




SUMMARY REPORT OF THE EXTERNAL EVALUATION

of the educational programmes in "The
Fundamental Informatics and
Information Technologies" and "Applied
Mathematics and Informatics"

delivered by
Dagestan State University



2013

While preparing this Summary Report we used information from the Self-Evaluation Report and the Report on the External Review of the educational programmes in "Applied Mathematics and Informatics" (010400.62) and "The Fundamental Informatics and Information Technologies" (010300.62, 010300.68) offered at Dagestan State University.

The presentation document for the use by the National Accreditation Board.

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GENERAL INFORMATION ON EDUCATIONAL INSTITUTION

Full name of the educational institution	<i>Federal State Budgetary Educational Institution of Higher Professional Education Dagestan State University (DGU)</i>
Founders	<i>Ministry of Education and Science of the Russian Federation</i>
Year of foundation	<i>1931 – Dagestan Teacher Training Institute 1957 – Dagestan State University</i>
Current state accreditation status:	
Type	<i>Educational Institution of Higher Professional Education</i>
Kind	<i>University</i>
Location	<i>Republic of Dagestan, Makhachkala, 43 A, M. Gadzhiev St.</i>
Rector	<i>Doctor of physical and mathematical sciences, Professor Murtazali Khulataevich Rabadanov</i>
License	<i>Series AAA No.002178 registration No.2083 of January 31, 2011; permanent</i>
State Accreditation	<i>Certificate of State accreditation No. 1602 of November 10, 2008 valid till November 10, 2013</i>
Number of students	<i>13,465</i>

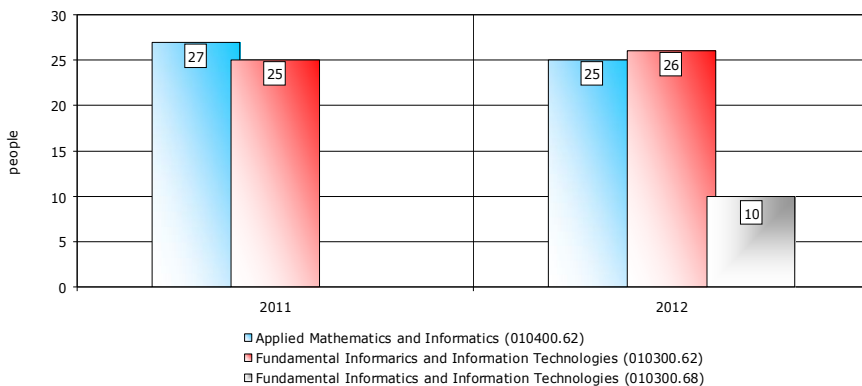
INFORMATION ON THE EDUCATIONAL PROGRAMMES UNDERGOING ACCREDITATION

Educational programmes	<i>"Applied Mathematics and Informatics"(010400.62) "The Fundamental Informatics and Information Technologies" (010300.62, 010300.68)</i>
Level of training / Standard period of training	<i>Bachelor's programme / 4 years Master's programme / 2 years</i>
Structural subdivision (head)	<i>Faculty of Mathematics and Computer Sciences (Doctor of Physical and Mathematical sciences , professor Ramazanov Abdul-Rashid Kakhrimanovich)</i>
Major departments (heads of major departments)	<i>Department of Higher Algebra and Geometry(Doctor of Physical and Mathematical sciences , professor Vagabov Abdulvagab Ismailovich) Department of The Theory of Functions and Functional analysis (Doctor of Physical and Mathematical sciences, professor. Sirazhudinov Magomet Magomeddalievich) Department of Mathematical Analysis (Doctor of Physical and Mathematical sciences, professor Ramazanov Abdurashid Kakhrimanovich) Department of Discrete Mathematics and Informatics (Doctor of Physical and Mathematical sciences , professor Magometov Abdulkarim Magometovich) Department of Applied Mathematics (Doctor of Physical and Mathematical sciences , professor Nazaraliev Magomet Shafi Akhmedovich)</i>
Date of the site visit	<i>26-28 June 2013</i>
Person responsible for public accreditation of the study programme	<i>Head of the International Relations Department Giraev Kamal Magomedovich</i>

SAMPLING RESULTS OF THE PROJECT 'THE BEST EDUCATIONAL PROGRAMMES OF INNOVATIVE RUSSIA'

