Education & Research: innovation potential of Belarus and Belarusian State University

Sergey V. Ablameyko
Rector of the Belarusian State University
Academician of the National Academy of Sciences of Belarus
HIGHER EDUCATION in the REPUBLIC OF BELARUS
Higher education institutions in Belarus

51 HEIs: 42 - State, 9 - Private

34 Universities;
9 Academies;
8 Institutes

Affiliation:
- Ministry of education – 21
- Ministry of Agriculture – 4
- Ministry of Health – 4
- Ministry of Culture – 3
- Other – 10

Russian Education Institutions (branch in Minsk):
- Russian State Social University (RSSU);
- Plekhanov Russian University of Economics (PRUE)
System of higher education in the Republic of Belarus

Higher Education Specialties

**II level (master programmes)**

- «academic» - 193
- «practice-oriented» - 139

**I level (qualification of a specialist)**

- 386 specialties

- 3 y. - 0,6%
- 4 y. - 49,1%
- 4,5 y. - 17,1%
- 5 y. - 30,1%
- 5,5 y. - 0,6%
- 6 y. - 2,5%

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I level of higher education – conducts training of specialists with basic and special knowledge and skills certified as specialist with higher education.

Educational programme of the I level of higher education assures obtaining specialist qualification with higher education;

Educational programme of the I level of higher education integrated with post-secondary educational program.

II level of higher education (Master’s programme) – provides in-depth training, develops knowledge and academic methodology and research skills, assures obtaining a Master’s degree.

Educational programme of the II level of higher education forms knowledge and academic methodology and research skills;

Educational programme of the II level of higher education with in-depth specialist training.

There are 13 programmes taught in English.
First level of Higher Education (equivalent of Bachelor’s programme)

ISCED- 6 Level «Bachelor`s degree programme»

Course duration: 4–4,5–5 years, ECTS – 240–300

Medium of instruction: Russian / Belarusian /English

Free education for citizens:

More than 380 educational programmes:

- Pedagogics
- Art and Design
- Humanities
- Law, Economics, Management
- Natural sciences
- Ecological sciences
- Technics and Technology
- Architecture and Construction
- Rural and Forestry
- Medical Care
- Tourism and Hospitality
- Security Service

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Second level of Higher Education (Master’s degree programme)

ISCED- 7 Level «Master`s degree programme»

Course duration: 1–1,5–2 years, ECTS – 60–120

Medium of instruction: Russian / Belarusian / English

Free education for citizens:

More than 300 educational programmes:

- Pedagogics: 8
- Art and Design: 5
- Humanities: 27
- Law, Economics, Management: 60
- Natural sciences: 27
- Ecological sciences: 7
- Technics and Technology: 86
- Architecture and Construction: 14
- Rural and Forestry: 22
- Medical Care: 31
- Tourism and Hospitality: 4
- Security Service: 23

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### Postgraduate education (postgraduate studies)

#### Number of theses defended by the staff of institutions of the Ministry of Education of the Republic of Belarus:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Candidate's Dissertation</td>
<td>214</td>
<td>190</td>
<td>202</td>
<td>173</td>
<td>251</td>
<td>164</td>
</tr>
<tr>
<td>(% of the total number of defenses in the country)</td>
<td>41,2</td>
<td>38,5</td>
<td>39,5</td>
<td>35,2</td>
<td>48,9</td>
<td>36,4</td>
</tr>
<tr>
<td>Doctoral theses</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>14</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>(% of the total number of defenses in the country)</td>
<td>36,2</td>
<td>34,8</td>
<td>43,6</td>
<td>31,1</td>
<td>43,8</td>
<td>45,5</td>
</tr>
</tbody>
</table>

#### The number of students in postgraduate and doctoral studies of institutions of the Ministry of Education:

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>postgraduate studies, total.</td>
<td>3226</td>
<td>3147</td>
<td>2963</td>
<td>2736</td>
<td>2749</td>
<td>2802</td>
</tr>
<tr>
<td>doctoral studies, total.</td>
<td>80</td>
<td>81</td>
<td>83</td>
<td>107</td>
<td>142</td>
<td>180</td>
</tr>
</tbody>
</table>
The main directions of development of higher education

Improving the quality of training specialists. Increasing the effectiveness of practice-oriented training and deepening ties with employers.

Enhancing the competitiveness of higher education in the global educational space.

Improving of the planning system and optimization of the structure of training of specialists with higher education.

Optimization of the higher education system and improving the management of the system of higher education.

