



Национальный
исследовательский
**Томский
государственный
университет**



SUMMARY REPORT


on public accreditation of the cluster of educational
programmes in

«Physiology, Biochemistry, Biotechnology and
Bioinformatics of Plants and Microorganisms»

in the field of study

«Biology»(06.04.01)

delivered by National Research Tomsk State University



2018

While preparing this presentation we used information from the Self Evaluation Report and the Report of the External Review Panel of the educational programme «Physiology, Biochemistry, Biotechnology and Bioinformatics of Plants and Microorganisms» in the field of study «Biology» (06.04.01) delivered by National Research Tomsk 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 Autonomous Educational Institution of Higher Education «National Research Tomsk State University»</i>
Founders	<i>the Russian Federation, Ministry of Education and Science of the Russian Federation</i>
Year of foundation	<i>1878 — Siberian Imperial University 1888 — Tomsk University 1934 — Kuibyshev Tomsk University 2002 — State Educational Institution of Higher Professional Education «Tomsk State University» 2011 — Federal State Budgetary Educational Institution of Higher Professional Education «National Research Tomsk State University» 2014 — Federal State Autonomous Educational Institution of Higher Education «National Research Tomsk State University»</i>
Location	<i>36, Lenina Pr., Tomsk, 634050, Russian Federation</i>
Rector	<i>Eduard Galazhinskiy, Doctor of Psychological Sciences, Professor</i>
License	<i>Series 90Л01 №8044 reg. № 1067 dated 28.07.2014 permanent</i>
State accreditation	<i>Certificate of State Accreditation Series 90A01 № 2731, reg. №2603 dated 29.05.2017 valid till 29.05.2023</i>
Number of students	<i>13647 including: full-time 10640 on-site and off-site 1045 part-time 1962</i>

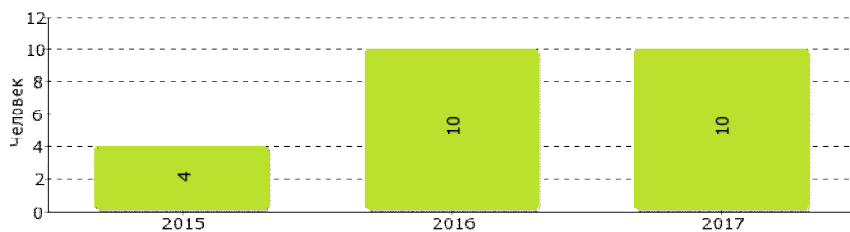
INFORMATION ON THE EDUCATIONAL PROGRAMMES UNDERGOING ACCREDITATION

Educational programmes	<i>«Physiology, Biochemistry, Biotechnology and Bioinformatics of Plants and Microorganisms» (06.04.01)</i>
Level of training / Standard period of training	<i>Master's Degree Programme / 2 years</i>
Structural subdivision (head)	<i>Institute of Biology, Ecology, Soil Science, Agriculture and Forestry (Danil Vorobiev, Doctor of Biological Sciences)</i>
Major departments (heads)	<i>Department of Plant Physiology and Biotechnology (Olga Karnachuk, Doctor of Biological Sciences, Professor)</i>
Date of the site visit	<i>08-10 November 2017</i>
Person responsible for public accreditation	<i>Ludmila Sokolianskaya, Assistant of the Department of Plant Physiology and Biotechnology</i>

SAMPLING RESULTS OF THE PROJECT «THE BEST EDUCATIONAL PROGRAMMES OF INNOVATIVE RUSSIA»

Indicators	2017
Cluster of the educational programmes «Biology» (06.04.01)	
Number of the given programmes in the RF	83
Number of higher educational institutions to offer the given programmes	83
Number of programmes – winners of the project (% from total amount of these programmes offered in the RF)	14 (16,7%)
Tomsk Region	
Number of the given programmes offered in the region	2
Number of programmes – winners of the project (% from total amount of these programmes offered in the region)	1 (50%)
Number of higher educational institutions and branches in the region	16
Total number of programmes offered in the region	325
Total number of programmes – winners of the project (% from total amount of these programmes offered in the region)	88 (27,1%)

REFERENCE DATA ON STUDENT ENROLLEMENT FOR EDUCATIONAL PROGRAMMES



■ Физиология, биохимия, биотехнология и биоинформатика растений и микроорганизмов (06.04.01)

ACHIEVEMENTS OF THE EDUCATIONAL PROGRAMMES

Quality of the delivered educational programmes

Clearly defined purposes and expected outcomes are oriented to the requirements of the labour market and correspond to the requirements of strategic documents and federal and regional programmes.