Indicators	2012
Study programmes in Applied Mathematics and Informatics" and "The Fundamental Informatics and Information Technologies"	
Number of such programmes delivered in RF	368
Number of higher educational institutions delivering such programmes	194
Number of programmes – winners of the project (% from the total number of these programmes delivered in RF)	98 (27%)
Republic of Dagestan	
Number of such programmes delivered in the region	4
Number of programmes – winners of the project (% from total amount of these programmes delivered in the region)	3 (75%)
Number of higher educational institutions and branches in the region	54
Total number of programmes delivered in the region	394
Total number of programmes – winners of the project (% from the total number of these programmes delivered in the region)	21 (5%)

REFERENCE DATA ON STUDENT ENROLLMENT FOR PROGRAMMES IN APPLIED MATHEMATICS AND INFORMATICS AND THE FUNDAMENTAL INFORMATICS AND INFORMATION TECHNOLOGIES



ACHIEVEMENTS OF THE EDUCATIONAL PROGRAMME

2008 – 2012

186 research papers by undergraduate and postgraduate students were published (both independently and co-authored) including abstracts for conferences. Among this number 49 articles were published in the journals from the HAC (Higher Attestation Committee) list. 79% of all publications are written by the teaching staff of the Department of Discrete Mathematics and Informatics.

The students' works were rewarded with first degree diplomas, honorary certificates, and monetary awards at international, inter-regional and institutional competitions, conferences and fora.

The TFFA Department held an interuniversity mathematical Olympiad among 1st-5th year students. The winners were awarded honorary certificates and money gifts. Out of 12 awardees 8 are students of the Faculty of Mathematics and Computer Sciences.

Undergraduate and postgraduate students are engaged in grant activities of the DSU.

Undergraduate and post-graduate students of the Faculty of Mathematics and Computer Sciences who excel in academic and extracurricular work are awarded the President's scholarship.

The following software programmes developed by undergraduate and postgraduate students co-authored with the teachers of the DDMI Department were registered as inventions:

- Multimedia reading of A.S. Pushkin
- A Computer Map of the Republic of Dagestan
- Low case letter recognition in the Cyrillic script
- Clustering of sound signals
- Module testing
- Constructing a pair correlation function for blurred image registration of ordered structures
- The Electronic passport of equipment The software for optimal placement of transport systems objects and management of freight traffic flow in OOP Delphi and VBA for Excel
- Generating test points in the educational subject "Programming basics"
- A teacher's electronic assistant
- Comprehensive benchmarking of test results
- Test arranging
- Computing of the speed of performing of the fragments of hand-scripted signal
- VB-Audit of the teaching load distribution in an academic department
- A training simulator for the task "Robot" in the USE in Informatics
- Visual recognition of a blank test.

EXTERNAL REVIEW PANEL



Georgy Totkov (Bulgaria)
Review Chair, foreign expert

Doctor of mathematical sciences, professor, Vice-Rector for informatization, accreditation and distant learning of the University of Plovdiv

A nominee of the National Bulgarian Agency for Evaluation and Accreditation (Bulgaria)



Aleksandr Marakhovsky (Russia)
Deputy Review Chair

Doctor of economic sciences, professor, Chief of the Department of Applied Mathematics and Computer Technologies of the Institute of Information Technologies and Telecommunications of the North-Caucasian Federal University

A nominee of the Guild of Experts in the sphere of professional education (Russia)



Vladimir Navodnov(Russia)
Panel member

Doctor of technical sciences, professor, Director of the National Centre for Public Accreditation, Chief of the Department of Applied Mathematics and Information Technologies of the Volga State University of Technology

A nominee of the Guild of Experts in the sphere of professional education (Russia)



Ruslan Meylanov (Russia)
Panel member, representative of professional community

Doctor of physical and mathematical sciences, professor, Deputy Director for scientific work of the Institute of Geothermal Problems of the Dagestan Research Centre of the Russian Academy of Sciences

A nominee of the Guild of Experts in the sphere of professional education (Russia)



Muslimat Abdurakhmanova (Russia)
Panel member representative of students

4th year student of the Branch of the Russian State University of Tourism and Service in Makhachkala

A nominee of the National Centre for Public Accreditation (Russia)

COMPLIANCE OF THE EXTERNAL REVIEW OUTCOMES WITH THE NCPA'S STANDARDS

STANDARD 1. Policy (mission, vision) and procedures for quality assurance

Compliance with the standard: **partial compliance**

Good practice

DGU's strategic plan for the period of 2012-2016 states that the University is a research and educational complex providing education and training of personnel for the innovative economy and information society. It focuses on fundamental and applied research, designing and modernizing educational programmes in priority directions of development connected with the informatization of the society, innovative development of the economy, establishing the society of knowledge on the basis of modern information and communication technologies.

