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_____ Shadrikov V.D.

_____, 2013

REPORT

**on the results of the independent assessment of the basic
professional educational program of higher education**

**270800.62 "Construction, profile production and use of building
materials, products and structures"**

**Federal State Autonomous Educational Institution of Higher
Professional Education the North-East Federal University (NEFU)
named after M.K. Ammosov**

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The main educational program for the specialty # 270106 – Production of construction materials, components and structures of State Educational Standard of Higher Professional Education (SES HPE) of the course of training of the certified specialist 653500 – Construction is implemented since 1991, awarding the qualification of civil engineer, full-time form of education, the training time is 5 years. The Basic Educational Program is realized since 2011 under the Federal State Educational Standard of Higher Education (FSES HPE) for the training course 270800.62 – Construction, profile production and use of building materials, products and structures, awarding the Bachelor degree, full-time form of study, the duration of study is 4 years. Basic educational training programs are implemented by the Department of Production of construction materials, components and structures of the Engineering and technical institute of the North-East Federal University (NEFU) named after M. K. Ammosov, with an address at: 50 Kulakovskiy st., Yakutsk, Republic of Sakha (Yakutia), 677016.

CRITERION 1. QUALITY ASSURANCE OF EDUCATION

The main purpose of the BEP in the course 270800 ‘Construction’, the profile production and use of building materials, products and structures is the development of students' personal qualities, as well as the formation of common cultural universal (general scientific, social and personal) and professional competence in accordance with the **FSES HPE**. The goal is consistent with the mission of the University.

The purpose of the program corresponds to labor market requirements, which in its turn focuses on the main documents adopted by the executive authority of the Republic and the Russian Federation in general, for example, ‘The development strategy of the building materials industry of the Republic of Sakha (Yakutia) for the period until 2020’, ‘The evaluation guidelines (methodical recommendations) for the development agenda of industrial enterprises for the construction materials and industrial housing of the Russian Federation component state until 2020’, prepared by the Ministry of regional development, ‘The Program of the social-economical development of the Republic of Sakha (Yakutia) for the period until 2025, and its main guidelines until 2030’ (The Decree of Sakha (Yakutia) Government # 190, dated 05.05.2011), ‘The Strategy of social and economical development of the Far East and the Baikal region for the period until 2025’ (The Decree of the Russian Federation Government № 2094-r, dated December 28, 2009), ‘The scheme of the integrated circuit development of the transport and energy productive forces of the Republic of Sakha (Yakutia) until 2020’, approved by the Decree of the Government of Sakha (Yakutia) # 411, dated 20.06.2009.

In 2012, the BEP in the course 270800.62 - Construction won in the nomination ‘The best educational programs of innovative Russia’, implemented with the support of the magazine ‘The accreditation in education’, of the Guild of experts in the field of education and the National Center of professional accreditation.

CRITERION 2. STRUCTURE AND CONTENT OF THE PROGRAM

Curriculum for the course 270800.62 – Construction is designed in accordance with the requirements and include the following: curriculum, schedule of training process, information with the summary data.

Curriculum includes disciplines of the national and regional component and student's choice disciplines are provided with the help of university-wide competencies UC-1...UC-5 as well.

Curriculum for the bachelor degree under the training profile contains at least 1/3 of the optional subjects according to the requirements of FSES. This gives the student the opportunity to build individual learning paths. The department and the students have individual educational plans, which form their own trajectory of education. There is a logical connection between subjects of the curriculum, the concept of receivers disciplines and disciplines that rely on the subsequent discipline, for example, discipline 'Construction materials' is taught after studying the course of the disciplines 'History of the industry and introduction into the profession', 'Chemistry', 'Physics', 'Mathematics'.

The disciplines of the University Program (UP) fully cover the competencies that need to be obtained by the student for the entire period of study in accordance with the FSES, including the competences of the NEFU that are sensitive to the national-regional component. The UP structure of the development program for all students is unified, but it includes a lot of optional disciplines and the student form their own individual trajectory according to the level of training based on the recommendations of the Chief of the Department, who is in charge of the implementation of the BEP.

The Difference in the initial training level is taken into the account by the professors (the teachers) for each subject individually using the student-centered approach in education.

In the Work Programs (WP) of the specific (subject oriented) disciplines there is a table of structural and logical connections with the basic disciplines. Total labor coefficient of the basic components of Educational Cycle of the Basic Educational Program (EC BEP) B.1, B.2 and B.3 should not exceed 50 percent of the total labor coefficient of the basic components of EC BEP according FSES.

Unit of general and special disciplines should provide the breadth and depth of practical training required for realization of the practical activities by the graduates in accordance with the objectives of the BEP. There is a list of laboratory equipment, listed in the WP of the special disciplines and practical knowledge provided by the curriculum.

