

AKKORK

Agency for Quality Assurance in Higher
Education and Career Development

Approved

Chairman of the Advisory Council

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REPORT
on the results of the external assessment of
the Bachelor programme "Business Informatics"
Tambov State Technical University

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SUMMARY OF THE PROGRAMME

The programme "Business Informatics" has been implemented since 2008. The programme is implemented according to the federal educational standards of higher education in the direction of study "Business Informatics", approved by the order No. 1002 of the Ministry of Education and Science of the Russian Federation of August 11, 2016.

The implementation of the programme is provided by the Department of Commerce and Business Informatics of the Institute of Economics and Quality of Life (Faculty). The programme is managed by the head of the Department, Blum Marina.

The on-site visit within the framework of the external evaluation of the programme was carried out by the AKKORK reviewers during the period from October 05 to October 06, 2017.

Since there are no available analytical reviews or regular bulletins that characterize the demand in the labor market for specialists (graduates trained under Bachelor's Programme with a certain set of competencies) in the field of information technologies in business, issued by specialized organizations, such analysis is carried out by the professors of the Department of Commerce and Business Informatics. The analysis is carried out with a frequency of 1 - 2 times a year on a monthly average basis. It is conducted on the basis of information on vacancies posted on the Internet portal of job search www.hh.ru for Tambov and Tambov region. The following specialty vacancies are taken into consideration: information technology manager, information system implementation specialist, IT consultant, programmer (software developer), SEO specialist, first of all, initial positions that graduates of the educational institution can apply for. In 2016, the average monthly figure in May amounted to 24 vacancies, in December – 20 vacancies.

The Department maintains close ties with employers, which include the leading enterprises of the region, state institutions and commercial enterprises. During the internship, students have the opportunity to get acquainted with the future workplace. During the educational process, students are taught the skills of effective organization of independent work and the search for solutions to routine and non-standard tasks. The senior students (third and fourth years) have the opportunity to combine study and work in their specialty.

Strengths of the analysed programme

1. 63.3 % of the graduates surveyed are satisfied with the results of education.
2. Students consider that Tambov State Technical University is the most competitive higher educational institution in this region, and therefore, when choosing a university, TSTU was given preference and today more than 90 % of students do not regret their choice.
3. There is no negative feedback on the work of the university.

4. Interviewed employers highly appreciate the professionalism and competence of graduates.

5. The university cooperates with the best Tambov companies in this field, where students undergo traineeships, work experience internship, and then work.

6. The Department of Employment and Organization of Internship actively participates in the employment of its graduates, and also timely and objectively delivers all the necessary information to graduates. The proportion of those who received an invitation to work after the internship is 30 %.

7. The dynamics of changes in wages according to the survey conducted among 27 graduates of the higher education is positive (increase more than 25 %).

8. The quality and content of the teaching and learning materials used in the educational process meet the requirements for students to achieve the expected learning outcomes. During the programme implementation, materials both on paper and in electronic form, as well as video materials, multimedia technologies, cases, tests are used.

9. Applied forms of practical training in the university carry a significant share of students' self-study, what also allows for in-depth study of the subject.

10. All students have the opportunity to form additional competencies, mastering the training courses on the national portal of the Association "National Platform for Open Education".

11. Educational process based on the programme is provided by qualified professors engaged in research work, having academic degrees and / or academic titles.

12. The system of motivating the teaching staff with material and moral encouragement is organized at a high level.

13. Good provision of students with information resources (the following electronic library systems are used: elibrary, publishing house "Lan", IPRbooks).

14. The presence of personal accounts for each student and the established feedback from the staff and professors of the university on the platform of the VitaLMS System.

15. The share of the use of research work results in the educational activity and in the organization system of management of educational activity in the university is 80 %.

16. Participation of employers in the work of the State Qualifying Board, what gives them the opportunity to assess the graduates trained under the programme and, if necessary, to attract them as candidates for internships or vacant positions.

17. The Tambov State Technical University has a Joint Council of Students to participate in the management of the educational process, to address important issues of life of student youth, to develop its social activity, to support and implement social initiatives.

18. The university developed a programme of educational activities for the period of training in TSTU. At the level of programme implementation, there are sufficient mechanisms of material support for students.

19. Students are given the opportunity to get training under additional courses or programmes, such as internships abroad, including language and computer courses, various seminars and trainings, master classes, etc.

20. An annual complex of various activities for potential enrollees is held in Tambov State Technical University.

Weak points of the analysed programme

1. Low activity of employers' participation in the development of teaching and learning materials and academic disciplines of the programme.

2. There are no academic staff, leading scientific and teaching activities in foreign higher educational institutions.

3. The procedure for passing the advanced training in foreign universities has not been developed.

4. A small number of scientific publications of professors of the Department in foreign journals.

5. There are no measures to encourage the participation of students in determining the content of the programme and the organization of the educational process by the Departments and the Faculty.

6. A small number of scientific and practical events with the participation of students and / or professors.

7. Insufficient number of actual topics in the syllabi "Enterprise Architecture", "Business Process Modeling", "Project Management Software Development", "Electronic Business", "Architecture of corporate information".

The main recommendations of the reviewers on the analyzed programme

1. Involve employers to determine the expected results of mastering the programme, since the majority of regional employers, having a virtual office, work in the all-Russian and international market and use the most advanced international technologies.

2. Involve employers in direct participation in the development of disciplines of the programme. For example, to attract employers to participate in the meetings of the Department or receive a review in electronic form on the relevance of the programme, the relevance of its content to the needs of the labor market. Involvement of employers will make it possible to compile the widest range of IT disciplines that will contribute to moving away from the labor market of the Tambov region and will allow students to acquire new competencies and be more demanded and competitive on the IT labor market in Russia.

3. For the development of the "Business Informatics" programme it is recommended to add some topics to the syllabi so that the disciplines correspond them to modern teaching trends.

1) Themes are recommended to include to "Enterprise Architecture" discipline.

- Process-target approach to enterprise modeling.

- Languages and tools for modeling the enterprise architecture and its individual models.

- Development of the process model of the enterprise architecture, its analysis and transformation in the process of forming requirements for the information system.

- Examples of implementation of enterprise architecture models, the electronic enterprise model.

2) Themes are recommended to include to "Modeling business processes" discipline.

- Methods of modeling business processes.

- Methods for analyzing business processes.

- Reference and reference models of business processes.

- Software products for modeling and analysis of business processes.

3) Themes are recommended to include to "Project Management Software Development" discipline.

- Features of various methodological support for software project management.

4) Themes are recommended to include to "Electronic Business" discipline.

- Mobile technologies. Cloud technologies. Internet of things.