Providing up-to-date contents of education

The programme «Physiology, Biochemistry, Biotechnology and Bioinformatics of Plants and Microorganisms» is the part of the Institute of Biomedicine, centre of biomedical technologies that improves the quality of human life and provides active longevity and development of translational biomedicine.

Implementation of the programme is based on close cooperation with the subject-specific enterprises and organizations: Timiryazev Institute of Plant Physiology of the Russian Academy of Sciences (Moscow), Vinogradskii Institute of Microbiology of the Russian Academy of Sciences (Moscow), Institute of Cytology and Genetics of the Siberian Branch of the Russian Academy of Sciences (Novosibirsk), National Research Centre (Marseille, France), the University of Glasgow (Great Britain), University of Vienna (Austria), the University of Bern (Switzerland), Uppsala University (Sweden).

Students participate in different competitions, grants, conferences, scientific seminars. Structural subdivisions of the University financially support students.

There is an information network at the University that meet the requirements of the educational process (Electronic Library, Electronic Catalogue, Citation Bases Scopus, Web of Science, e-Library, resources Springer, journals Elsevier, Oxford University Press, East View, Polpred, JSTOR, systems «Persona», «Student», etc.).

Laboratories of the Department of Plant Physiology and Biotechnology are provided with modern equipment. The University cooperates with the Siberian Botanic Garden, the Centre of the Russian Academy of Sciences «Bioengineering», organizations «ECOIL», «IFAR», «Biolit», «Art-Life», «Evalar», «Virion», «Microgen», «Tomsk Beer», the Research Institute of Agriculture and Bog Muck, etc.).

Teaching staff

99,35% of teachers have basic education that corresponds to specialization. Academic degree holders rate is 81,33%. 20,07 % of teachers are invited directors and workers of subject-specific organizations. 20 teachers work with the educational programme.

100% of teachers have experience of work in scientific organizations or subdivisions of the University.

Foreign (USA, France, Great Britain) and national experts are involved in the educational process.

Independent assessment of knowledge

The programme «Physiology, Biotechnology, Biochemistry and Bioinformatics of Plants and Microorganisms» passed state accreditation for compliance with the Federal State Education Standards dated September 23, 2015 till 2023.

Presentation of the graduation works, reviews of teachers, chairs of the State Examination Commissions and employers, wins in various competitions allow to assess professional competences of students.

Not less than 50% of members of the State Examination Commission are employers. They are involved in independent assessment of learning outcomes. Employers assess students' knowledge independently.

Educational resources

Material and technical resources include:

- multimedia classrooms for lectures and seminars;
- rooms for independent work of students are provided with computer equipment with an access to the Internet;
- research and educational centre «Biotechnology of Plants and Microorganisms»;
- resources of a museum complex.

There are computer classes of collective use in the research library of the University. There is an information centre in the Research library that works 24 hours a day, 7 days a week. Students serve internships in the laboratories of the Department and scientific organizations, as well as at the enterprises of the real sector of economy provided with modern technological equipment.

Research activity

Teachers and students participate in the projects organized together with the foreign partners of the University, seminars and different scientific conferences. They publish articles in the journals of RSCI, Scopus and Web of Science.

Academic mobility of students

The University financially supports students for participation in the short-term programmes of academic mobility. Financing of the following kinds of mobility is provided on a competitive basis: participation in international summer schools, scientific and educational seminars, international conferences, short-term exchange programmes and joint student research projects.

Employability of graduates

Every year graduates of the bachelor's degree programmes apply for the educational programme (not less than 10 applications; the passing score is 178-180; the average score in the diploma is 4,0). More than a half of applicants are from other higher education institutions, including

the universities of the Republic of Kazakhstan. Employability of students of master' degree programme is 80%.

International projects

The Department of Plant Physiology and Biotechnology cooperates with the Laboratory of Bacteria Chemistry of the National Centre for Scientific Research (France), the University of Glasgow (Great Britain), the Ohio State University (USA). It is approved by joint publications and joint scientific projects.