The work programs of general and special disciplines recommend using relevant and up to date information in the field of engineering and technology, prescribed in the periodic domestic and foreign literature, including electronic library systems of the NEFU Research Library.

The education under the program ends in execution of the graduate qualifying work that contains elements of research and development activity. The final presentation (defense) of The graduate qualifying work (GQW) comes with the review of research supervisor of the thesis (project) and review of the potential employer with the indication of the positive and negative sides of the GQW, including the knowledge of the basic, special disciplines and the amount of the elaborated scientific and technical literature.

Assignments for the externship are given taking into account the GQW. While at practice, the student does a literature review and a possible patent research, including Internet resources, which should result in the preparation of the presentation report with a distinct theme of graduate work. The future research supervisor is appointed by the chief of the externship. Questions of state examination for the course are determined by the Final State Evaluation (FSE BEP)

program developed by the training department of production of construction material and structures (see Appendix number 11).

Contents of the course exam paper of the State Examination Board (SEB) are focused on the perception and knowledge of graduates of modern requirements and approach in the construction industry (see Appendix 11).

The choice of themes of the GQW is aimed at the needs of potential employers, development of the Republic industry of construction materials with the use of local raw materials, and promotion of energy-efficient and energy-saving constructional materials, structures and products and implementation of scientific and technical tasks solved by higher-education teaching personnel (teaching staff) of the training department of production of construction material and structures (PCMS) within the national and regional programs (see criterion 1, paragraph 4).

CRITERION 3. EDUCATIONAL MATERIALS (COURSEWARE)

The institute library provides the students with the basic and additional educational literature, resource books, and guidance, researches and journals on all disciplines of the EP. Educational materials (EM) are examined by The Educational Board (EB) of the NEFU for compliance with the FSES, and recommendations of the NEFU.

The general availability of the literature is 0.5-1. The volume of the confidential literature is 65%. The degree of novelty is about 80%, due to the fact that there is a list of specifications and technical literature (GOST, Technical notes (TN)), as well as literature on special subjects, which has not been updated since the 80's of the XX century.

Monitoring and test materials (MTM) give an opportunity to check logical qualities and skills of the student, the ability to analyze the information presented in charts and tables, conduct engineering analysis by discipline. MTM take into account different requirements for the level of the student training, e.g. mathematical training.

The institute library provides students with the basic educational materials, mentioned in the discipline programs.

Periodicals consist of 20 items of scientific journals.

Regulations on The Complex of the teaching material on the disciplines (CTMD) are under approval at the time. The structure of CTMD is approved.

16. The structure of CTM corresponds to the requirements.

The Teaching Commission (TC) holds meetings on the current issues (Work programs for the disciplines of the providing departments are approved at the training department and then by the Teaching Commission of the Engineering and technical institute (TCETI)). Is Conducted. The Educational materials (EM) for the specialists must to be updated every five years, for bachelors - every four years. Also this should be done in case the CTMD undergoes significant changes in the structure of the curriculum or the literature is updated, as well as regulatory requirements. In order to do this, the Work Plan of the Discipline contains the list of the registration of changes.

Students participate in the Educational Seminars, the Management of the Institute and the Academic Association holds joint meetings of the students' heads, the opinion of the students counts as for the regular work on updating of The Complex of the teaching material on the disciplines (CTMD).

CRITERION 4. TECHNOLOGY AND METHODS OF EDUCATION

The educational technologies that are used help to improve the quality of education.

The teacher chooses the type of educational technology best suited for a given discipline, based on the goals and objectives, for example it can be student-oriented technologies including different level technologies (differentiated) of education, collective mutual learning, technology of the full learning, technology of training modules, etc.

Often the webinars with Russian and foreign speakers are held: Webinar held on March, 1 2012 on the topic: 'Alkali Silica Reaction in Concrete: From the Reaction to Concrete Behavior Physicochemical and Mechanical Approach'. The speaker is the professor of higher educational institution of engineers (Mr. Ales, France), the head of construction materials department Erik Garcia Diaz.

Webinar on 'Problems of construction materials. Concrete technology of the 21st century.' The speaker - The Member of the Russian Academy of Architecture and Construction Sciences, The President of the Association of scientists and experts in the field of construction materials, doctor of technical sciences, professor, head of the department of technology binders and concrete of the Moscow State University – Jurij Mihajlovich Bazhenov.

CRITERION 5. THE HIGHER-EDUCATION TEACHING PERSONNEL (THE FACULTY)

The BEP is realized by the teachers that have basic education, corresponding to the profile of the subjects taught and that are systematically engaged in scientific and academic activities, teachers of special subjects have a degree and experience in the professional field. Each member of the faculty has a job description (duty regulation), that is the legal basis for the objective determination of the workers correspondence with his position while conducting the evaluation of his competence during the hiring process, evaluation, assignment of skill category, promotion or disciplinary sanctions; increasing of the employee's liability for the results of his work and holding liable for the responsibilities set for the employee (administrative, civil or criminal) for the improper performance of his duties or not using the authority granted to him.