5) It is also recommended that within the framework of the discipline "Architecture of Corporate Information Systems" to study Corporate Information Systems based on 1C: Enterprise or Microsoft-based or add a new discipline dedicated to the topic.

4. Involve employers not only for conducting master classes, but also for lecturing, which will make the education more practice-oriented.

5. Invite academic staff, leading scientific and teaching activities at foreign higher education institutions.

6. Develop the procedure for passing the advanced training by teaching staff at foreign universities.

7. Improve the process of automating the preparation of statements of current and final control through the Integrated Automated Information System.

8. Increase number of scientific publications of professors of the Department in foreign journals.

9. Assign students to employers' organizations starting from junior years, so that the employer can observe the trajectory of their development.

10. Develop measures to encourage the participation of students in determining the content of the programme and the organization of the educational process by the Departments and the Faculty. Give each student the opportunity to express opinion when developing and updating the teaching and learning materials. Together with the Student Council to think over the forms of non-material encouragement of students for their activity in filling in these forms of feedback in their personal accounts. For example, to organize master classes, meetings with the leadership of the university, retreats that are available to the best students of the and students, most actively involved in determining the content of the programme and the organization of the educational process.

11. Select the professional disciplines for organizing open lessons for students of 9 - 11 grades to familiarize a prospective enrollee with the specifics of "Business Informatics" programme.

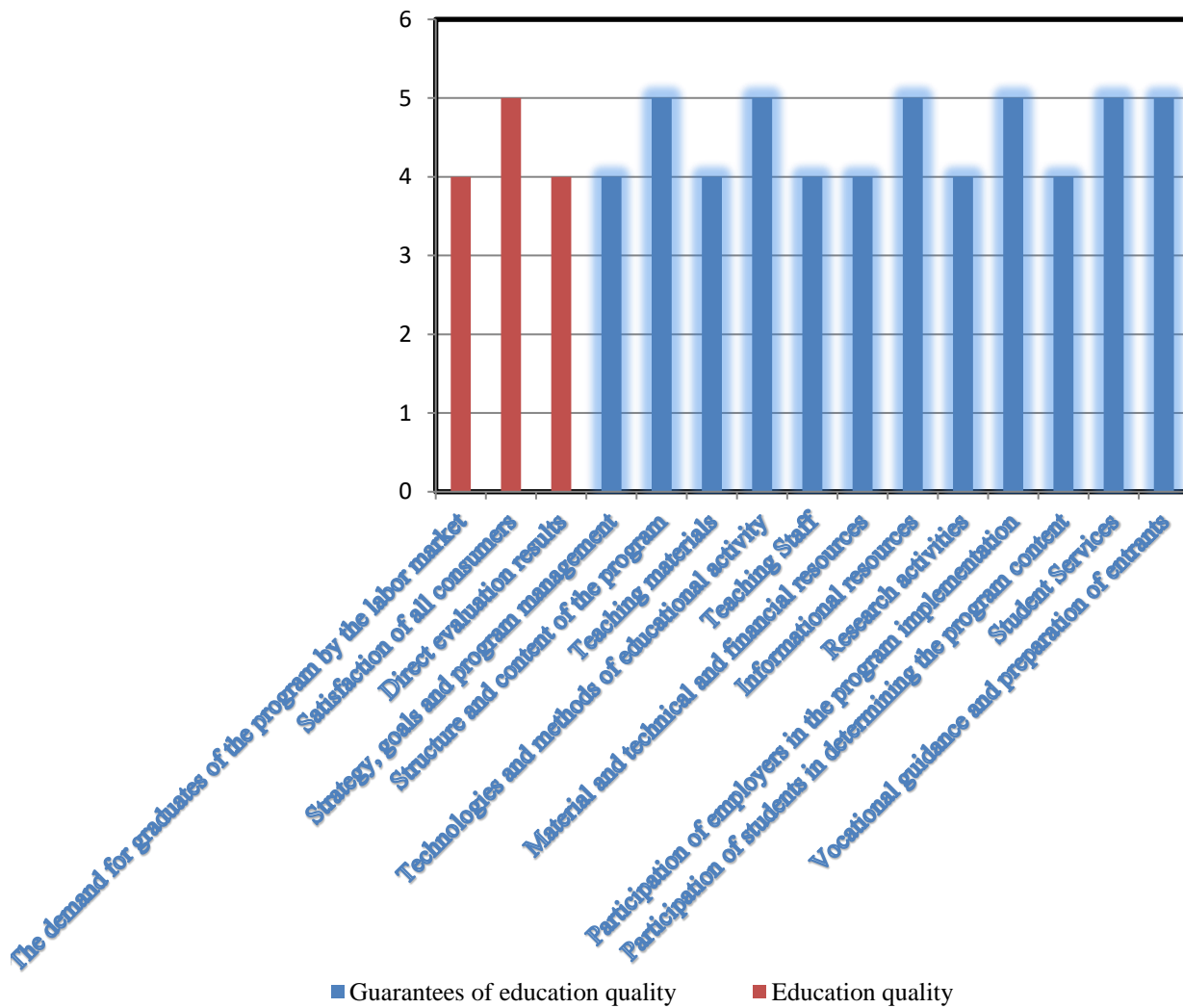
12. Involve not only regional employers for conducting trainings and seminars, but also employers from other large cities such as Moscow, St. Petersburg, Voronezh, etc., so that students can focus on further employment and continue their studies under the Master's Programme not only in Tambov.

13. Involve students in holding and participating in conferences and forums, both international, and all-Russian as well as conferences and forums held in TSTU. Take into account the activity of a student in the disciplines on which the report was prepared.

***Evaluation profile of the learning outcomes
and quality assurance of education***

No.	Criterion	Assessment
<i>I</i>	<i>Quality of the learning outcomes</i>	
1.	The demand for graduates of the programme by the labor market	4
2.	Satisfaction of all consumers	5
3.	Results of direct assessment of competencies	4
<i>II</i>	<i>Quality assurance of education</i>	
1.	Strategy, aims and management of the programme	4
2.	Structure and content of the programme	5
3.	Teaching and learning materials	4
4.	Educational technologies and methods	5
5.	Teaching staff	4
6.	Material and technical, financial resources	4
7.	Information resources	5
8.	Scientific-research work	4
9.	Employer participation in the programme implementation	5
10.	Participation of students in determining the content of the programme	4
11.	Student services	5
12.	Career guidance and prospective applicants' preparation	5

Profile for assessment of learning outcomes and educational quality assurance



QUALITY OF THE LEARNING OUTCOMES

1. Demand for the graduates on the federal and regional labor market

Criterion assessment: good

Analysis of the role and place of the programme

The region's need for graduates of this specialization

The documented demand in form of applications from enterprises in the field of Business Informatics is 25 people, there are applications from Skobeev and Partners LLC, Demis Group LLC, Business Online LLC, and Soyuznik LLC.