EXTERNAL REVIEW PANEL



Sergei Medvedev (Saint-Petersburg)

Review Chair, Russian expert

Doctor of Biological Sciences, Professor, Head of the Department of Physiology and Plants Biochemistry, Head of the Laboratory of Biology of Plants Development, Saint-Petersburg State University, Vice-President of the Russian Society of Physiologists of Plants

A nominee of the Guild of Experts in Higher Education



Olga Chertilina (Tomsk)

Panel member, representative of the professional community

Candidate of Biological Sciences, Chief Specialist of the Committee for Production of the Department for Social and Economic Development of the Villages in the Tomsk Region

A nominee of the Department for Social and Economic Development of the Villages in the Tomsk Region



Maria Galyamova (Novosibirsk)

Panel member, representative of the professional community

Director of the Siberian Centre for Development of Biotechnologies and Medicine «SibBioMed», member of the Transregional Association of Heads of Enterprises

A nominee of the Transregional Association of Heads of Enterprises



Vladimir Umirkhanov (Tomsk)

Panel member, representatives of students

5th year student of the Faculty of Behavioral Medicine and Management, Siberian State Medical University, Ministry of Healthcare of the Russian Federation, Chair of the Tomsk Regional Office of the Russian Non-Governmental Organization «Russian Student Union», coordinator of the Tomsk Regional Office of the Russian Social Movement «Volontery Pobedy»

A nominee of the Russian Non-Governmental Organization «Russian Student Union»



Olesia Orlova (Novosibirsk)

Supervisor

Doctor of Philological Sciences, Deputy Minister of Education, Science and Innovation Policy of the Novosibirsk Region

INFORMATION ON THE LEADING TEACHERS OF THE EDUCATIONAL PROGRAMMES

Olga Karnachuk

Doctor of Biological Sciences, Professor, Head of the Department of Plant Physiology and Biotechnology

Irina Golovatskaia

Doctor of Biological Sciences, Professor of the Department of Plant Physiology and Biotechnology

Yulia Frank

Candidate of Biological Sciences, Supervisor of the Programme, Associate Professor of the Department of Plant Physiology and Biotechnology

Vladimir Kuznetsov

Doctor of Biological Sciences, Professor, Head of the Laboratory of Physiological and Molecular Adaptation Mechanisms, Timiryazev Institute of Plants Physiology

Aleksei Churin

Doctor of Medical Sciences, Head of the Department of Medicinal Toxicology in the Goldberg Research Institute of Pharmacology and Regenerative Medicine, Tomsk National Research Medical Centre

Elena Daineko

Doctor of Biological Sciences, Professor, Head of the Laboratory of Biological Engineering of Plants, Institute of Cytology and Genetics of Siberian Branch of the Russian Academy of Sciences

Marina Efimova

Candidate of Biological Science, Associate Professor of the Department of Plant Physiology and Biotechnology

COMPLIANCE OF THE EXTERNAL REVIEW OUTCOMES WITH THE STANDARDS

STANDARD 1. Policy (goals, development strategy) and quality assurance procedures of the educational programme

Compliance with the standard: **substantial compliance**

Good practice:

Quality policy is developed. Surveillance audits are regularly carried out.

The Centre of Public and International Accreditation of the Educational Programmes carries out active monitoring of the University educational programmes on assessment of their correspondence to the requirements of accrediting organizations.

The University administration stimulates the Faculties and Departments to pass independent accreditation of the educational programmes.

Areas for improvement:

It is recommended to regularly hold opinion surveys of teachers and students about contentment with the educational process (the last survey was held in 2012 by the Centre of Quality Management) to get up-to-date information about effectiveness of the internal system of quality assurance.

It is advisable to reconsider infrastructure of subdivisions connected with the issues of education quality.

STANDARD 2. Design and approval of programmes

Compliance with the standard: **full compliance**

Good practice:

Purposes of the educational programme and expected learning outcomes are clearly defined and correspond to the contents of the programmes.

Structure of the programme and its contents take into account the requirements of professional standards and the regional labour market.

STANDARD 3. Student-centered learning and assessment

Compliance with the standard: **substantial compliance**

Good practice:

The additional training is carried out for the students who came from other universities.

Individual learning paths are developed.

Areas for improvement:

It is recommended to provide for a feedback system with students based on the results of questionnaire. It is advisable to provide the possibility of learning the results of questionnaire.

It is advisable to hold the student conference connected to the competition UMNİK. It will enhance prestige of the conference.

It is necessary to improve training of the English language.