The graduates of the program are involved in the teaching process and securing their position at the faculty. Their professional training is constantly conducted through the postgraduate and professional development programs. According to the development program of the NEFU for the upcoming years the candidates' pool is defined. The members of the faculty regularly receive training according to process data card (PDC). 'The Training of highly qualified personnel'.

The following normative documents regulating the activities of the faculty are developed: 'Regulations on the election procedure of deans of faculties and heads of departments' dated 26.01.2012. 'The Quality management system-Procedural and institutional documentation' (QMS-PID)-4.3.2-10-11 establishes unified requirements for candidates for these positions, the procedure of establishing the terms of appointment, the organization of elections of deans of faculties and heads of departments, the process of voting at the meeting of the NEFU Academic Council. 'Regulations on the procedure for certification of employees that occupy the positions of scientific and pedagogical staff in the NEFU' approved by the Decree 271-OD dated 13.12.2010. The certification process is designed to facilitate the rational management of the educational and creative potential of employees, increase their professional level, and optimize the training, recruitment and placement of the staff. 'Provision of the professional development of teaching staff and research staff of the NEFU as part of development program" dated 22.12.2010 determine the order, forms, terms of training of the teaching staff, as well as procedures and reporting forms to improve the skills, etc.

The teaching staff regularly takes Russian and international training courses. The NEFU organizes internal qualification teaching courses (QTC), which can be viewed on the website of the University www.s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/umu/mezhvuzovskiy-uchebno-metodicheskiy-tsentr/

The teachers who have practical experience in the subject area of the course content are encouraged. For example, A. E. Mestnikov – the senior research employee and lead researcher of the Institute of Nonmetallic Materials, P. S. Abramov – the Head of the Laboratory of the Yakutsk complex of construction materials and structures, master of the brick shop; E. F. Sidorov - Senior construction site foreman, engineer of the technical supervision, leading nonstructural specialist, director of investment and construction management.

The teachers implementing the program are invited to other Educational Establishments (EE), for example, the Novosibirsk Academy of Water Transport (branch), the Institute of Contemporary Art (Yakutsk), Arctic State Institute of Art and Culture (Yakutsk).

In order to provide training for the candidates pool for the faculty the mentoring of the young employees is in practiced, they are assigned to an experienced faculty members and must attend lectures of the professor-mentor, active methodological assistance is organized, educational and methodical literature for young employees is provided, scientific support for the postgraduate is provided by the supervisor, etc.

CRITERION 6. RESEARCH AND IMPLEMENTATION OF ITS RESULTS IN THE EDUCATIONAL PROCESS

The scientific –research work (SRW) is carried out both with the help of federal funds (the state contract # 1070, dated 26.05.2011 ‘The Development and implementation of the production of wall materials with improved performance characteristics out of autoclaved aerated concrete on the base of quartzo-feldspathic sand’ (2.9 million rubles), the state contract # 67L A1, dated 22.05.2012 ‘The Development of production technology of thermal acoustic insulation materials on the base of gypsum and waste paper’ (2 million rubles), research on state contracts of Sakha (Yakutia) # 67L-L1, dated 22.05.2012 ‘The Development of production technology of thermal acoustic insulation materials on the base of gypsum and waste paper’ (2 million rubles), etc.), and with the help of internal funding.

Performance indicators of SRW: the implementation acts, obtained patents, certificates of intellectual property, PhD defenses, Small Innovative Enterprise ‘Stroykompozit’, articles, publications.

Research activities of the graduate students are financed, the indicators are performed (articles, conferences attendance, etc.)

The temporary creative teams (TCT) are created that are funded with the help of the NEFU development program: TCT ‘Monolitstroy’ under the development program of the NEFU, Topic # 2.10.5 ‘The Development of energy-efficient construction technology of wall structures using monolithic foam’ (lead by prof. A. E. Mestnikov), TCT ‘Cellular concrete’ under the development program of the NEFU, Topic # 2.10.7. ‘Optimization of the composition and properties of autoclaved aerated concrete on the base of quartzo-feldspathic sand’ (lead by prof. A. E. Mestnikov), etc.

SRW of the post-graduate students is productive. Small Innovative Enterprise ‘Stroykompozit’ is created on the basis of which there is an experimental area for educational and practical purposes of the BEP, participation in conferences, publications and articles (see section 3)

Participation in grants:

1) In 2011, students took first places in the Student Business Forum ‘ENGINEER 2011’ (E.A. Reshetova, student graduate of the Department of the productions of the construction materials and structures (PCMS)-06 - Grand Prix of I degree with appointing of the grant in the amount of 1.8 million rubles for the purchase of technological equipment for production of dry mixes; V. I. Fedorov, student graduate of the Department of the productions of the construction materials and structures (PCMS)-07 - Grand Prix of II degree with the appointment of a grant in the amount of 700 thousand rubles for the purchase of manufacturing equipment for the production of decorative tiles and acoustic insulation products.