The analysis of information about vacancies posted on the popular Internet portal www.hh.ru for the city of Tambov and Tambov region showed that the need for specialists is more than 100 people. The following vacancies are taken into consideration: information technology manager, information system implementation specialist, IT consultant, programmer (software developer), SEO specialist. In Tambov city there are several large enterprises that provide employment for graduates: "Demis Group", "Demis Partners", "Skobeev and Partners", "Hybrid", "Snow Media", etc., being one of the leaders of the Russian Internet Marketing Market.

The educational policy of the regional (municipal) government includes:

- formation of knowledge and skills necessary for the regional economy in the future;
- changes in the educational system;
- initiatives and projects.

At the present time, the following are being implemented:

- transition from the management of a network of professional educational institutions to the strategic management of the region's personnel;
- transition from a mass professional orientation to building individual trajectories of professional self-determination and professional support;
- wide introduction of models and mechanisms of professional self-determination;
- implementation of mechanisms for independent assessment of competencies and qualifications based on international standards;
- an independent assessment of qualifications with the participation of the Chamber of Commerce and Industry;
- professional-public accreditation of educational programmes.

The following measures are taken to motivate creative youth.

1. Regional nominal scholarships are awarded to the most gifted students of state educational institutions of secondary and higher professional education, who have achieved special success in study, research and creative work, actively participating in Russian and international olympiads, creative competitions, festivals, as well as in the public life of the educational institution.

2. Students, post-graduate students and doctorates are awarded regional annual grants, information about which is published annually in the "Tambov Life" newspaper.

The following educational and production clusters are distinguished in the Tambov region.

1. Industry.
2. Agro-Industrial Complex.
3. Building Industry and Housing Services and Utilities.
4. Transport.
5. Information Technology.
6. Social Sphere.

Characteristics of the competitive environment in this area

In the Tambov region, in addition to Tambov State Technical University, bachelor programme "Business Informatics" is carried out by Tambov State University named after G.R. Derzhavin.

At the moment Tambov State Technical University has had 6 graduations of bachelors in the direction of "Business Informatics", and Tambov State University named after G.R. Derzhavin - 3 graduations. In Tambov State University named after G.R. Derzhavin preparation of bachelors of Business Informatics is carried out on the profile of "Electronic Business". The number of graduates in 2015 in Tambov State Technical University is 12 people, in Tambov State University named after G.R. Derzhavin - 21 people, in 2016 in Tambov State Technical University - 27 people, in Tambov State University named after G.R. Derzhavin - 21 people, in 2017 in Tambov State University named after G.R. Derzhavin - 29 people, there is no data for Tambov State University named after G.R. Derzhavin.

The analysis of the data provided by the university

The share of students, combining study at the university with work in their specialty.

According to the survey conducted (27 graduates of the "Business Informatics" programme of 2014 - 2016).

- 44 % of respondents did not work in their specialty, starting from the third year, combining work with study,
- 8 % of respondents worked in their specialty, starting with the fourth year, combining work with study,
- 20 % of respondents did not work in their specialty, starting with the fourth year, combining work with study,
- 28 % of the graduates surveyed found a job after getting a Bachelor's Degree.

The share of graduates who are employed within one year after the graduation from the university in the direction of study, obtained as a result of training under the programme.

Among the graduates of 2014 (the total number of 4 people):

- 75 % (3 people) after completing the Bachelor's Programme immediately continued full-time education in the graduate school: Master's Programme of the Russian Presidential Academy of National Economy and Public Administration (Moscow), the Master's Programme of the Tambov State Technical University in the field of Business Informatics, Master's Programme of Tambov State Technical University in the field of Economics. One person after the mastering the Bachelor's Programme found a job in their specialty within the region, then a year later continued their studies in the graduate school in the of Business Informatics specialization.
- 25 % (one person) is employed according to the specialization outside the region.

From the graduates of 2015 (the total number of 12 people):

- 92 % continued full-time education under Master's Programme in the Tambov State Technical University in the direction of Business Informatics, most of them (64 %) combine full-time education with work in their specialty.

From the graduates of 2016 (the total number of 27 people):

- 37 % found a job in their specialty during a year after graduation,
- about 44 % continued getting full-time education and part-time education in the graduate school in the direction of Business Informatics,
- about 18 % continued their studies under the Master's Programme in other related areas of training.

The share of graduates who are employed at the request of enterprises is 55 %.

The share of students educated by the request of employers, for example, based on tripartite (target) agreements – none.

There are no students studying on the basis of target agreements (due to the peculiarities of the target enrollment, according to which applications of enterprises with at least have a part of state property in it, which is not typical for the enterprises of the industry under consideration).

The share of the graduates working in their specialty in the region.

About 55 % of graduates trained under Bachelor's Programme work in the field of their specialty in the region, some of the students continue their full-time education in graduate school under Master's Programme, some serve in the Armed Forces of the Russian Federation, some are on maternity leave.

The share of the graduates working in their specialty outside the region.

About 15 % of graduates trained under Bachelor's Programme work in the field of their specialty outside the region, some of the students continue their full-time education in graduate school under Master's Programme, some serve in the Armed Forces of the Russian Federation, some are on maternity leave.

The number of complaints on graduates - none.

The number of positive reviews of organizations on the work of graduates – 100 %. Interviewed employers (16 people in all) evaluated the graduate's competencies in the main as follows:

- 5 points - high level (from 43 % to 70 % depending on the type of competence),
- 4 points - the graduate's competence was estimated from 12 % to 50 % of the interviewed employers,
- 3 points - from 0 % to 25 % of the respondents.

The share of students within the framework of the programme, taken for training under the Master's Program, which have completed training under the Bachelor's Programs.

Among the graduates of 2014 (the total number of 4 people)

- 75 % (3 people) after completing the Bachelor's Programme immediately continued full-time education in the graduate school: Master's Programme of the Russian Presidential Academy of National Economy and Public Administration (Moscow), the Master's Programme of the Tambov State Technical University in the direction of Business Informatics, Master's Programme of Tambov State Technical University in other economic direction;
- 25 % (one person) after mastering the Bachelor's Programme found a job in their specialty within the region, then a year later continued their studies in the graduate school in the direction of Business Informatics.

From the graduates of 2015 (total number of 12 people), 92 % continued full-time education in the graduate school under Master's Programme of the Tambov State Technical University in the direction of Business Informatics.

