing, certification and accreditation. In addition, there are units responsible for quality assurance at decentral level. The main quality objectives (quality strategy) of the university are published on the RUDN University website. Also, a quality manual is provided, which regulates the key processes of the quality assurance system.

II Evaluation Report of the Expert Panel

1 *General Aspects*

The applied methods and tools for quality assurance include regular monitoring of performance indicators, centralized process management and continuous monitoring of student satisfaction, for example by means of interviews or round tables.

Written satisfaction surveys are conducted among students, staff, employers and graduates on a regular basis. The results of the surveys are published in the form of quality reports.

Apart from the measures applied at central level, faculties may conduct their own surveys to assess the quality of teaching in particular study programmes or educational units. Based on the survey results, programmes may, for example, be updated in terms of content or teaching methods. Furthermore, each faculty and institute has its own student commission for surveying the quality of education. At least once per semester the chairpersons of these commissions meet with the Rector to discuss quality issues, which results in a protocol and an action plan.

In its self-report, RUDN University presented a list of 15 quality indicators that are monitored both for each study programme and for the entire university. These indicators refer to aspects of internationality (e.g. number of joint programmes), but also to the qualifications and research output of staff, average student performance and to student satisfaction with the quality of education.

Based on the information provided in the self-report and during the site visit, the experts conclude that RUDN University has created a complex, state-of-the-art internal quality assurance system, which involves all internal and external stakeholders to a satisfactory extent. The study programmes are regularly monitored and revised with a view to the strategic and operational goals of the university and to the aim of continuous improvement. The institutional quality assurance policy and quality strategy are published on the university website, and the responsibilities for quality assurance are clearly assigned.

In the course of the site visit, the experts got the impression that the quality assurance system is formally established and functional, but not yet implemented to a sufficient degree on the programme level. Based on these impressions, the experts recommend promoting the implementation of quality assurance tools at programme level more intensely. This applies especially to course evaluation, which should be frequently applied and strongly formalized. Students should get the chance to provide anonymous written feedback on classes by means of standardized questionnaires. The questionnaires should also include a free comment option, and the lecturers should reflect together with their students on the survey results and on the consequences drawn from them. In case of very small learning groups (up to 10 students), more dialogue-centred course evaluation tools may be applied, as e.g. structured interviews.

Furthermore, the experts strongly recommend introducing a close and regular monitoring of student workload at programme/and or class level as a standard quality assurance tool. The on-site talks have revealed that the awarded ECTS credits do not always accurately reflect the actual workload, and to the experts' knowledge there is no mechanism yet to identify and remedy such discrepancies.

II Evaluation Report of the Expert Panel

1 *General Aspects*

### 1.5 Transparency and Public Information

All key information concerning the study programme is publicly available (both in Russian and in English) on the RUDN website. This includes descriptions of the intended learning outcomes and career prospects for graduates. The course syllabi and the exam requirements are made known to the students at the beginning of the semester. Regulations on student assessment are documented and published.

As far as the experts can see, the students receive all the information they need about their study programme and its requirements in due time. However, the experts would like to point out that the English version of the university website is not yet complete and thus sometimes refers international site visitors to sections that are available in Russian only. In view of the institution's internationalization strategy, this issue might be addressed in the future.

## 2. Assessment of the Study Programme

### 2.1 Key Facts

The Master's programme "Innovative Technologies in Prospecting and Exploration of Solid Minerals" was first introduced in the year 2012. It is one of two closely related Master's programmes in the field of Mining offered by the Academy of Engineering. Both programmes deal with the exploration of natural resources, with a focus on solid minerals and oil/gas, respectively. RUDN University offers a "Specialist" degree programme, but no Bachelor's programme in this subject discipline. Hence, the students enrolled in the Master's programme have usually obtained their prior qualifications elsewhere.

The programme currently counts 10 enrolled students and 18 graduates (figures quoted from the self-report). It is clearly identified as a 2-year full-time course and awards 120 ECTS credits, out of which 57 credits are attributed to theory-based classes and 57 credits to practice-based training (internships in industry, research and development projects, pedagogical practice). Six credits are awarded for the Final State Examination, which includes the defence of the Master's thesis. Graduates of the programme are qualified to proceed to doctoral level as stipulated in the Russian and European qualifications frameworks.

### 2.2 Intended Learning Outcomes

The intended learning outcomes of the programme are published on the university website and are briefly outlined in the self-report. The website describes the intended learning outcomes as follows:

*Within two years of study, students gain knowledge of the historical stages of development, current state and relevant problems of geological science, methodology and methods of integrated geological research in solving scientific and applied problems; learn modern methods of planning and organizing research, conducting and documenting observations and research, methods of data summarizing and processing; acquire the skills of independent research, applied, pedagogical work, the choice of the necessary research methods.*

#### Knowledge acquisition.

*Graduates of this specialist area acquire knowledge of the study of patterns of formation of local clusters of mineral raw materials; prospecting and geological exploration of these objects by various methods, as well as knowledge of comprehensive geological-economic assessment of raw materials at different stages of the exploration process.*

#### Programme advantages.

*Upon completion of the programme, graduates can:*

- *apply innovative methods of geological and geophysical research and information processing;*
- *create 3-D geological models of fields;*

- *use innovative approaches in solving tasks based on modern software: Micromine, Surpac, ArcGis, Surfer, etc.*
- *apply innovative methods of predicting mineral deposits.*

[...]

