SUMMARY REPORT

on public accreditation of the cluster of educational programmes in

«Applied Informatics» (09.03.03, 09.04.03)

delivered by Togliatti State University

2018

While preparing this Summary Report we used information from the Self-Evaluation Report and the Report on the External Review of the cluster of educational programmes in «Applied Informatics» (09.03.03, 09.04.03) delivered by Togliatti State University.

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

CONTENTS

GENERAL INFORMATION ON EDUCATIONAL INSTITUTION

Full name of the educational institution	*Federal State Budgetary Educational Institution of Higher Education «Togliatti State University»*
Founders	*Ministry of Education and Science of the Russian Federation*
Year of foundation	*1951 — branch of Kuibyshev Industrial Institute* *1967 — Togliatti Polytechnic Institute* *2001 — Togliatti State University*
Location	*445667, 14, Belorusskaia Str., Togliatti*
Rector	*Mikhail Krishtal, Doctor of Physical and Mathematical Sciences, Professor*
License	*Series 90Л01 №9363 reg. № 2300 of 03.08.2016 permanent*
State accreditation	*Certificate of State Accreditation Series 90A01 № 2524, reg. №2401 of 07.12.2016 valid till 11.03.2019*
Number of students	*14179* *including:* *full-time 5591* *on-site and off-site 177* *part-time 8411*

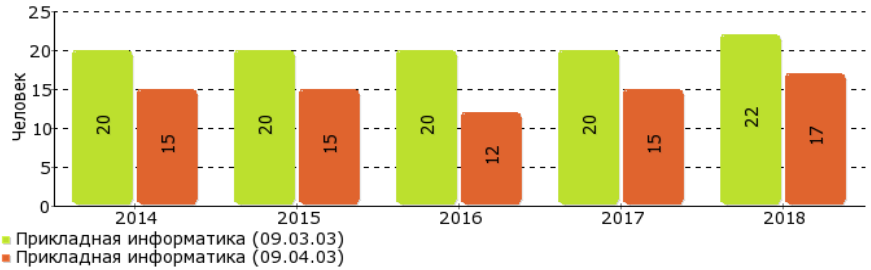
INFORMATION ON THE EDUCATIONAL PROGRAMMES UNDERGOING ACCREDITATION

Educational programmes	*«Applied Informatics» (09.03.03) ,* *«Applied Informatics» (09.04.03)*
Level of training / Standard period of training	*Bachelor's Degree Programme / 4 years* *Master's Degree Programme / 2 years*
Structural subdivisions (head)	*Institute of Mathematics, Physics and Information Technologies (Sergei Talalov, Doctor of Physical and Mathematical Sciences, Associate Professor)*
Major departments (heads of major departments)	*Department of Applied Mathematics and Informatics (Andrei Ochepovskii, Candidate of Engineering Sciences, Associate Professor)*
Date of the site visit	*May 29-31, 2018*
Person responsible for public accreditation of the study programmes	*Andrei Ochepovskii, Candidate of Engineering Sciences, Associate Professor, Head of the Department of Applied Mathematics and Informatics*

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

Indicators	2018
Cluster of the educational programmes in «Applied Informatics» (09.03.03, 09.04.03),	
Number of the given programmes in the RF	776
Number of higher educational institutions to offer the given programmes	398
Number of programmes – winners of the project (% from total number of these programmes offered in the RF)	58 (7,5%)
Samara Region	
Number of the given programmes offered in the region	20
Number of programmes – winners of the project (% from total number of these programmes offered in the region)	0 (0%)
Number of higher educational institutions and branches in the region	45
Total number of programmes offered in the region	531
Total number of programmes – winners of the project (% from total number of these programmes offered in the region)	87 (16,4%)

REFERENCE DATA ON STUDENT ENROLLEMENT FOR EDUCATIONAL PROGRAMMES



ACHIEVEMENTS OF THE EDUCATIONAL PROGRAMMES

Quality of the delivered educational programmes

High quality of the delivered study programmes is provided by effective selection of applicants and is approved by success of students on competitions and Olympiads and high demand of graduates.

Provision of up–to-date education

The basic educational programmes in the field of study «Applied Informatics» (Bachelor and Master levels) were discussed by experts of the professional IT community at the meeting of the TSU Coordination Board on education in the sphere of information technologies (IT). Not less than twice a year the IT Board discusses learning outcomes, quality of graduates' training and takes corresponding corrective measures.