From the graduates of 2016 (the total number of 27 people)

- about 44 % continued getting full-time education and part-time education in the graduate school in the direction of Business Informatics;
- about 18 % continued their studies under the Master's Programme in other related areas of training.

• *The share of graduates of the university under the programme in relation to the proportion of graduates of all other higher education institutions of the region under the programme is about 56 %.*

Additional material

Based on the results of self-assessment carried out by the university the data are presented on the distribution of graduates. The data submitted by the TSTU were confirmed during the study of the relevant documents.

2. Satisfaction of consumers with the learning outcomes

Criterion assessment: excellent

As a result of the questionnaire, 16 employers evaluated six proposed graduate competencies.

- *The proportion of employers who consider that the competence of graduates of the programme:*

- *fully meet the requirements for modern specialists of the industry, as from 43 % to 75 % of employers consider it, depending on the type of competence;*

- *substantially correspond to modern requirements to experts of the given branch, but there are insignificant remarks, so consider from 12.5 % to 50% of employers depending on a kind of the competence;*

- *there are few graduates whose competencies correspond to the current requirements for specialists in this sector, from 0 % to 25 % of employers consider it, depending on the type of competence;*

- *0 % of employers consider that graduates do not meet the requirements for specialists in this industry.*

The share of graduates satisfied with the results of education

- 63.3 % are mostly satisfied with the actual results of education,

- 30 % are completely satisfied;

- 3.3 % are dissatisfied to a greater extent.

Satisfaction of the graduates in the field of "Business Informatics" programme was evaluated during the monitoring, in total 28 people were interviewed.

3. Direct assessment of competencies by the reviewers

Criterion assessment: good

During the on-site visit, direct assessment of the competencies of the graduate students was conducted. In direct evaluation, students of the 4 (fourth) year of the Master's Programme took part in the number of 5 people, which is 50 % of the graduate course.

To analyze the formation of competencies, the reviewers selected the following:

- Evaluation of the competencies characterizing the personal qualities of a person, which are an integral part of their professional competence, reflecting the need (requirements) of the regional and / or federal labor market, depending on the main consumers of the graduates of the programme:

Professional competencies-7 - Use of modern standards and techniques, development of regulations for the organization of management of the life cycle of the IT infrastructure of enterprises;

General cultural competencies-7 - Ability to self-organization and self-education;

- Assessment of competencies aimed at the development, maintenance and improvement of communications:

General cultural competencies-6 - Ability to work in a team, tolerantly perceiving social, ethnic, confessional and cultural differences;

- Assessment of professional competencies ("competence core"), including the competencies reflecting the need (requirements) of the regional and/or federal labor market, depending on the main consumers of the graduates of the programme:

Professional competencies-7. Use of modern standards and techniques, development of regulations for the organization of management of the life cycle of the IT infrastructure of enterprises

Professional competencies-19. Ability to prepare scientific and technical reports, presentations, scientific publications based on the results of studies.

When implementing the procedure for direct assessment of competencies, the reviewers used test and exam materials of the "Designing the Architecture of the On-line Movie Store" discipline.

Based on the results of a direct assessment of competencies, the experts found the following.

Level	Sufficient level (students coped with 80 % of the proposed tasks)	Acceptable level (percentage of the solved tasks is from 50 to 79 % of tasks were fulfilled)	Low level (percentage of the solved tasks is less than or equal to 49 %)
Share of students			
Results of direct assessment of competencies characterizing the personal qualities of a person, which are an integral part of their professional competence			
100 %	+		
The results of direct assessment of competencies aimed at the development, maintenance and improvement of communications			
100 %	+		

The results of direct assessment of professional competencies ("competence core"), including the competencies reflecting the need (requirements) of the regional and/or federal labor market, depending on the main consumers of the graduates of the programme			
60 %		+	
40 %			+

When conducting the quality assessment of education, the experts got acquainted with 10 graduate qualification works, which amounted to 50 % of the graduate works of the previous year in this direction. The reviewers concluded that the considered graduate qualification works do meet all the requirements stated below.

GRADUATE QUALIFICATION WORKS

N o.	Objects of assessment	Expert commentaries
1.	Topics of graduate qualification works correspond to the field of study and current level of science, technology and (or) technologies development within the programme.	100 %
2.	The tasks and contents of graduate qualification works are aimed at confirming the formation of the competences of a graduate.	100 %
3.	The degree of use in the performance of independent research parts of materials of graduate qualification works collected or received during the pre-diploma practice and the implementation of course projects.	85 %
4.	Topics of graduate qualification works is defined by the requests of the production organizations and the tasks of the experimental activity, which are solved by the teachers of the educational institution.	90% The topics of the majority of graduate qualification works are determined by the requests of the production organizations with which there are contracts with the Federal State Budget Educational Institution of Higher Education "Tambov State Technical University" and the tasks

		of the interregional research laboratory "Modern Technologies in Education and Business", which functions at the Department of "Commerce and Business Informatics"
5.	The results of graduate qualification works find a practical application in production.	50 %
6.	Degree of use in the performance of independent research parts of the graduate qualification works of the results of the research work of the department, faculty and third-party research and production and / or research organizations.	75 %

Conclusions and recommendations of reviewers

Conclusions

Graduates of the programme are in demand by the labor market, but some graduates go to Moscow, St. Petersburg to continue their studies in a graduate school under other Master's Programmes in the direction of Business Informatics.

Recommendations

Develop syllabi in accordance with rapidly developing new technologies and changing demands of the labor market.

Additional material

Also during the on-site visit, direct assessment of the competencies of the full-time education graduate students was conducted by recitation. In direct evaluation, second half of students of the 4 (fourth) year of the Master's Programme took part in the number of 5 people (which is 50 % of the graduate course). Based on the results of the recitation of students, it was revealed that students have professional specialty competencies, professional and general professional competencies at a sufficiently high level. They have good communication skills. They perfectly understand what knowledge a professional should have in order to work in the field of information technology. What knowledge they lack to achieve the desired position, etc. Graduate students are very motivated to improve their qualifications and work only in their specialty.

QUALITY ASSURANCE OF EDUCATION

1. Strategy, aims and management of the programme

Criterion assessment: good

Strong points

The educational objectives of the programme are fully consistent with the region and objects, as well as the tasks of the selected types of professional activity determined by the Federal State Educational Standard of Higher Education in the direction of 38.03.05 "Business Informatics" (from August 11, 2016).