The employment prospects for graduates of the programme are outlined as follows:

- *Major mining and exploration companies (as Geologist, Chief Geologist, Senior Geologist, Head of Department, etc.);*
- *Design and Research Geological Institutes (as Geologist, Geological Engineer, Researcher, Senior Researcher, etc.);*
- *Institutes of the Academy of Sciences (as Researcher, Senior Researcher, etc.);*
- *and other organizations related to subsoil use.*

According to the self-report, the programme imparts a number of generic competencies, including social skills like “*communication, teamwork, emotional intelligence*” as well as management skills like “*time management, leadership, problem solving, critical thinking*”.

The experts confirm that the intended learning outcomes of the programme are fully in line with the Master's level as defined in the Framework of Qualifications for the European Higher Education Area, and with Level 7 of the European Qualifications Framework. In the self-report, this is also underlined by means of a survey chart, which relates the intended learning outcomes and their underlying standards to the Dublin Descriptors (Knowledge and Understanding; Application of Knowledge and Understanding, Making Judgments, Communication Skills, Learning Skills/Learning Ability). From the experts' point of view, the intended learning outcomes are plausible and sufficiently transparent. The desired qualification profile of the graduates is clearly outlined and encompasses research skills, professional skills and soft skills to equal degrees.

### **2.3 Profile, Content and Curricular Structure**

As outlined above, the Master's programme encompasses both, theory-based coursework and practical work in the context of internships and research projects. In terms of credits awarded, theory and practice are of equal weight within the programme. As is common practice at RUDN University and other Russian universities, the theory-based part of the curriculum is subdivided into a block of “basic” units that are compulsory for all students and a variable part, which includes both mandatory units and a number of elective subjects.

The compulsory part of the curriculum includes educational units on the History and Methodology of Geology as well as current problems and methods of mineral exploration. Students receive foreign language training and take a class on the “Philosophy of Natural Science”. The theoretical part of the programme integrates contents from the fields of Geology, Geophysics, Geochemistry, Geoinformation Technology and Remote Sensing, with a particular focus on computational aspects.

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*2 Assessment of the Study Programme*

Soft skills are not taught separately, but are to be developed in the context of the internships and research projects.

In the course of the programme, the students absolve two external internships in enterprises or organizations of the mining industry: one shorter internship phase (9 ECTS) in the first year and the long “pre-diploma” internship (24 ECTS) in the final semester. Students may choose their internship placements according to their own interests. All students receive continuous advice and guidance from personal supervisors throughout this part of their studies. In the course of the internship, students are expected to further deepen their professional and methodological skills by applying the acquired theoretical knowledge in practical contexts. The pre-diploma internship is also used for the preparation of the final Master's thesis.

Students are encouraged to publish their research results and to participate in scientific conferences wherever possible. In order to obtain their degree, they also have to pass the (written) Final State Examination and to successfully defend their Master's thesis, as prescribed by national law.

Based on the self-report and the outcomes of the on-site interviews, the experts conclude that the study programme provides a solid education at Master's level. The experts are confident that graduates of the programme have acquired the skills and knowledge to qualify them for positions in the mining industry either in Russia or abroad. The curriculum is well-structured and provides a broad knowledge base by integrating elements from different subject disciplines. From the experts' point of view, this integrative aspect is a particular strength of the programme as well as its emphasis on computation.

Regardless of that, the experts find that the programme does not (yet) entirely live up to its own goals. This applies particularly to the aspect of scientific research: even though the students are involved in applied research from an early stage, too little attention is paid to methodological instruction within the programme. It is clearly the prime goal of the programme to produce qualified practitioners for the industry instead of top-level researchers. Legitimate as this may be, the final theses presented to the experts show methodological shortcomings that should not appear at Master's level. Hence, the experts recommend introducing a compulsory course on scientific writing as well as a general raise in academic standards for Master's theses, for example as regards the required scope of external sources and references. It is necessary that the students learn how the data for the computational application are generated and where the sources of possible mistakes lie. For this, the equipment in the laboratories needs to be improved, and geochemical and geophysical data acquisition and interpretation need to be implemented at a higher scientific level.

From the experts' point of view, the title of the study programme does not fully reflect its actual profile. In terms of content, the programme puts a particularly strong focus on computation and remote sensing, which could be more strongly drawn out in the naming of the programme. Neither do the experts see that the “innovative methods” mentioned in the current title are actually being imparted, which seems to be at least partly due to a lack of modern laboratory and field equipment and adequate research infrastructure (cf. Chapter 2.6).