2) In February 2012 I. A. Gavrilyeva, K. E. Filippova - Grant of the Head of the NEFU named after M.K. Ammosov.

3) In April 2012 at the Student Business Forum ‘ENGINEER 2011’:

I. A. Gavrilyeva, K. E. Filippova, student graduate of the Department of the productions of the construction materials and structures (PCMS)-07 - I degree diploma;

(Annex B4. Copies of diplomas and certificates).

The scientific research facilitated holding of the workshops for the disciplines, student research conferences and postgraduate readings, Ph.D. defenses, A. D. Egorova’s approval on the position of lecturer and researcher of the Department of the production of the construction materials and structures (PCMS) (who is a supervisor for scientific circle ‘Technologist’, which consists of 40 students, two school students and 4 post-graduate students).

The work programs and lectures on the following subjects are developed: ‘Cellular concrete technology’ (A.E. Mestnikov), ‘Composite binders’, ‘Technology for the products from local raw materials’ (A.D. Egorova), ‘Construction materials and products of Yakutia’ (P. S. Abramova). The training and work practices are conducted on the basis of the department laboratory.

The course of laboratory work for the following disciplines is developed: ‘Cellular concrete technology’ (E.A. Reshetova), ‘Composite binders’ (K.E. Filippova), ‘Technology for the production out of local raw materials’ (V.I. Fedorova)

CRITERION 7. EDUCATIONAL AND MATERIAL AND TECHNICAL RESOURCES OF THE PROGRAM

The plan of financial and economic activity is posted at the NEFU: <http://s-vfu.ru/upload/iblock/1f2/1f22dc776bce483c269b3b8a2426f631.pdf>

Formation and use of educational and financial resources is reflected in the following documents: budget for the state order, plan and report on the financial activities, staff schedule, the admission quotas, development program of the NEFU.

MTR programs allow to contain extensive documental fund of the scientific library (on January 1, it was 1,164,848 copies.

The lecture room #104 is equipped with the required by the FSES laboratory equipment , in addition to this, the training room is equipped specially for the students classes, also for training purposes the Laboratory of the Quality Control Department of JSC ‘Integrated house-building factory’ is used.

Students’ practices are realized at experimental test areas of the NEFU based at Small Innovative Enterprise LLC ‘Stroykompozit’.

Additional material base for the BEP is provided by the Arctic Innovation Centre of the NEFU <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/vspomogatelnye-podrazdeleniya/arkticheskiy-innovatsionnyy-tsentr/>

Automated workplaces for readers consist of 120 places. E-learning resources are represented in the scientific library <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/vspomogatelnye-podrazdeleniya/nauchnaya-biblioteka/full-text-database/>, <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/vspomogatelnye-podrazdeleniya/nauchnaya-biblioteka/electronic-resources-of-the-temporary-access/>

CRITERION 8. PROGRAM MANAGEMENT STRUCTURE

The documentation that regulates planning, organizing and managing of the implementation and development of the program is available on the NEFU website <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/umu/docs.php>, and also <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/upravlenie-kachestva/dokumenty/>

Organizational structure of the program is carried out in accordance with the Law of the Russian Federation 'On education' and Standard provisions on educational institution of higher education, based on the principles of democracy, humanism, accessibility, priority of universal values, human life and health, citizenship, and free development of the personality.

The distribution of functions of the program participants is identified in the process information card of the 'Training and methodological support of the educational process'.

Procedures associated with the selection and choice of teachers, their evaluation and development of competence are embodied in the following legal documents: 'Regulations on the procedure for the election of deans of faculties and heads of departments' dated 26.01.2012; 'The Quality management system-procedural and institutional documentation' (QMS-PID)-4.3.2-10-11; 'Regulations on the procedure of certification of employees in positions of scientific and pedagogical staff in the NEFU', approved by the Order 271-OD, dated 13.12.2010; 'Provision of professional development of teaching staff and researchers of the NEFU as part of development programs' dated 22.12.2010.

Annually open lessons of teaching staff are held on the basis of which teacher analysis is done and recommendations that should be considered by the faculty are issued, regular checkups of the classes for compliance with the schedule of the University Program are held as well.

Contests for faculty members are held. The Engineering technical institute is considered to be the best training facility in technical direction of the NEFU for two years in a row. This award involves a cash prize for all employees <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/upravlenie-kachestva/dokumenty/>

Students take an active part in the quality assurance procedures and warranties of education (including within their scientific research work).

Feedback with students is supported through mailbox of suggestions and proposals for improvement of organization and management of UP, meetings are held with alumni and employers. Alumni Association operates on the base of the Institute.