Presence of a development strategy and quality assurance for the graduates of the professional educational programme "Business Informatics" for the coming years, which outlines the main trends in the development of the programme that is in line with the overall development strategy of the Tambov State Technical University, the target indicators of the Strategic Development Programme of the Institute of Economics and Quality of Life and the Strategy of Social and Economic Development of the Tambov region for the period up to 2020, providing:

- a combination of fundamental and practical training,
- productivity of scientific-research work and design activities.
- integration of scientific-research work and educational processes,
- increase of the interdisciplinarity and flexibility of educational and research programmes,
- creation, implementation and dissemination of new educational technologies.

The clarity of the aims and objectives set already positively affects the quality of education within the framework of the "Business Informatics" programme.

Recommendations

1. Involve employers to determine the expected results of mastering the programme, since the majority of regional employers, having a virtual office, work in the all-Russian and international market and use the most advanced international technologies.

2. Involve employers to participate in the approval, analysis and actualization of the implemented programme.

3. Establish (at the level of programme implementation) the basic Departments of leading employers in the university; Departments of TSTU at enterprises that are the main consumers of graduates.

4. To expand cooperation with the leaders of the IT market, to attract practitioners to conduct trainings and seminars for both students and to improve the qualifications of the teaching staff of the university.

5. Cooperate with advanced technical higher educational institutions in Russia to implement academic mobility programmes for students.

2. *Structure and content of the programme*

Criterion assessment: excellent

Strong points

The competence model of a graduate of the programme corresponds to the system of competencies established by the educational standard of the direction of Business Informatics.

Evaluation tools used in the current monitoring of the performance of the analyzed programme, developed on the basis of actual practical situations, cases.

The topics of graduate qualification works is determined by scientific-research problems solved by professors of the Department of Commerce and Business Informatics and the requests of production organizations - most of the graduate qualification works is carried out by the orders of enterprises.

Recommendations

1. Involve employers not only for conducting master classes, but also for lecturing, which will make the educational training more practice-oriented.

2. Regulate mechanisms of attracting employers to analyze and design the content of the programme.

3. *Teaching and learning materials*

Criterion assessment: good

Strong points

The quality and content of the teaching and learning materials used in the educational process meet the requirements for students to achieve the expected learning outcomes. For the learning the programme, more than 20 teaching and learning publications have been published and completed with an electronic version by the staff of the Departments of the Institute of Economics and Quality of Life over the past year.

During the programme implementation, materials both on paper and in electronic form; video materials, multimedia technologies, cases, tests are used. Their combination, depending on the type of occupation and content of the topic under consideration, generally contributes to the students' achievement of the expected learning outcomes.

A large number of teaching materials are available in the VITALMS system: video and audio fragments of lectures, text educational and methodological materials, links to electronic libraries, tests of a discipline. Students also have the opportunity to use teaching and learning materials located in electronic library systems: elibrary, publishing house "Lan", IPRbooks, KnigaFund, "Single Window of Access to Educational Resources".

In the university the teaching and learning materials standard of the discipline has been developed and approved, regulating its composition and structure, the content of individual elements, didactic requirements, the procedure for the development and organization of the teaching and learning materials examination. The procedure for the development, approval of the academic discipline programme is carried out in accordance with the regulations on programme in Tambov State Technical University.

The developed programmes of academic disciplines contain: the planned results of educational training under the discipline and its place in the structure of the programme, the scope of the discipline, the content of the discipline, the teaching and methodological support for the independent work of the students, the organization of the current control and interim control, the list of educational literature, information resources and technologies, methodical instructions for the students studying the discipline, material and technical base.

In addition, teaching and learning materials contain methodological instructions, sets of initial data, requirements for performing tests, individual projects in the form of a homework assignment; methodical instructions for independent work of the students in the form of methodical recommendations; evaluation tools for assessing knowledge of the discipline; the discipline lecture notes, tests, case studies, video lectures, presentations.

The interaction of various subdivisions and departments in the development and actualization of teaching and learning materials is coordinated.

Recommendations

1. To improve the quality of education, it is recommended to use teaching and learning materials developed in cooperation with employers.
2. Conduct a survey among students and take into account their wishes, understand what they would like to study and how much they need it and whether it is possible to introduce it into the educational process.

Additional material.

During the on-site visit, the reviewers got acquainted with the teaching and learning materials developed in TSTU.

Reviewers conclude that the teaching and learning materials used comply with existing standards.

Based on the results of the questionnaire submitted by the university, the results of which were confirmed during the on-site visit, it was revealed that:

- 29.27 % of students consider that their opinion is taken into account when developing the content of the programme they are studying,
- 12.19 % of students consider that their opinion is not taken into account,
- 51.22 % of students found it difficult to answer,
- 7.3 % of students did not know that they could influence the development of the content of the programme.

42 % of students studying under the programme believe that the departments and the faculty encourage them to participate in determining the content of the programme and organization of the educational process, 51.2 % of students found it difficult to answer.

4. Educational technologies and methods

Criterion assessment: excellent

Strong points

Applied forms of practical training in the university carry a significant share of students' self-study, what also allows students to deepen the understanding of the subject.

During the educational process, the types of training sessions that are used contribute to the professionalism and competence of graduates.

All students of the university have the opportunity to form additional competencies, mastering the training courses on the national portal of the Association "National Platform for Open Education". Educational programmes are implemented on the platform of the Vita LMS electronic system at a high level.

Recommendations

1. Involve employers in direct participation in the development of academic disciplines of the programme.
2. Consider the possibility of co-operation with programme managers of the same area of training of advanced higher education institutions to develop curricula and academic disciplines.

Additional material

During the on-site visit, the reviewers visited the class, the analysis of which is presented below.

Full name of a professor: Nemtinov Vladimir

Group / Specialty: third year course

1. Discipline / module: GIS-technologies

2. Type of the learning session

- lecture
- seminar
- laboratory work
- practice**
- complex class _____
- other _____

3. **Subject of the learning session:** Work in the Arcview system

4. **Purpose of the learning session:** acquisition of practical work skills in the geographic information system Arcview.

5. **Tasks of the learning session:** familiarization with the functionality and interface of ArcView GIS; acquisition of skills in the ArcView GIS environment with an electronic map and tables of attributive databases.

6. Material and technical support of the learning session: a computer class equipped with a multimedia projector, a laptop, a projection screen, 14 computers, a file server.