Orientation and content of disciplines are justified as a result of cooperation with the TSU IT Council.

Teaching staff

A highly qualified teaching staff works at the Faculty. 90% of teachers of the Master's degree programme and more than 60% of teachers of the Bachelor's degree programme have academic degrees. There are 1 Doctor of Physical and Mathematical Sciences, 3 Doctors of Engineering Sciences and 13 Candidates of Sciences.

Research activity

Students are involved in project and research activities in the frames of work of the youth engineering centre «IT Student»; they publish research articles and theses and present the results of research at conferences and competitions. By the time of defense of the master's thesis 100% of graduates have 2-3 articles of RSCI. During research activities students get acquainted with innovations in the sphere of IT technologies and the new developments in education, science and technology.

The amount of grants at the Department is increased due to sufficient technical equipment, high qualification of staff and research and academic activity of students. In 2017 the teaching staff earned 0,25 million rubles due to research and development activity, published 41 articles of RSCI and 2 articles of Web of Science and Scopus. In 2016 1 thesis for the Doctor's degree was defended.

Every year the Department of Applied Mathematics and Informatics organizes the International Research Conference of Young Scientists «Applied Mathematics and Informatics: Recent Studies in Natural and Engineering Sciences» to share outcomes of research and experience on the issues of interdisciplinary research in Mathematics, Theoretical and Applied Informatics, Economics, and Social Studies. In 2018 this conference was supported by the grant of the Russian Foundation for Basic Research № 18-31-10012\18.

In 2017 the students project «Medic» developed in the IT-Student Centre won the competition «UMNIK–NTI» for 500 thousand rubles and became the prize winner of «Tsifrovye Vershiny» (Digital peaks) in the nomination «Student Works» on December, 2017.

The Department of Applied Mathematics and Informatics organizes the Annual Russian Research Conference «Information Technologies in Modeling and Management: Approaches, Methods, Solutions» on the issues of interdisciplinary research in Mathematics, Theoretical and Applied Informatics, Economics, and Humanities. The results of research help to exchange ideas, discuss achievements and define up-to-date and prospective areas of research and developments.

Academic mobility of students

The Department of Applied Mathematics and Informatics actively develops mobility of students who participate in travel-grants, national and international research conferences, Olympiads, competitions and hackathons (competitions of programmers).

Employability of graduates

Graduates of the Department are in demand on the labour market. They work in data processing centres and IT-subdivisions of different organizations, including the state ones; IT-companies that develop, introduce and support IT-products; research and development organizations, centres, institutes; information and economic services and departments of enterprises; computer centres and services of computer telecommunications; IT-companies that develop software packages, etc.

Every year 30-35 graduates of the Department of Applied Mathematics and Informatics apply for the Master's degree programme in TSU and other higher education institutions, and 3-5 Master graduates apply for postgraduate programmes in leading Russian HEIs.

Material and technical resources

Modern laboratory and technological resources, special facilities equipped with necessary furniture and training devices are used in the educational process. A server-based architecture that includes cyberspace and system datastorage is used at the Department. Demonstration equipment and training tools are used when giving lectures. There are laboratories provided with technological equipment. All rooms are equipped with computers with an access to the Internet and electronic information and educational environment of the University.

EXTERNAL REVIEW PANEL

Leda Sysoeva (Moscow)

Review Chair, Russian expert

Candidate of Engineering Sciences, Associate Professor, Director of the Centre of Information Systems and Technologies in the Educational Process, Russian State University for the Humanities, member of the Guild of Experts in Higher Education

A nominee of the Guild of Experts in Higher Education

Rimma Akhmetsafina (Moscow)

Deputy Review Chair, Russian Expert

Candidate of Engineering Sciences, Associate Professor, Deputy Head of the Department of Software Engineering, Faculty of Computer Science, National Research University Higher School of Economics, member of the Guild of Experts in Higher Education

A nominee of the Guild of Experts in Higher Education

Aleksei Onuchin (Togliatti)

Panel member, representative of the professional community

Director General LLC «Holmont BR»

A nominee of LLC «Holmont BR»

Andrei Kabanov (Togliatti)

Panel member, representative of students

4th year student, Volga Region State University of Service

A nominee of Volga Region State University of Service

INFORMATION ON THE LEADING TEACHERS OF THE EDUCATIONAL PROGRAMMES

Sergei Mkrtychev

Doctor of Engineering Sciences, Associate Professor, Professor of the Department of Applied Mathematics and Informatics, Head of the Research Area in TSU