Methodology became widespread in 2013 - Quality management system - Standards of institution -4.2.1-006-12 'The analytical method of first course student performance regarding the individual disciplines' <http://s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/upravlenie-kachestva/dokumenty/>

The NEFU operates with the help of the point-rating system of the performance - a set of measures to ensure the quality control of the students training in their mastering of basic educational programs.

'Regulations on the point-rating system of the NEFU' approved by Order 419-OD, dated 25.04.2012 determine the order of assessing the knowledge level of students of the NEFU and is

used for developing student-centered learning, encouraging regular work of students, revealing their creativity, differentiation, assessment of knowledge based on the level system of education.

Administrative units of the University regulate their decisions through the Development Program of the NEFU until 2020. www.s-vfu.ru/universitet/rukovodstvo-i-struktura/strukturnye-podrazdeleniya/progr_razv/dokumenty/, orders of the Government of the Russian Federation, regulations of the Ministry of Education of the Russian Federation, the implementation of quality management. In order to conduct a unified database of the university staff the system 'Parus' is in use, designed to automate the management of staff and ensure the implementation of such processes as the formation of personnel schedule, recruitment of employees, appointment, registration of employees personal information, record of qualification categories of employees, passing the training courses, certification, registration of the staff appointments, formation of the orders for the personnel and personnel schedule, the formation of the required reports and so on.

The automated system of teachers' certification is implemented in order to maintain the activity of evaluation commission of the NEFU on planning, organizing, realization and recording of the certification exams for the compliance with the qualification requirements for employees.

CRITERION 9. THE INVOLVEMENT OF THE EMPLOYERS IN THE REALIZATION OF THE PROGRAM

The policy of the Educational Facility encourages the participation of employers in the program. Employers are involved in the development of the program. For example, Deputy General Manager of JSC 'Integrated house-building factory' T. S. Antipkina is actively involved in developing of the content of disciplines for the BEP.

As for the Small Innovative Enterprise LLC 'Stroykompozit' (an experimental test area of the NEFU), the Director A. G. Kardashevsky, LLC "Vance +", director V. V. Narodov both are actively involved in the organization of the industrial and postgraduate practices, as well as the employment of the graduates.

Employers are involved in the development of the graduate qualification work, for example LLC 'Renaissance' suggested a theme of the project 'The workshop for the production of the bricks using dry pressing method in village Appani of the Namsky ulus' for the graduate student of 2012 M.K. Abdimezhitov, the results of which are used in the development of the business project for further implementation.

Employers are involved in workshops, master classes, for example, T.S. Antipkina holds classes at the production area of JSC 'Integrated house-building factory', JSC 'TechnoNikol' based at the Engineering and technical institute, organized the cabinet of insulating construction materials and conducts workshops and master classes involving senior students two times a year.

The training sessions 'Production and Business Management', 'Quality control of materials and structures' on the basis of JSC 'Integrated house-building factory' are conducted, in addition, sponsorship for the publication of educational and methodological literature, presentation stands (LLC 'SahaAkvaTerm' 'BAXI', 'Technonikol', 'SIBINKOM') is given.

CRITERION 10. THE PARTICIPATION OF STUDENTS IN THE DETERMINATION OF THE CONTENT AND ORGANIZATION OF EDUCATIONAL PROCESS WITHIN THE PROGRAM

At CTTBC and G chair there are student's scientific circle on a problem of biological, chemical, ecological education. The order № 2.1. Members of a student's scientific circle (biological, chemical, ecological education) have the right to define the plan of work of a student's scientific circle. Annually there are spent sociological polls of students during which decided the questions defining a level of satisfaction of students in definition of the content of curriculums. There is a system of encouragement of students for participation in definition of the content of the program and organisation of educational process: various competitions – “Best probationer of BGF”, university competition "methodologist" which allow to improve the content of the program and the organisation of educational process. Noting of requirements is carried out during the polls. Students have the right to choose independently days and time of IW. Students are involved in discussion of reports on self-inspection, at curator's hour in each group.

CRITERION 11. STUDENT SERVICES AT THE PROGRAM LEVEL

For many years awarding of the individual scholarships by employer for the specialties or training profiles is practiced at the Institute.

Within the limits of BEP the PCMS course the award is presented annually by JSC ‘Integrated house-building factory’. JSC ‘Integrated house-building factory’ is the official partner for production training for this specialty: training sessions, field trips, participation in the Final State Evaluation and implementation of the BEP are held.

In the Internet at <http://www.s-vfu.ru/> site students are given an open access to electronic scientific library of NEFU and web chair where students can watch and listen to interesting assembly lectures of best scientists of NEFU and other Russian high schools.