ASSESSMENT OF THE PROFESSOR

N o.	Analysis criteria	Indexes	Rating (0, 1, 2)
1.	Compliance with the training schedule	Timely start, end of class, time-balanced sections.	2
2.	Organizing time	Greeting. Topic, goal messaging (connection of the goal with the competences formed).	1
3.	Motivation of listeners for upcoming activities	Indication of relevance, the formed professional and / or social and personal competencies.	2
4.	Psychological climate in the audience	The presence of positive emotional interaction between the professor and students; mutual benevolence and audience involvement.	2
5.	Quality of presentation	Structured material; the clarity of the definition of current tasks; systematic and accessible presentation; adaptability of presentation to the peculiarities of the audience; availability of examples, relevant facts.	2
6.	Conformity of the content to the course programme	Compare with working curriculum of the discipline (teaching and learning materials).	2
7.	Use of visual materials	A textbook, a workshop, handouts, tables, drawings, etc.	2
8.	Oratory	Audibility, intelligibility, euphony, literacy, speech tempo; facial expression, gestures, pantomime; emotional saturation of the performance.	2
9.	Audience sensitivity	The ability to respond in time to changes in perceptions of the students.	2
10.	Civility in relation to students		2

11.	Methods of organizing attention and regulating students' behavior	Increase of interest among listeners (original examples, humor, rhetorical techniques, etc.); involving listeners in a dialog, into the process of performing tasks, etc. But not: open call for attention of listeners; demonstration of disapproval; psychological pressure, blackmail.	1
12.	Maintaining "feedback" with the audience during the class	Learning control	1
13.	Summarizing the learning session (<i>reflection organization</i>)	The organization of reflection, during which students actively discuss the outcomes	2
14.	Image	Compliance with corporate style, presentability, charisma	2
15.	Final grade		1.8

While performing the desktop analysis of the report on self-assessment, the analysis of the curriculum and the schedule of the classes, the experts determined that the percentage of learning sessions in an interactive form on the programme on average is 56.2 %.

5. Teaching staff

Criterion assessment: good

Strong points

Educational process based on the programme is provided by qualified professors engaged in research work, having academic degrees and / or academic titles. Specialists from regional companies also participate in the teaching of some disciplines.

The system of training and retraining has been created at Tambov State Technical University, which allows to maintain a set of competencies of the teaching staff.

The system of motivating the teaching staff with material and moral encouragement is organized at a high level.

At the present time, the practice of employers' participation in the educational activity of Tambov State Technical University is expanding.

At the Department of Commerce and Business Informatics there are 2 Doctors of Science - 13.3%, 11 Candidates of Science - 73.3% (out of 15 people working in the Department).

Professors take part in scientific-research work.

During the current year, 87.3 % of the teaching staff attended refresher training courses and retraining courses, undertook internships, 13 % - over a year ago at Tambov State Technical University and other organizations, 2 professors attended refresher training courses abroad (in the CIS countries).

40 % of professors currently combine teaching with work in their specialty of the discipline taught, 13 % combined in the recent past (1 - 3 years).

73.3% of professors are fully satisfied with the system of motivation, the personnel policy practiced at the level of the programme implementation, 26.7 % are partially satisfied.

Recommendations

1 Invite academic staff, implementing programmes, leading scientific and teaching activities in foreign higher education institutions.

2. Develop a procedure for attending refresher training courses in foreign universities, as well as in advanced profile higher education institutions of the Russian Federation.

3. Encourage professors and compensate for the costs of distance refresher training courses, passed on on-line platforms like coursera, khanacademy, edX, etc.

6. Material, technical and financial resources of the programme

Criterion assessment: good

Strong points

To implement the educational process, educational classrooms are provided for lecture-type classes, semester classes, term paper designing (performance of term papers), group and individual consultations, scientific-research work, ongoing monitoring and interim control, as well as premises for independent work. Lecture halls are equipped with technical training aids, used to present educational information to a large audience, educational and scientific laboratories are equipped with training stands and equipment (multimedia projectors, interactive boards, licensed software), computer classes are connected to the Internet, Wi-Fi equipment is installed.

The educational process within the framework of the programme is carried out in 7 computer classes using 95 computers.

The financial support for the implementation of the programme is carried out in a volume not lower than the basic standard costs established by the Ministry of Education and Science of the Russian Federation for the provision of public services in the direction of "Business Informatics" taking into account correction factors that take into account the specifics of educational programmes in accordance with the Methodology determining the standard costs for the provision of public services for the

implementation of state accreditation of the educational programmes of higher education in the specialties and areas of training, approved by the order No. 638 of the Ministry of Education and Science of the Russian Federation of August 2, 2013.

Recommendations

1. Enter into contracts with IT companies to purchase licensed software (for example, 1C), which will allow students to work in real software and gain the necessary knowledge that will help them to quickly realize themselves in the labor market.

Additional material

During the on-site visit, the reviewers conducted interviews with 10 students and 7 professors, participating in the programme implementation, on the topic of satisfaction with the quality of lecture halls.

The obtained data allow to draw a conclusion that:

- 90 % of students are satisfied with the quality of classrooms and lecture halls,
- 10 % find it difficult to answer,
- 100 % of professors are satisfied with the quality of classrooms and lecture halls.

7. Information resources of the programme

Criterion assessment: excellent

Strong points

For self-study of students, classrooms are equipped with computers with the ability to connect to the Internet, providing access to the electronic information and educational environment of the university and to electronic library systems (elibrary, publishing house "Lan", IPRbooks) with which the university has a contract.

The VitaLMS system of information support of the educational process was created in Tambov State Technical University. At the present time, students are registered in the system; professors fill the pages of disciplines with educational materials.

For information and documentation support, the Integrated Automated Information System (IAIS) is intended http://serverdb.admin.tstu.ru:7777/pls/homedad/WEB_HOME.HOME in the Federal State Budget Educational Institution of Higher Education "Tambov State Technical University". The IAIS system is multi-user one, i.e. work with the system involves teamwork with a common database of all participants in the workflow. Each user in the system has a unique login name and password.

The personal page of the professor http://web-iaais.admin.tstu.ru:7777/big/f?p=prof_main includes:

- rating system;
- personal information;

- list of publications for the last five years;
- information on speeches with reports at and conferences.

There is personal accounts for students http://web-iais.admin.tstu.ru:7777/big/f?p=learn_cab

Recommendations

1. Improve the process of automating the preparation of statements of current and final control through the Integrated Automated Information System.

8. *Scientific-research work*

Criterion assessment: good

Strong points

The share of the use of research work results in the educational activity and in the organization system of management of educational activity at the university is 80 %.

For the period of 2014 - 2016, 259 scientific articles were published, including the List of SCADT-5, RSCI-238, WoS-2, Scopus-6 and 8 monographs. For the period of 2014 - 2016, four conferences of the all-Russian level were held in the Department.

In the Department of Commerce and Business Informatics, implementing the programme, the interregional research laboratory "Modern Technologies in Education and Business" operates.

Professors and students take an active part in all-Russian and international scientific conferences.