The mission, vision, goals and objectives which were developed with the participation of the University's management and the teaching staff promote effective implementation of the educational programmes.

The educational programmes under accreditation are developing according to the stated mission and strategic plan of DSU's development. The methods of achieving the set goals and their adjustment meet the requirements of the NCPA's Standards and Criteria. There are some elements of the internal quality assurance system in place at the Faculty.

Areas for improvement

The Faculty Development programme has weak correlation with the University Strategic plan. When defining the mission, vision, goals and objectives of the programmes under accreditation the opinion of students and employers were not taken into consideration

Employers are hardly ever invited to take part in the syllabus design and development.

The system of academic quality management needs further improvement.

Though there are elements of the inner quality assurance system in place at the Faculty, however, there is no integral quality assurance system.

STANDARD 2. Approval, monitoring and periodic review of study programmes

Compliance with the standard: **substantial compliance**

Good practice

Curricula and educational programmes are annually reviewed and updated according to the goals and outcomes of the study programmes: the content of the working programmes of academic subjects, teaching materials and methodological guidelines providing for the implementation of a relevant educational technology are updated to be in line with the modern developments in science, technology, information technologies, economy, culture and social policy.

The procedure of the curricula revision involves all the elements of professional educational programmes and is a starting point for developing plans of academic, methodological, human resource and material and technical provision of the teaching process for the next academic year.

When developing curricula there is a coordination and correlation between the content of different academic subjects, which are taught in their logical sequence. Elective courses are designed to supplement the core subjects determined by the federal requirements.

Curricula and educational programmes are periodically reviewed in accordance with the predetermined procedure approved by the University.

On a regular basis the Faculty conducts surveys on accessibility of the teaching materials, quality of teaching, and the content of the courses.

Areas for improvement

There is no on going up-dating and aligning of the content of academic subjects with the view of implementing best practice in the teaching of similar educational programmes in the leading national and international higher education institutions.

The opinion of students and employers when designing and updating syllabi and curricula is not taken into account systematically.

There is no follow up on the results of questionnaires and surveys on the quality of educational programmes.

STANDARD 3. Assessment of student learning outcomes / competencies

Compliance with the standard: **substantial compliance**

Good practice

The formative and summative assessment of student outcomes/competencies is regulated by the relevant normative documents.

The assessment of the quality of student outcomes is conducted throughout the whole period of study and involves various forms of testing, individual assignments, presentations, computer testing of selected groups, examinations and final state attestation.

The assessment of students' knowledge is conducted by experienced teachers who have sufficient professional qualification.

Students take part in University, Republican, national and international conferences and Olympiads.

Areas for improvement

Insufficient student mobility.

There are no clear and well defined criteria for assessment of student outcomes.

Insufficient knowledge of foreign languages of teachers and students.

STANDARD 4. Quality assurance of teaching staff

Compliance with the standard: **substantial compliance**

Good practice

The teaching staff is highly competent in the areas of knowledge relevant to the educational programme.

The teaching process is closely connected with research. The teachers take an active part in research financed by grants to include internal DSU grants for improvement of the teaching process in the programmes offered by the University.

The teachers regularly publish their research results in high ranking journals, take part in international, national and University conferences, seminars and exhibitions.

The staff of the Faculty has enough potential to be actively involved in international academic and research communities.

Areas for improvement

Insufficient participation of the teaching staff members in international research and academic projects.

Little attention is paid to fulfilling business contract projects.

There haven't been any visiting international lecturers.

Insufficient help in the editing and translating into English of research articles and materials and their preparation for publishing in international journals with a high impact factor.

INFORMATION ON THE LEADING TEACHERS OF THE STUDY PROGRAMMES

Ramazanov Abdul-Rashid

Doctor of Physical and Mathematical Sciences, professor, Dean of the Faculty of Mathematics and Computer Sciences, Honored educator of the Republic of Dagestan, author of 2 monographs and 100 scientific papers

Magomedov Abdulkarim

Doctor of Physical and Mathematical Sciences, professor, Head of the Department of Discrete Mathematics and Informatics, Honored teacher of the Republic of Dagestan, author of 149 scientific papers

Nazaraliev Magomed-Shafi

Doctor of Physical and Mathematical sciences, professor, Head of the Department of Applied Mathematics, Honored scientist of the republic of Dagestan, Academician of RANS, author of more than 100 scientific papers and 6 monographs