At biological-geographical faculty as of 11.02.2013 there are 37 students are trained on a commercial basis. These students have a possibility to pay training by credit, and also to use for training the educational credit received on favourable terms in partner-bank (Sberbank). Children of employees of NEFU who worked at university more than 15 years under the university Collective agreement are given the possibility to pay training at the expense of means of NEFU. As of 10.02.2013r at BGF at the expense of means of NEFU 2 students are trained (Safonova V.A., BH-11, Ushnitsky I.M., PP-11). On the basis of Charter of NEFU and Statute about current and intermediate certification of students of NEFU (see site of NEFU, sections "Documents" and “Administrative divisions”), the students who have shown good results in results in examinations, activity of scientific and public life of faculty and university have possibility to change paid training for budgetary. While transferring at a planned place by the commission on transfers and restoration of NEFU there is also considered a social and financial position of the student. As of 10.02.2013 in BGF 7 students are transferred from paid to a budgetary position. At excellent study, achievements in science, sports and art creativity in addition to the basic federal grant there are appointed nominal grants as support of talented student's youth organised by various funds and organisations. For example, grant of A.E.Kulakovskiy - 3, grant of A.E.Mordinov - 1, grant of G.R.Basharin - 1, grant of V.A.Protodjakonov - 1, grant of P.H.Starovatov-2, grant of S.P.Sidorova-2, grant of P.A.Petrov-2, grant of I.N.Barahov-2, grant of A.I.Kuzmin, the grant of F.G.Safronov-1, State grant of SR (Y) - 7.

Since 2011 NEFU for the best students arranges free Christmas vacation in the central cities of Russia (Moscow, St.-Petersburg). By the results of 2012 150 students have received the monetary award “Christmas vacation in Moscow and St.-Petersburg” for successful study, in scientific, sports, public and creative activity. The program of Christmas vacation includes the

extensive cultural program including acquaintance with Moscow and St.-Petersburg. The main event of vacation is visiting by students of NEFU together with the pro-rector on interaction with federal structures Alexey Tomtosov of a special economic zone of "Skolkovo".

The students of NEFU with personal statements and in case of available means of FSIO and corresponding documents are paid travel privilege for aviation and motor transport. For 2012 20 students of BGF got the travel privilege. In NEFU there is a system of organisation of a subsidized meals for students from socially-vulnerable segments, there is also a half paid voucher for a vacation center "Smena".

Today in NEFU there is great attention paid for productive leisure, physical development and for improvement of social conditions of students. All these actions are financed from means of NEFU. So, for the purpose of development of physical training and sports, propagation of a healthy way of life the federal university has got 180 units of training equipment. In yards' territory of Studying-laboratory and Main educational buildings, at stadium "Yunost" and in yards of hostels № 7-2, 7-1, 18, 20, 66-a, 66-b there are established sports training equipment.

In a hostel 17 (2) in 2012 a capital repairs has been done, round the building there are power saving sensors are installed, they are able to react to movement and automatically switched off, when the students leave their room. Besides, with a view of safety, on each floor in corridors and halls observation cameras are built in. On the territory of student campus there is a wireless Internet - wi-fi.

At university there are created all necessary conditions for students-invalids (hearing aids, ramps. Students with the limited abilities have flexible individual schedule of visiting of lecture lessons, competitions, and seminars).

Students are able to study additional programs and pass their training abroad. Annually the most scientifically-active part of students passes training courses in other countries, participating in the exchange program "Sever-severu" of University of Arctic regions. Training are held in Sweden, Norway, Finland, Iceland, etc. Northeast federal university has contracts (agreements): with faculty of sciences about Environment of the Earth of University of Hokkaido (Japan) for development of the academic and educational exchanges and cooperation between two universities; with University Lini (China), Pusansky university (Korea) for development of exchange programs and for working out of joint programs on the organisation of students practices. The sphere of its activity includes Magadan area, Chukotka that expands possibilities of passing practices.

Students have access to 27 courses to increase the level of foreign language (English, French, German, Turkish and Chinese languages). Courses are conducted by teachers of chair of foreign languages. Students are suggested courses for beginners of natural specialities and areas, communicative English and the practical English grammar, English language in sphere of professional communications, business English for 3-5 courses, etc.

The health services are organised in polyclinic № 5, polyclinic of NEFU (66 building) and in sanatorium "Smena". The sanatorium is located in the centre of student campus on the basis of a student's hostel to the address: Yakutsk, 17, Kalandarashvili St., hostel 6, blocks A and B. Near there are available pool, sports complex, computer centre, cultural centre "Sergeljahskye ogy", shops, drugstore, mail, etc.

Meals are arranged both in the buffet tables and in refectories of educational buildings and at food production facility № 5. The food production facility "Sergeleeh" includes the whole complex of public catering facilities - refectories of "Sergeleeh", institute of technology; cafe "Sergeleeh", at hostels № 6 block V № 7\1 № 8\1; buffets MTB, of medical and road institute, and also there are confectionery, meat-fish, vegetable, flour departments. Students of BGF have meals in a refectories and buffets of CFNS.