STANDARD 4. Student admission, support of academic achievements and graduation

Compliance with the standard: **full compliance**

Good practice:

Work on career guidance of applicants is effective.

A systematic work on support of students' academic progress is carried out.

Students get information about grants and scientific competitions.

STANDARD 5. Teaching staff

Compliance with the standard: **full compliance**

Good practice:

A highly qualified teaching staff works at the Department.

The results of scientific work are used in the educational process.

The Department actively cooperates with leading foreign and Russian scientific centres.

STANDARD 6. Learning resources and student support

Compliance with the standard: **full compliance**

Good practice:

Library and information resources provide huge possibilities for academic and research activities.

The programmes of academic mobility for students are implemented. There are different supplementary courses for all students. The University supports students financially and non-financially.

STANDARD 7. Collection, analysis and use of information for managing the educational institution

Compliance with the standard: **substantial compliance**

Good practice:

Information about all activities of the University is available for the public.

Structural subdivisions of the University have own systems of collection and presentation of information in the local and open networks.

The results of questionnaire of students and teachers are systematized and analyzed.

Areas for improvement:

It is recommended for the teachers of the Department to use information resources of the Biological Institute and the University more actively. It is advisable to improve their qualification in work with information resources and the electronic educational environment.

It is recommended to actively use information technologies in assessment of learning outcomes and receiving feedback from students and employers.

STANDARD 8. Public information

Compliance with the standard: **substantial compliance**

Good practice:

Information about the programme is available on the University web-site.

There is a page of the University in the social network «vk». This page and the official web-site of the Institute are informative and available for stakeholders.

Areas for improvement:

It is recommended to develop information materials about achievements of the programme, leading teachers, successful students and graduates.

It is advisable to regularly renew information about success of graduates and teachers on the web-site of the Biological Institute and in social networks.

It is necessary to provide for close cooperation with the regional labour market.

It is recommended to inform and motivate students for postgraduate studies.

STANDARD 9. On-going monitoring and periodic assessment of the educational programmes

Compliance with the standard: **substantial compliance**

Good practice:

There are regulated procedures of monitoring and renew of the educational programmes.

Surveillance audits of quality of programmes' implementation are regularly carried out.

Employers are involved in the educational process.

Areas for improvement:

It is recommended to provide regular feedback with employers and graduates of the programme with the help of various forms of opinion polls.

It is advisable to carry out benchmarking of the educational programme and its correction on the basis of the benchmarking results.

It is necessary to create an expert or academic board in the Biological Institute that will carry out monitoring of effectiveness of the educational programme and prepare recommendation on their improvement.

It is recommended to provide for the effective system based on the results of various internal audits and monitoring of the educational programme by different administrative and academic subdivisions of the University.

STANDARD 10. Cyclical external quality assurance of the educational programmes

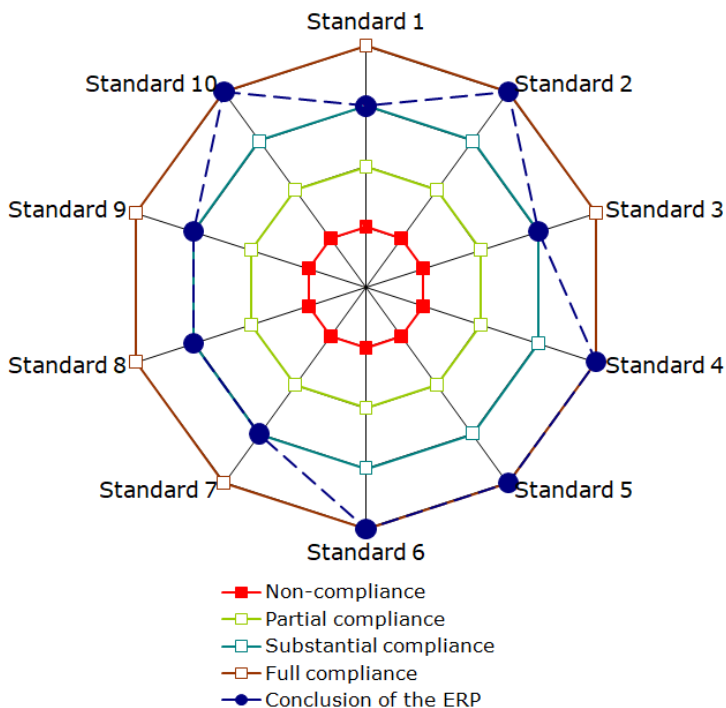
Compliance with the standard: **full compliance**

Good practice:

The educational programme passed state accreditation. There are no remarks.