Doctor of Pedagogic Sciences, Professor of the Department of Commerce and Business Informatics, Molotkova Natalia is a member of the Dissertation Council D 008.014.01 in Institute of Education Management of the Russian Academy of Education (Order No. 386 / nk of the Ministry of Education and Science of the Russian Federation of April 5, 2016).

Professor Molotkova N. made a report at the following International Conferences abroad:

I. Hanoi, Vietnam, Russian-Vietnamese Science Forum "Science, Innovations and Education". Topic: "The experience of international educational and scientific cooperation in the field of training highly qualified personnel" (October 19 - 26, 2014).

II. Scientific Forum BRICS (Brazil, Sao Paulo, Fortaleza, Rio de Janeiro). Report "Fostering research and innovation activities in Tambov State Technical University" (March 19 - 29, 2014).

III. International educational exhibition "AULA-2014" (Spain). Report "Educational scientific projects of Tambov State Technical University in conditions of international interaction: experience and prospects" (February 19 - 23, 2014).

Financing of scientific research is realized at the expense of

- international TEMPUS projects;
- a grant of the Russian Foundation for Basic Research;

- funds of the Administration of the Tambov Region;
- the Ministry of Education and Science of the Russian Federation;
- contracts for Research and Development with JSC "Zavkom";
- assistance fund of housing services and utilities;
- a grant of the Russian Science Foundation;
- a grant of the Department of Education and Science of the Tambov Region.

The average annual amount of funding for scientific research is 747 245 rubles.

Associate Professor of the Department of Commerce and Business Informatics, A. Pchelintsev became the Laureate of the Small Award for 2014 of the International Academic Publishing Company (IAPC) "Science / Interperiodica" for the best publication in the journals published by him. <http://business.tstu.ru/wp-content/uploads/1-5-768x1093.jpg>

Also A.N. Pchelintsev is an expert of the Russian Academy of Sciences, over the past five years, he has 7 publications indexed by the international scientific base Scopus. <https://www.scopus.com/authid/detail.uri?authorId=55618908100> Of these, two articles are also indexed by the Web Of Science database (journals with impact factor > 1).

Associate Professor of the Department of Commerce and Business Informatics, Inkova N., from 2011 to 2014, was the manager of the Joint Project "TEMIIYC 517138 -TEMIIYC-1-2011-1-CZ -TEMPUS-JPCR 2. Development of the Master's Program of double degree in automation / mechatronics".

Recommendations

1. Involve students in scientific-research work and writing scientific articles.
2. Involve students in holding and participating in conferences and forums, both international, and all-Russian as well as conferences and forums held in the higher educational institution.

A very large number of conferences and forums are held in Russian higher educational institutions. Full-time, part-time and distance conferences are held, where students from all Russian cities take part. The Tambov State Technical University has all the necessary equipment, so that students can participate in these events both internally and in absentia.

Additional material

The involvement of students into science clubs was analyzed. For the students of the evaluated programme, there is 1 science club "Quality of Information Services" in the university. The main goal of the organization of the science club is to discuss the development trends and prospects for regional entrepreneurship, which results in recommendations on the formation of an enabling environment for its growth and increasing efficiency using modern information technologies. Number of students who regularly attend science clubs is 15. As a result of work in science clubs, students published articles in the collections "Quality of Information Services: a collection of scientific papers based on the materials of the scientific and practical conference"

(2015) <https://elibrary.ru/item.asp?id=23843512> and "Bulletin of Scientific Conferences" (2016). <https://elibrary.ru/contents.asp?issueid=1593436>.

9. Employer participation in the programme implementation

Criterion assessment: excellent

Strong points

Interaction with partners in the framework of the programme, it assumes various forms:

- participation of employers in the work of the State Qualifying Board, what gives them the opportunity to assess the graduates trained under the programme and, if necessary, to attract them as candidates for internships or some vacant positions;
- attracting students and graduates as trainees;
- employers' participation in "Career Days", master classes and other events, both at the University level and at the programme level;
- organization and holding of master classes by employers;
- participation of employers in the meetings of the Department, where the approval of the exam and test materials takes place.

The share of teaching and learning materials agreed with the key partners of the Programme is 80 %. Syllabi and exam and test materials are coordinated with employers.

Recommendations

1. Assign students to employers' organizations starting from junior years, so that the employer can observe the trajectory of their development.
2. Assign students to employers' organizations in order to prepare the graduate qualification work based on real data.

Additional material

The self-assessment report provides information on the results of the questionnaire survey of employers regarding their satisfaction with the quality of graduate learning outcomes.

To the question on the assessment of competencies, 16 responses were received. In total, employers assessed 6 competencies:

- Professional competencies-5 "Conducting a survey of the activities and IT infrastructure of enterprises"
- Professional competencies-6 "Managing the content of the enterprise and Internet resources, the processes of creating and using information services (content services)",

- Professional competencies-7 "Use of modern standards and techniques, development of regulations for the organization of management of the life cycle of the IT infrastructure of enterprises",
- Professional competencies-8 "Organization of interaction with customers and partners in the process of solving the tasks of managing the life cycle of the IT infrastructure of the enterprise",
- Professional competencies-10 "The ability to position an electronic enterprise on the global market; form a consumer audience and interact with consumers, organize sales in the information and telecommunications network "Internet",
- Professional competencies-9 "The ability to develop Internet sites for the organization and doing business".

Interviewed employers assessed the competencies of a graduate as follows:

- 5 points - high level (from 43 % to 75 % depending on the type of competence),
- 4 points - the graduate's competence was estimated from 12.5 % to 50 % of the interviewed employers,
- 3 points - from 0 % to 25 % of the respondents.

The professional competencies-8 "Organization of interaction with customers and partners in the process of solving the tasks of managing the life cycle of the IT infrastructure of the enterprise" received the lowest rating of the degree of competence formation of a graduate. 50% of employers rated 5 points as high level, 4 points were rated by 37.5 % of employers and by 3 points - by 12.5 %.

10. Participation of students in determining the content of the programme

Criterion assessment: good

Strong points

Tambov State Technical University has a Joint Council of Students, which goal is to ensure the realization of the rights of students to participate in the management of the educational process, the solution of important issues of life of student youth, the development of its social activity, support and implementation of social initiatives. During the questioning of students, 21.95 % of students noted that they participate in the bodies of student self-government.

Students can take part in monitoring the quality of the programme. The monitoring procedure can be initiated either by the department, the faculty or the University, and by the students themselves

Feedback from students is used to improve the actual results of education and (or) improve the quality assurance of education. The questionnaire in the student's personal account is conducted on a regular basis, at least once a year. The survey is anonymous. The results of students' assessment of the quality of teaching in separate

disciplines are taken into account when processing the work programmes of disciplines.