At biological-geographical faculty there are 3 computer classes intended for preparation of students to lessons with use of network resources of NEFU and informational Internet resources.

Since April, 1st, 2000 in NEFU there are Center of the Psychological help to students, where individual consultations are given, and psychological diagnostics is carried out, talks and seminars are delivered on different topics: Didactic adaptation (to training conditions in high school); Self-organising of the student; Stress removal before examinations, etc.; socially-psychological trainings are carried out.

At university there is a purposeful activity on support of small business, starting of new workplaces and help to students-businessmen. Within the limits of these actions annually in high school there are Days of student's business, seminars-trainings for the students, planning to open their business, competition of business projects among students-businessmen. At the initiative of the Center of career and students-businessmen of high school there were founded a public organisation "Council of students-businessmen of Sakha Republic (Yakutia)" which founders are 17 students-heads of the enterprises. The university together with Council opens a student's business incubator.

CRITERION 12. EVALUATION OF THE QUALITY OF APPLICANTS TRAINING

Reception rules in NEFU establish the lower limits of results of Unified State Examination for the entrants entering budgetary places. In 2012 the lower limits in biology - 42 points, in Russian language and social science - 40 points that is above the lower limits established by Federal Education and Science Supervision Agency in biology, Russian-36, social science – 39.

According to the reception rules in NEFU the winners and prize-winners of the final stage of the All-Russian Competition of schoolchildren (subject), winners of workshop conference «Step to the future» enter without examinations. Winners, prize-winners of the List of the Competition of schoolchildren (confirmed by the order of ME of the Russian Federation of 7.11.2011 №2598) are given privileges - a victory in biology, chemistry and to social science is estimated in 100 points.

Winners, prize-winners of NECS, graduates of faculty of pre-university education, specialization classes (a natural-science, physical and mathematical specialization), base schools with which there are long-term contracts, have advantage at equality of points.

In 2012 the lowest passing score of the enlisted entrants on budgetary places is -169; Unified State Examination grade point average in sum of results of Unified State Examination in 3 subjects - 58,2.

Professionally oriented work at faculty and chair will be organised on the basis of the plan of professionally oriented work, confirmed by rector of NEFU and Concepts of vocational counselling of NEFU for 2011-2019 (№ 238-ODES of 3/23/2011).

Chairs participate in all-university and faculty professionally oriented events:

Offsite "Days of university" - in 2011-2012 there were 20 offsite meetings with the general coverage of 2788 pupils of schools. In frameworks of professionally oriented offsite meetings with representatives of administrations, education departments, schools, with the public, parents, entrants, graduates, there are held courses on preparation for Unified State Examination and seminars for teachers, consultations of psychologists, there are signed contracts on cooperation.

"Doors Open Days at BGF" - spent 2012.28.03, all chairs took an active hand: dean Nikolaev A.N., Mihajlova N.V., Andreeva M.P, responsible for professional orientation work at

chair (Lazareva P.V., Gogolev P.V., Sleptsova N.P.). Annually take part more than 60 pupils and parents.

“Week of FPUEPO NEFU” - spent in October, 2012 for pupils from 5-11 classes of educational institutions of Yakutsk. In various events of a week have taken part more than 8 000 of schoolchildren from 35 schools, about 300 parents, 150 teachers of schools and 250 teachers of university, and other events.

At faculty it is constantly conducted advertising - informational work: issued booklets about faculty, areas of preparation with the general circulation more than 1 000 copies. In the university newspaper “Our university” there appeared heading “Compass of the Entrant”. According to the schedule there were published information about reception campaign of faculty, preparation areas, and also materials on preparation for Unified State Examination in biology, chemistry; articles: “How to be prepared for Unified State Examination in chemistry (Andreeva M. P., Nahova N.A.,” How to be prepared for Unified State Examination in biology” (Jakovleva A.V., Sofronov R.P.).

HETP of chair annually conducts consultations, lessons for potential entrants. First of all for pupils of contractual base schools, internally-correspondence school works within an academic year, teachers and students work in summer scientific camps, supervise research work of schoolchildren.

Matrix of learning outcomes for the course 270800.62 – Construction, profile production and use of building materials, products and structures

Generic name of competence of the area	Cognitive competence: to know, understand	Functional competence: can do, has the skill, practical experience	Expert evaluation
1. Professional Competence			
2.1. The research and scientific, research and surveying activities	1. Knows the basic laws of the natural sciences in the professional activity (PC-1)	1. Able to apply mathematical analysis and modelling, theoretical and experimental study (PC-1)	
	2. Knows the basic laws of geometric formation, structure and intersection of the models in plane and space (PC-3)	2. Able to identify the essence of the natural scientific problems arising in the course of professional activities, and use appropriate physical - mathematical apparatus for their solutions (PC-2)	
		3. Able to work with information in global computer networks (PC-6)	
		4. Possesses scientific and technical information (PC-17)	