It is the first programme of the Biological Institute that passes public accreditation.

DISTRIBUTION DIGRAM OF THE EXTERNAL REVIEW OUTCOMES



- Standard 1. Policy (goals, development strategy) and quality assurance procedures of the educational programmes
- Standard 2. Design and approval of programmes
- Standard 3. Student-centered learning, teaching and assessment
- Standard 4. Student admission, support of academic achievements and graduation
- Standard 5. Teaching staff
- Standard 6. Learning resources and student support
- Standard 7. Collection, analysis and use of information for managing the educational institution
- Standard 8. Public information
- Standard 9. On-going monitoring and periodic assessment of the educational programmes
- Standard 10. Cyclical external quality assurance of the educational programmes

CONCLUSION OF THE EXTERNAL REVIEW PANEL

Based on the self-evaluation report analysis, documents and data submitted the External Review Panel has come to the conclusion that the educational programme «Physiology, Biochemistry, Biotechnology and Bioinformatics of Plants and Microorganisms» in the field of study «Biology» (06.04.01) **fully comply** with the standards and criteria of public accreditation of the National Centre for Public Accreditation.

The Panel recommends that the National Accreditation Board accredit the educational programme «Physiology, Biochemistry, Biotechnology and Bioinformatics of Plants and Microorganisms» in the field of study «Biology» (06.04.01) delivered by National Research Tomsk State University for the period of **6 years**.

SCHEDULE OF THE SITE VISIT OF THE EXTERNAL REVIEW PANEL

Time	Activity	Participants	Venue
November 8, Wednesday			
8.45	Arrival at the University		
09.00 – 11.00	The first meeting of the external review panel		Room 322, Main Building
11.00 – 12.00	Meeting of the ERP with the University administration and people responsible for accreditation	Rector, Vice-Rectors, people responsible for accreditation, ERP	Room 209, Main Building
12.00 – 13.00	Tour of the University	ERP	
13.00 – 14.00	Lunch		cafe "Minutka", Main Building
14.00 – 14.45	Visiting the Research Library of the University	ERP	Research library of the University
15.00 – 16.00	Work with documents	ERP	Room 322, Main Building
16.00 – 17.00	Meeting with the Institute Directors/Deans	Institute Director, Deputy Directors, ERP	Room 316, Main Building
17.00 – 17.30	Internal meeting of the ERP	ERP	Room 322, Main Building
17.30 – 18.00	Meeting with graduates	Graduates, ERP	Room 316, Main Building
18.00 – 18.30	Internal meeting of the ERP	ERP	Room 322, Main Building

November 9, Thursday			
9.45	Arrival at the University		
10.00 – 11.00	Meeting with teachers	Teachers, ERP	Room 316, Main Building
11.00 – 11.30	Internal meeting of the ERP		Room 322, Main Building
11.30 – 12.30	Meeting with students	Students, ERP	Room 316, Main Building
12.30 – 13.00	Internal meeting of the ERP		Room 322, Main Building
13.00 – 14.00	Lunch		cafe "Minutka", Main Building
14.00 – 15.00	Meeting with workers of the Department for Development of Education Quality, the Department for Internships and Employability, the Accreditation Centre of the University	Representatives of the University subdivisions, ERP	Room 316, Main Building
15.00 – 16.00	Visiting laboratories	ERP	Room 012, 015, Laboratories of Biotechnology, Main Building, Room 55, 78, Laboratory of Biochemistry and Molecular Biology
16.00 – 17.00	Meeting with the Head of the Department	Head of the Department, ERP	Room 316, Main Building
17.00 – 18.00	Meeting with representatives of the professional community	Representatives of the professional community, ERP	Room 316, Main Building
18.00 – 18.30	Internal meeting of the ERP		Room 322, Main Building
November 10, Friday			
8.45	Arrival at the University		
09.00 – 12.00	Internal meeting of the ERP: discussion of preliminary results of the site visit, preparation of the oral report of the panel	ERP	Room 322, Main Building
12.00 – 13.00	Closing meeting of the External Review Panel with the representatives of the University	ERP, University administration, Heads of the Graduate Departments, teachers, students	Room 209, Main Building
13.00 – 14.00	Lunch		cafe "Minutka", Main Building
	Departure		