Sirazhudinov Magomed

Doctor of Physical and Mathematical Sciences, professor, Head of the Department of Function Theory and Function Analysis, Honored teacher of the Republic of Dagestan, Honored educator of the Russian Federation, author of more than 90 research papers

Luguev Timur

Candidate of Physical and Mathematical Sciences, assistant professor of the Department of Discrete Mathematics and Informatics, head of three grants on mobility within the Fulbright programme, author of 27 research papers

Abduragimov Elderkhann

Candidate of Physical and Mathematical Sciences, assistant professor of the Department of Applied Mathematics, Honored teacher of the republic of Dagestan, author of 70 research papers

STANDARD 5. Learning resources and student support

Compliance with the standard: **full compliance**

Good practice

The educational programmes are well provided with lecture rooms, laboratories and relevant equipment. Multimedia classrooms and internet resources are actively used by the students.

In many subjects there are readily available electronic versions of textbooks and teaching guidelines, and methodological materials developed by the University staff.

All academic subjects are provided with electronic educational resources, which are placed on the educational servers of the University.

Library reading rooms and computer classes are available for students' independent work.

The Office for Student Development Management, the Office for Information Policy, sports facilities are actively engaged in the developing of the social and cultural environment and student social support. These bodies cooperate with the Education and Methodology Department, Quality Management Department, Research Library, Student Law Enforcement Team and the Campus Management.

Areas for improvement

Low Internet speed hinders successful acquisition of educational programmes.

STANDARD 6. Information system providing effective implementation of the study programme

Compliance with the standard: **substantial compliance**

Good practice

The majority of educational subjects of major educational programmes of the Faculty of Mathematics and Computer Sciences are provided with electronic teaching recourses to include syllabi, study guidelines, text books, test books, and practice books. The teaching materials, electronic text books and manuals are available in the local intranet of the University and at the Faculty Departments.

The University Departments submit information on the student and teacher participation in conferences, competitions and Olympiads to the DSU management on a regular basis. The students' academic achievements are assessed with the help of a data base, which contains records of every student.

The information about the results of the conferences and competitions with the student participation is published at the University website.

Areas for improvement

University's own research resources are not used to the full extent to fulfill its own tasks.

The information system, though being developed consistently, has not been completed yet.

STANDARD 7. Public information

Compliance with the standard: **full compliance**

Good practice

The public is kept informed through the website of the University, the Institute and the Departments, through mass media and reference books for prospective students.

The teaching staff participate in the meetings with prospective students, in University Olympiads in Mathematics and Informatics, provide consultancy on how to prepare for USE and others.

Career-guidance work is carried out according to the annual plan at the faculty. The public is informed through traditional annual Open Door Events for prospective applicants to the University.

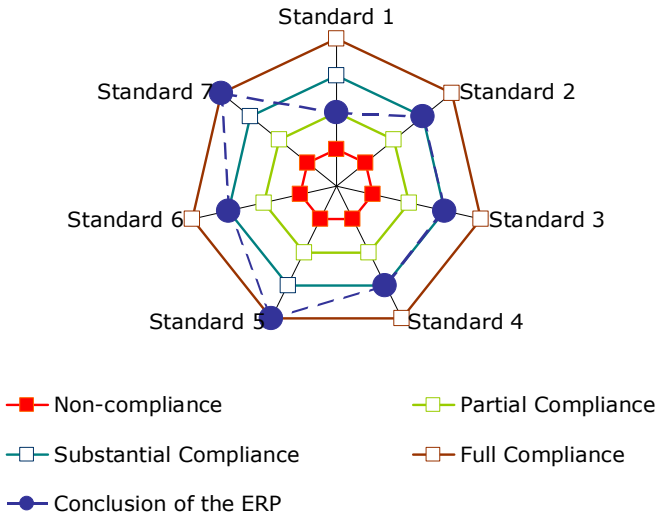
The labor market demand for graduates and their employability are monitored. The information is published on the University intranet.

The results of the job placement analysis are discussed at the meetings.

Areas for improvement

The Faculty of Mathematics and Computer science do not maintain close connections with the graduates of the educational programmes under accreditation.