Generic name of competence of the area	Cognitive competence: to know, understand	Functional competence: can do, has the skill, practical experience	Expert evaluation
		5. Has the skills to use mathematical modelling based on license packages of electronic design and research automation, methods of directing and conducting experiments using specified methodology (PC - 18)	
		6. Able to produce reports on the work performed, to participate in the implementation of research results and practical development (PC - 19)	
2.2. Organizational and management, engineering and manufacturing work	1. Understands the nature and value of the information in the development of modern information society, recognizes the dangers and threats that arise in this process (PC-4)	1. Able to comply with the basic requirements of information security, including the protection of state secrets (PC-4)	
	2. Knows at least one foreign language at the level of professional communication and translation (PC-7)	2. Able to use basic methods, ways and means of production, storage, processing of the information, computer skills as the way of managing information (PC-5)	
	3. Knows methods of engineering research, technology, design of the details and construction in accordance with the terms of technical task with the use of license calculating	3. Able to use the basic means to protect operating personnel and people from the possible consequences of accidents, natural disasters (PC-8)	


Generic name of competence of the area	Cognitive competence: to know, understand	Functional competence: can do, has the skill, practical experience	Expert evaluation
	applications and graphics software packages (PC - 10)		
	4. Know the legal framework in the field of engineering research, principles of constructional design of buildings, constructions, engineering systems and equipment, planning and housing of settlements (PC - 9)	4. Is capable of organizing jobs, their technical equipment and installation of processing technical equipment, monitoring of technological discipline and environmental safety (PC - 13)	
	5. Knows institutional framework of management and entrepreneurial activities (PC- 14)	5. Able to plan work of the personnel and labour compensation fund (PC - 14)	
	6. Knows the methods of implementation of innovative ideas, organization of production and the effective running of the personnel's work, preparing the documentation for developing a quality management	6. Is able to develop operational plans of the primary production units, conduct a cost benefit analysis of the production units' activities , develop the technical documentation, and set reporting on the approved forms (PC - 16)	

Generic name of competence of the area	Cognitive competence: to know, understand	Functional competence: can do, has the skill, practical experience	Expert evaluation
	system of the production unit (PC - 15)		
		7. Able to use methods of the evaluation of the technical condition and remaining life expectancy of buildings, equipment (PC - 22)	
		8. Capable of organizing of preventive examinations and maintenance, acceptance and development of construction projects and implemented equipment, to make an application for equipment and spare parts, prepare technical documentation and instructions for the operation and maintenance of the construction projects and equipment (PC - 23)	
2. Sector competence			
	1. Knows methods for developing the design documentation (PC - 3)	1. Knows how to perform and to read drawings of buildings, structures and components of structures (PC-3)	
	2. Knows the technology, methods, refine and mastering process of construction production, manufacture of construction materials, products and structures, machinery and equipment (PC - 12)	2. Able to conduct a preliminary feasibility study of design calculations, develop design and technical work documentation, issue complete design work, monitor compliance with development projects and technical documentation with the design task, standards, specifications and other regulations (PC - 11)	
	3. Knows national and foreign experience in the profile of the work (PC -	3. Able to undertake preparations of the documentation for quality management and standard methods of quality control of technological processes at manufacturing sites (PC-13)	


Generic name of competence of the area	Cognitive competence: to know, understand	Functional competence: can do, has the skill, practical experience	Expert evaluation
	17)		
	4. Knows the rules and technology of the construction, installation, testing and commissioning of structures, engineering systems and equipment of the construction projects, product samples produced by the enterprise (PC - 20)	4. Able to use methods of experimental testing of the equipment and technological support (PC - 21)	

CVs of EXPERTS


Expert's name: Ekaterina G. Pakhomova

Work place, position	Southwestern State University, Associate Professor of "Industrial and civil construction"
Academic degree, academic title	PhD in engineering
Deserved titles, degree	— 
Education	Higher
Professional achievements	More than 40 scientific publications, 15 of them on the are in the list of Higher Attestation Commission, 1 published monograph
Area of expertise	Serviceability of reinforced concrete structures with signs of corrosion
Practical experience in the direction of the program, subject to examination	12 years

Expert's name: Yevgeny I. Pakhomov

Work place, position	Regional budgetary institution "Kurskgrazhdanproekt", Deputy Director for Production
Academic degree, academic title	- 
Deserved titles, degree	-
Education	Higher
Professional achievements	5 scientific publications, 2 of them on the are in the list of Higher Attestation Commission, awarded a certificate of honor from the administration of Kursk region
Area of expertise	Serviceability of reinforced concrete structures with signs of corrosion
Practical experience in the direction of the program, subject to examination	13 years

Expert's name: Carlos Marmolejo Duarte

<p>Work place, position</p>	<p>International expert, Professor of the Department of Architecture at the Polytechnic University of the construction in Barcelona, Spain</p> 
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