For these reasons, a re-naming of the programme should be considered.

The experts regret that the enrolment figures and the general level of interest in the programme have remained at a relatively low level over the past few years. In order to widen the potential target group and to stabilize student numbers at a satisfactory level, it may be helpful to introduce a Bachelor's programme in this discipline that the Master's programme could consecutively build on, either in addition to or instead of the existing "specialist" programme.

The experts commend RUDN University on continuously attracting international students to the Master's programme. In order to enhance the programme's international profile further, the coordinators should seek closer contact with international associations in the field, as e.g. the Society of Economic Geologists (SEG), the International Association for Mathematical Geosciences (IAMG) or the Society for Geology Applied to Mineral Deposits (SGA), which offer various activities for student members, including an international keynote speaker programme. In addition to that, the Academy's efforts to invite external experts from abroad for guest lectures and Master classes should be continued.

## 2.4 Methods of Teaching and Student Assessment

The self-report names the following teaching methods that are applied in the study programme:

- Traditional lectures/seminars/laboratory work/practical classes;
- seminars in the form of "round tables"/presentations, reports with follow-up discussion etc.;
- solution of small situational problems (mini-cases) both individually and in teams;
- e-learning elements based on Moodle.

The so-called "interdisciplinary course work" at the end of the first year serves to develop the students' research skills. Students are also invited to actively participate in the department's research projects. In addition, they are instructed in the application of relevant technical and scientific tools and methods throughout the programme.

RUDN University has developed a "Fund of Assessment Tools" for each discipline in order to assess the students' learning progress and the development of the desired competencies. The exam regulations of RUDN University and the syllabi that were submitted with the self-report mention a large variety of possible assessment methods for Master's programmes, as e.g. written tests and examinations, laboratory work, projects or reference papers.

The in-class performance of students also has an impact on the overall grade. According to the RUDN regulations, failed exams may be repeated twice within the first two months of the following semester.

Based on all information provided, the experts conclude that the applied methods of teaching and assessment are adequate for a Master's programme of this discipline and are well aligned to the intended learning outcomes.

## 2.5 Teaching Faculty

Seven associate professors currently teach in the Master's programme, supported by a small number of senior lecturers and teaching assistants. The majority of the lecturers hold a Ph.D. or a higher qualification. Academic CVs of the teaching staff have been submitted as part of the self-report, and the experts had the opportunity to conduct on-site interviews with some of the lecturers.

All in all, the experts have no doubt that the teaching faculty involved in the programme are well-qualified and highly dedicated to their task and to their students. There is notably a close and trustful student-teacher relationship within the programme, which contributes substantially to the high level of student satisfaction.

However, as the large majority of the lecturers are no full members of the RUDN faculty, the programme lacks a sufficient "backbone" of staff and a strong leading figure to ensure its long-term sustainability and continuous strategic development. The experts therefore urgently recommend appointing a full professor as academic coordinator of the programme. Ideally, this person should have an industry background and should be actively involved in international networks that the programme could benefit from.

## 2.6 Infrastructure, Resources and Learning Environment

During their visit in Moscow, the experts were given a tour of the main RUDN University campus, which included the central library and the Geophysics laboratory. The self-report also contains extensive information on the infrastructure and facilities at RUDN University. Questions of infrastructure and equipment were also intensely discussed with the teaching faculty in the course of the on-site interviews.

The experts found that as far as the general learning environment at RUDN University is concerned, the students are provided with sufficient resources and a modern infrastructure to support their learning progress. The library is well-equipped and provides a lot of workspace for students as well as access to a large variety of e-papers via online databases like Scopus and Science Direct. State-of-the-art computers and software are also at hand on campus.

As for the specific needs of the Master's programme in mineral exploration, the experts see severe limitations regarding the laboratory infrastructure: the microscopes for teaching basic geology courses are outdated and need to be replaced, the equipment of the Geophysics lab is only basic and largely outdated (holds for seismic velocity, magnetics, electromagnetics,

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electrical resistivity, ground penetrating radar), and a research infrastructure for Petrology and Geochemistry is entirely missing. Here, basic equipment for producing thin sections and basic geochemistry, such as X-ray fluorescence, is highly recommended. Additional software licences and modern laboratory computers should be acquired to ensure that all students have access to substantial software to perform geostatistical numerical modelling and uncertainty generation during teaching courses and research.

As was reported on site, the department at the Academy of Engineering has already made requests to the university administration for new equipment (as, for example, microscopes). The experts support these efforts and strongly recommend a swift and substantial modernization of the laboratory infrastructure. Otherwise, it will be hard for students to achieve the intended learning outcomes of the programme, i.e. to acquire state-of-the-art knowledge and competencies.