DISTRIBUTION DIGRAM OF THE EXTERNAL REVIEW OUTCOMES



- Standard 1. Policy (mission, vision) and procedures for quality assurance
- Standard 2. Approval, monitoring and periodic review of programs and qualifications
- Standard 3. Assessment of student learning outcomes / competencies
- Standard 4. Quality assurance and competencies of teaching staff
- Standard 5. Learning resources and student support
- Standard 6. Information system providing effective implementation of the study program
- Standard 7. Public information

CONCLUSION OF THE EXTERNAL REVIEW PANEL

Based on the self-evaluation report analysis, documents and data submitted, interviews with the representatives of the professional communities, students, post graduates, doctor-degree students, staff and administration of the educational institution the External Review Panel came to the conclusion that study programmes "Applied Mathematics and Informatics" (010400.62) and "The Fundamental Informatics and Information Technologies" (010300.62, 010300.68) offered at Dagestan State University to a large degree comply with the standards and criteria of public accreditation of the National Centre for Public Accreditation.

The expert panel has been favorably impressed by a highly developed information system providing for an effective delivery of the educational programmes; a well developed social infrastructure accommodating the heterogeneous student body; availability of up-to-date library and information resources.

The panel also notes high corporate spirit, which manifests itself in the commitment of the DSU staff to the values, goals and principles of the HEI, and the sense of students' belonging.

The Panel recommend that the National Accreditation Board **to accredit the study programmes "Applied Mathematics and Informatics" (010400.62) and "The Fundamental Informatics and Information Technologies" (010300.62, 010300.68) for the period of 6 years.**

SCHEDULE OF THE SITE VISIT OF THE EXTERNAL REVIEW PANEL

Time	Activity	Participants	Venue
26 June, Wednesday			
08.45	Arrival at DSU		Administrative Building of DSU
09.00 – 10.00	The first meeting of the Review Panel members and coordinators of the review of the educational programmes of DSU		Administrative Building of DSU, conference-hall
10.00 – 11.00	Meeting of the ERP with the university administration	Rector, vice-rectors, deans of the faculty, ERP	Administrative Building of DSU, conference-hall
11.00 – 13.00	Excursion around the university	ERP	Faculties of DSU, Scientific Library of DSU, Historical Museum, etc.
13.00 – 14.00	Lunch		Faculty of Mathematics and Computer Sciences (FMCS) of DSU
14.00 – 15.00	Meeting with DSU staff members responsible for accreditation and chairs of the educational programmes under review	Dean of FMCS, deputy deans, people responsible for the review, ERP	Deanery of FMCS
15.00 – 15.30	Internal meeting of the ERP	ERP	FMCS, room 65
15.30 – 16.30	Meeting with chairs of the educational programmes under review	Chairs, ERP	FMCS, room 62
16.30 – 17.00	Work with documentation	ERP	FMCS, room 65
17.00 – 18.00	Meeting with representatives of the professional community	Representatives of the professional community, ERP	FMCS, room 62
18.00 – 18.30	Internal meeting of the ERP	ERP	FMCS, room 65
27 June, Thursday			
09.45	Arrival at DSU		FMCS of DSU
10.00 – 11.00	Meeting with 1st and 3rd year students	Students, ERP	FMCS, room 62
11.00 – 11.30	Internal meeting of the ERP	ERP	FMCS, room 65
11.30 – 12.00	Meeting with PhD and doctorate students	PhD and doctorate students, ERP	FMCS, room 62
12.00 – 12.30	Internal meeting of the ERP	ERP	FMCS, room 65
12.30-13.00	Work with documentation	ERP	FMCS, room 65
13.00 – 14.00	Lunch		FMCS of DSU

Time	Activity	Participants	Venue
14.00 – 15.00	Meeting with teaching staff	Teaching staff, ERP	FMCS, room 62
15.00 – 16.00	Work with documentation	ERP	FMCS, room 65
16.00 – 17.00	Meeting with alumni	Alumni, БЭК	FMCS, room 62
17.00-18.00	Internal meeting of the ERP	ERP	FMCS, room 65
28 June, Friday			
08.45	Arrival at DSU		FMCS of DSU
09.00 – 10.00	Internal meeting of the ERP	ERP	FMCS, room 65
10.00 – 11.00	Meeting with 4th and 5th year students	Students, ERP	FMCS, room 62
11.00 – 13.00	Internal meeting of the ERP: discussion of preliminary results of the site visit, preparation of the oral report of the panel	ERP	FMCS, room 65
13.00 – 14.00	Lunch		FMCS of DSU
14.00-15.00	Closing meeting of the Review Panel with the DSU representatives	ERP, administration, chairs of the major departments, teaching staff, students	Administrative Building of DSU, conference-hall
17.00	Departure of the ERP members		