Aleksandr Safronov

Doctor of Physical and Mathematical Sciences, Associate Professor, Professor of the Department of Applied Mathematics and Informatics, Head of the Research Area in TSU

Andrei Ochepovskii

Candidate of Engineering Sciences, Associate Professor, Head of the Department of Applied Mathematics and Informatics

Oksana Guschina

Doctor of Pedagogic Sciences, Candidate of Pedagogic Sciences, Associate Professor of the Department of Applied Mathematics and Informatics

Sergei Talalov

Doctor of Physical and Mathematical Sciences, Professor, leading researcher, Head of the Department of Mathematical Physics and Computer Modeling, Head of the Department of General and Theoretical Physics, Director of the Institute of Mathematics, Physics and Information Technologies, Togliatti State University, member of the American Mathematical Society

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

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

Compliance with the standard: **substantial compliance**

Good practice:

The Programme for development of a flagship university till 2021 is developed at the University.

A system of management and control for implementation of the Programme for development is used with the participation of the Group of strategic planning.

A system of the key performance indicators (KPI) of the University staff is in place.

There is a Centre of Strategic Initiatives at TSU.

The corporative portal is used to manage the projects, to control implementation of the programme for strategic development.

Areas for improvement:

It is recommended to develop the strategic Programme of the Institute development on the basis of the Programme for development of a flagship university.

It is advisable to develop a system of criteria for implementation of the Programme for development.

It is necessary to consider the possibility of involving the University on the whole or just the Engineering School in the CDIO™ Initiative: Conceive — Design — Implement — Operate that unites HEIs that carry out training with the help of a project-based approach.

STANDARD 2. Design and approval of programmes

Compliance with the standard: **full compliance**

Good practice:

The study programmes are regularly discussed and agreed by the leading employers of the region – large and medium-sized IT-companies. The Professional Council (IT-Council) that includes 12 IT-companies is created.

A company-employer makes the annual report «Recommendations on training of IT-students».

The study programme is aimed at implementation of a project-based approach in training. It includes the discipline «Project Activities».

Team work is in place. Team projects by the orders of enterprises are developed.

The programme under review corresponds to the requirements of employers, professional standards; it is well structured and is aimed at development of necessary competencies.

Areas for improvement:

It is recommended to develop normative documents on assignment and powers of academic supervisors of study programmes.

It is advisable to develop practical and research activities and teamwork of students in the curriculum.

STANDARD 3. Student-centered learning and assessment

Compliance with the standard: **substantial compliance**

Good practice:

Full information about the study programme, disciplines, practical training, etc. is published on the educational portal.

Implementation cards on each discipline with a plan of learning for a semester are developed.

A pool of tests is developed. Testing of 1st-3rd year students is used as an interim control of learning outcomes.

Students can enroll for elective courses in the system «Electronic University – MOODLE».

50% of employers – representatives of leading IT-companies of the region – are members of the State Examination Commission.

Students and teachers can use a special service in the information system to file applications and complaints.

Areas for improvement:

It is recommended to extend the pool of elective courses with the account of the market demands and modern technologies.

It is advisable to develop the accounting procedure, carry out analysis and present the analytical report of students' addresses to the administration of the University, Institute and study programme.

It is necessary to publish materials of lectures, practical sessions and other methodological materials in the MOODLE system for the students of intramural form of study.

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

Compliance with the standard: **substantial compliance**

Good practice:

The Open Doors Days, Olympiads for pupils and 1st and 2nd year students are held together with leading IT-companies.

Webinars for senior pupils are held to attract applicants.

Students participate in conferences, Olympiads, Schools of Collegiate Programming, «hackathons»-marathons of programmers.

Monitoring of students' academic progress is carried out with the use of the ERP «Galaxy».

Areas for improvement:

It is recommended to give more opportunities for students to get different scholarships, etc.

It is advisable to increase international and national academic mobility of students, in particular, by development of implementation of study programmes on a network basis.

It is necessary to promote students to participate in commercial conferences and research and educational schools carried out by educational institutions and IT-companies.

It is recommended to increase students' awareness about the IT-community and IT-companies of the city.

It is advisable to improve integration of students' research works with applied IT-projects implemented in the region.

STANDARD 5. Teaching staff

Compliance with the standard: **substantial compliance**

Good practice:

Project-based training is carried out in the centre «IT-student» and in the Higher Engineering School.