Student council participates in the meetings of the Department, on which the content of work programs of disciplines, topics of graduate qualification works, topics of term papers are coordinated. At the same time, a representative of the student council has a consultative right to vote. At the meetings of the Department, proposals are considered and adopted on the initiative of students to improve the quality of the educational process, taking into account the professional interests of students.

Based on the results of the questionnaire submitted by the TSTU, the results of which were confirmed during the full-time visit, the following was revealed:

- 29.27 % of students consider that their opinion is taken into account when developing the content of the programme they are studying,
- 12.19 % of students consider that their opinion is not taken into account,
- 51.22 % of students found it difficult to answer,
- 7.3 % of students did not know that they could influence the development of the content of the programme.

42 % of students studying under the programme believe that the departments and the faculty encourage them to participate in determining the content of the programme and organization of the educational process, 51.2 % of students found it difficult to answer.

Recommendations

1. Develop measures to encourage the participation of students in determining the content of the programme and the organization of the educational process by the Departments and the Faculty. Give each student the opportunity to express opinion when developing and updating the teaching and learning materials.

11. Student services at the programme level

Criterion assessment: excellent

Strong points

The university developed a programme of educational activities for the period of training of students of Tambov State Technical University. At the level of programme implementation, there are sufficient mechanisms of material support for students: so, in Tambov State Technical University there are: sports camp "Bodrost", recreation center "Pine Corner", sanatorium "Tonus", material support of students is provided, sanatorium treatment is paid for all members of the trade union organization of the university at a rate of 50 % in trade-union sanatoriums of the Tambov region and up to 20 % in the sanatorium belonging to the Federation of Independent Trade Unions of Russia, students which study on a budgetary basis pay 10 % of the cost of a sanatorium-resort voucher at the sanatorium-dispensary "Tonus". Students are given the opportunity to get training under additional courses or programmes, such as

internships abroad, including language and computer courses, various seminars and trainings, master classes, etc.

Tambov State Technical University organizes 8 - 10 student events every month, organizes sports events in "Pine Corner" sports camp and "Bodrost" sports camp, as well as the following activities of the Student Club: holding Knowledge Day (September 1); initiation into studentship; games of the club for the lightheaded and quick-witted; city school league of the club for the lightheaded and quick-witted at Tambov State Technical University; students day "Tatyana Day" (January 25); festival "Student Spring" (March - April); holding Victory Day (May 9), etc.

For the students of the programme, there are about 20 creative clubs, studios, sections, including: student club of Tambov State Technical University, sports sections of Tambov State Technical University, etc.

At the level of programme implementation, there are sufficient mechanisms of material support for students: so, in Tambov State Technical University there are: sports camp "Bodrost", recreation center "Pine Corner", sanatorium "Tonus", material support of students is provided, sanatorium treatment is paid for all members of the trade union organization of the university at a rate of 50 % in trade-union sanatoriums of the Tambov region and up to 20 % in the sanatorium belonging to the Federation of Independent Trade Unions of Russia, students which study on a budgetary basis pay 10 % of the cost of a sanatorium-resort voucher at the sanatorium-dispensary "Tonus".

Students are given the opportunity to get training under additional courses or programmes, such as internships abroad, including language and computer courses, various seminars and trainings, master classes, etc.

Additional material

During the course of the on-site visit, the reviewers were provided with documents confirming the attendance of additional courses and programmes by students.

Based on the analysis of the presented data, the experts conclude that the system of student services takes into account the individual characteristics and inclinations of students and contributes to the process of socialization.

12. Career guidance. Assessment of the quality of preparation of enrollees

Criterion assessment: excellent

Strong points

An annual complex of various activities for potential enrollees is held in Tambov State Technical University: open days; career guidance lectures in schools; participation in parent-teacher meetings; holding cultural events for schoolchildren both in the university and in other organizations. The university provides for structural

subdivisions that organize and coordinate career guidance work, hold olympiads and courses to prepare for the Unified State Exam.

In total for the previous year, 22 retreats for schoolchildren of Tambov city and Tambov region were conducted for potential "Business Informatics" programme. Lectures, master classes, practice lessons, class discussions on the relevant subjects were held for senior pupils of schools in Tambov, Znamensky and Morshansk districts. A practice-oriented lesson "I want to be a businessman - let me be taught" for pupils of 9 - 11 grades of the city of Tambov was conducted in Tambov Regional Universal Scientific Library named after A.S. Pushkin. On an annual basis, the Regional Business Project Competition "Business Ideas of Regional Economy Development" was held for students of 9 - 11 grades in the Department.

Recommendations

1. Select the professional disciplines for organizing open lessons for students of 9 - 11 grades to familiarize a prospective enrollee with the specifics of education in the direction of "Business Informatics".

2. Organize events, including on the Internet, in social networks aimed at advertising the direction of training "Business Informatics" of Tambov State Technical University to attract a large number of enrollees, for example,

- organize various kinds of conferences in the higher educational institution, invite famous speakers, involve their students in the participation of conferences;
- invite famous specialists of this field from well-known higher educational institutions of the country, for conducting master classes;
- create a page of the Department in social networks. Advertise the department. Spread all your achievements, etc.

Additional material

Based on the results of the analysis of documents and the interview of programme managers, the reviewers obtained information on quantity of the events conducted during the last academic year. In total, 28 events were held during the year, including:

- 22 retreats for students of 9 - 11 grades in schools in Tambov city and Tambov region;
- 3 events in the Federal State Budget Educational Institution of Higher Education "Tambov State Technical University";
- 2 open days (all-university and of the Institute of Economics and Quality of Life);
- 1 event in another organization (Tambov Regional Universal Scientific Library named after A.S. Pushkin).

SUMMARY OF THE REVIEWERS

Onokoi Lyudmila

Place of work, position	The Financial University under the Government of the Russian Federation
Academic degree, academic title	Doctor of Sociological Sciences, Full Professor
Additional titles, degrees	Honored worker of higher education
Education	Higher Education
Research interests	Information Systems Design Methodologies
Practical experience in the direction of the programme subject to assessment	7 years

Gusmanova Farida

Place of work, position	Al-Farabi Kazakh National University
Academic degree, academic title	Candidate of Physico-Mathematical Sciences, Associate Professor
Education	Higher Education

Mirzoyan Mariam

Place of work, position	The Financial University under the Government of the Russian Federation
Education	Higher Education

Hegai Pavel

Place of work, position	General director, “Pervaya Kuponnaya kompaniya”
Education	Higher Education