Experts from IT-companies are involved in the educational process.

A regulated system of staff's motivation and incentives is in place.

Teachers of the Department of Applied Mathematics and Informatics publish articles in the journals of RSCI, WoS and Scopus.

In 2017 Sergei Mkrtychev defended the thesis for the degree of Doctor of Engineering Sciences.

Areas for improvement:

It is recommended to use online communications to give lectures, etc. by teachers from other higher education institutions.

It is advisable to promote academic mobility of the teaching staff. It is necessary to engage more teachers having experience of practical work, knowing modern technological stacks, organizing work in IT-companies, etc.

It is recommended to provide methodological support of learning modern and useful courses on open platforms such as Coursera, EdX, OpenEdu., open resources of leading world universities.

It is advisable to explore the market of further education; to develop disciplines that are in demand. It will help to improve qualification of the teaching staff.

STANDARD 6. Learning resources and student support

Compliance with the standard: **substantial compliance**

Good practice:

Material and technical resources are renewed with the help of IT-community. Companies-partners EPAM, NetCracker, and NVIDIA provide the study programme with modern equipment.

An electronic catalogue of full text graduation works is in place.

A support system of student mobility is represented in the form of travel-grants, students can apply and get financial support.

Areas for improvement:

It is recommended to make an accessible environment for people with disabilities: provide all the buildings with ramps, elevators, remove doorsteps, etc.

It is advisable to develop normative documents and methods for collection of feedback from students on evaluation of conditions and organization of the educational process. It is recommended to provide all stakeholders with the results of surveys.

It is necessary to use academic programmes of cooperation with higher education institutions of leading IT-companies (MicroSoft, etc.) to get software.

It is recommended to use MOODLE to distribute information academic mobility.

It is advisable to support students' initiatives on participation in competitions and «hackathons» – competitions of programmers.

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

Compliance with the standard: **substantial compliance**

Good practice:

A unified information and communication environment is formed by a complex of software systems: PLANY, Galaxy ERP, portal Bitriks24, educational portal MOODLE, learning management system Rosdistant, electronic library system, official website of the University.

The information system Bitriks-24 is used; the processes of management, account and control are automated.

Academic progress of students is analyzed. Up-to-date information about the cohort of students is in place. Educational resources in different information systems are available for the students.

Support services for students and staff are available on the official website.

Areas for improvement:

It is recommended to use personal accounts of students to make electronic portfolio.

STANDARD 8. Public information

Compliance with the standard: **partial compliance**

Good practice:

A developed complex of information systems is in place. A considerable amount of collected information helps to quickly get reports and information for the website.

Areas for improvement:

It is recommended to make all sections and pages of the University website available; to develop a clear navigation and a user friendly and modern User Interface UI.

It is advisable to review the channels of publication of information about the University. It is recommended to keep groups in social media, on Youtube, etc. and publish information about the University, Faculty, study programme, events, lectures of leading teachers, etc.

It is necessary to advertise the University and study programme in social media.

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

Compliance with the standard: **substantial compliance**

Good practice:

Study programmes and programmes of working disciplines are reviewed. A project-based approach to education is used in compliance with modern requirements to graduates and tendencies of the market.

Analysis of the fields of study and definition of advanced study programmes are carried out at the meetings of the University administration.

Areas for improvement:

It is recommended for the students to carry out quality evaluation of training and provide all stakeholders with the review results.

It is advisable to carry out a survey of graduates of the past two years on a regular basis to get feedback about quality of their training.

It is necessary to present and provide all stakeholders with the results of questionnaires of students on evaluation of conditions and organization of the educational process in relation to the institutes and study programmes.

STANDARD 10. Cyclical external quality assurance of the educational programmes

Compliance with the standard: **substantial compliance**

Good practice:

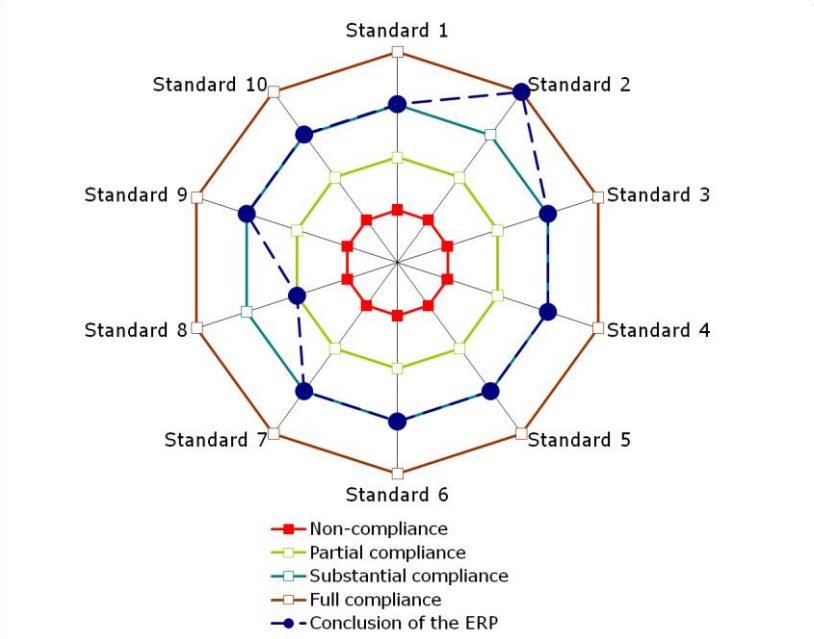
External review of the educational programme in the field of study «Applied Informatics» is carried out regularly by the largest employers of the region. Corrective measures on improvement of quality and content of education are taken on the basis of this review.

Areas for improvement:

It is recommended to carry out external review of engineering education in cooperation with the Information & Computer Technologies Industry Association (APKIT).

It is advisable to invite teachers from other higher education institutions to hold state examinations and interim control.

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 cluster of the educational programmes in «Applied Informatics» (09.03.03, 09.04.03) **substantially 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 cluster of the educational programmes in «Applied Informatics» (09.03.03, 09.04.03) delivered by Togliatti State University for the period of **6 years**.

SCHEDULE OF THE SITE VISIT OF THE EXTERNAL REVIEW PANEL

Time	Activity	Participants	Venue
May 29, Tuesday			
08.45	Arrival at the University		Main Building, 14, Belorusskaia Str.
09.00 — 10.00	The first meeting of the external review panel		Room Г-208, Main Building, 14, Belorusskaia Str.
10.00 — 11.30	**Meeting of the ERP with the University administration and people responsible for accreditation**	Rector, Vice-Rectors, people responsible for accreditation, ERP	Room Г-208, Main Building, 14, Belorusskaia Str.
11.30 — 13.30	Tour of the University (visiting classes, libraries, etc.)	ERP	
13.30 — 14.30	Lunch		
14.30 — 15.00	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
15.00 — 16.00	**Meeting with Institute Directors /Deans**	Deputy Rectors, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
16.00 — 16.30	Work with documents	ERP	Room Г-110, Main Building, 14, Belorusskaia Str.
16.30 — 17.30	**Meeting with Heads of Departments**	Heads of Departments, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
17.30 — 18.00	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
18.00 — 19.00	**Meeting with graduates**	Graduates, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
19.00 — 19.30	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.

May 30, Wednesday			
08.45	Arrival at the University		Main Building, 14, Belorusskaia Str.
09.00 — 10.00	Work with documents	ERP	Room Г-110, Main Building, 14, Belorusskaia Str.
10.00 — 11.00	**Meeting with teachers**	Teachers, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
11.00 — 12.30	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
12.30 — 13.30	**Meeting with Bachelor students**	Students, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
13.30 — 14.30	Lunch		
14.30 — 15.00	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
15.00 — 16.00	**Meeting with Master students**	Students, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
16.00 — 17.00	Work with documents/Visiting classes (at the wish of the ERP)	ERP	Room Г-110, Main Building, 14, Belorusskaia Str.
17.00 — 18.00	**Meeting with representatives of professional community**	Employers, ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
18.00 — 18.30	Internal meeting of the ERP	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
May 31, Thursday			
08.45	Arrival at the University		Main Building, 14, Belorusskaia Str.
09.00 — 12.30	Internal meeting of the ERP: discussion of preliminary results of the site visit, preparation of the oral report of the panel	ERP	Room Г-2356, Main Building, 14, Belorusskaia Str.
12.30 — 13.30	**Closing meeting of the External Review Panel with the representatives of the University**	ERP, University administration, Heads of the Graduate Departments, teachers, students	Room Г-208, Main Building, 14, Belorusskaia Str.
13.30 — 15.00	Lunch		
	Departure		