Improving of the material, technical, educational and laboratory base of higher education institutions.
The scientific activity of universities: the main directions of research

- Information technology and computer technology;
- Power engineering and metallurgy;
- Medicine;
- Mechanics, electrical engineering;
- Construction, architecture;
- Maths, physics;
- Machine building;
- Materials Science;
- Instrument making;
- Transport;
- Earth sciences, ecology;
- Psychology, history, culture, economics, education;
- Electronics and photonics, nanotechnology, biotechnology, chemical technologies, space research

There are contracts between Belarusian universities and partners from 64 countries of the world within the framework of more than 1820 agreements
More than 1 thousand teachers annually participate in the educational process at universities of Russia, Lithuania, Poland, England and others.
Student contingent by region and education profiles

Higher education profiles:
- A Pedagogics.
- B Pedagogics. Vocational training
- C Art and design
- D Humanities
- G Natural sciences
- H Ecological sciences
- I Technics and technologies
- J Architecture and building
- K Rural and forestry
- L Public health services
- M Social defense
- N Physical training and tourism
- O Public catering.
- P Security service

Total HEIs - 52, state - 43; private - 9.
Total students - 336 373 people, including:
- studying full-time - 178 182,
- studying part-time - 158 191,
- undergraduates - 10 227,
- foreign students - 17 938.
Number of foreign students

- CIS – 62.5%
- Asia – 30.5%
- Africa – 4.8%
- Europe – 1.5%
- North and South America – 0.6%

Foreign students: 19,059 students from 98 countries:

- Turkmenistan - 8,865
- China - 1,954
- Russia - 1,640
- Iran - 930
- Tajikistan - 696
- Kazakhstan - 682
- Nigeria - 608
- Azerbaijan - 523
- Iraq - 389
- Lebanon - 316
Practice-oriented education

- internships in the modern companies with the latest equipment (up to 20 weeks);
- presence of the branches of departments, base institutions, joint training, research and industrial laboratories, scientific and production complexes in industries for all higher education institutions;
- participation of international experts and representatives of employers in the development of education programmes;
- link between the learning outcomes and specific problem solutions (related to research or production);
- etc.

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The structure of specialties of vocational education system

Higher education
- II level - 332
- I level - 386
- Specialized secondary education - 189
- Technical and vocational education - 105
- Retraining - 392

Academic master’s - 193
Practice-oriented master’s - 139
At the higher education level - 357
At the specialized secondary education - 35

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Regional cooperation in the field of education

Commonwealth of Independent States (since 1991)
- Azerbaijan
- Armenia
- Belarus
- Kazakhstan
- Kyrgyzstan
- Moldova
- Russia
- Tajikistan
- Turkmenistan
- Uzbekistan
- Ukraine

Eurasian Economic Community (2001 - 2014)
- Belarus
- Kazakhstan
- Kyrgyzstan
- Russia
- Tajikistan
- Uzbekistan

Eurasian Economic Union (since 2014)
- Armenia
- Belarus
- Kazakhstan
- Kyrgyzstan
- Russia
On May 15, 2015 the Republic of Belarus became the 48th member of the European Higher Education Area.
Joint education institutions abroad

7 are functioning

2 are in the process of establishing

Countries: USA, BANGLADESH, VIETNAM, ARMENIA, AZERBAIJAN, TAJIKISTAN, SRI-LANKA
Academic mobility

Countries in which Belarusian students receive education

Joint educational programmes – 25.
Partner countries:

- China: 13%
- France: 13%
- Tajikistan: 10%
- Germany: 6%
- Poland: 6%
- Vietnam: 6%
- Russia: 3%
- Sweden: 3%
International agreements on the mutual recognition of foreign credentials

Academic (for continuing education) and professional (for employment) recognition of foreign credentials is conducted by the Ministry of Education of the Republic of Belarus. Examination of foreign documents on education is provided by the Foreign Credentials Assessment Department (Belarus ENIC).

Foreign Credentials Assessment Department (Belarus ENIC)
220007 Minsk
Moskovskaya Str, 15-219
Fax: +375 17 228 13 13
e-mail: mitskevich@nihe.by
Ways of modernizing higher education

- Improving the quality of training. Improving the efficiency of practice-based training and strengthening relations with the contracting organizations;
- Improving the competitiveness of higher education in the world educational area;
- Improving the system of planning and optimizing the structure of training specialists with higher education;
- Optimizing the system of higher education institutions and improving management of the higher education system;
- Improving the material and technical, educational and laboratory resources of higher education institutions

Optimizing the structure of Higher Education

I Cycle

- Bachelor Degree 3-3.5 years (180-210 ECTS)*
- Bachelor Degree 4 years (240 ECTS)
- Bachelor Degree 4.5 years (270 ECTS)

Continuous higher education programs 5-5.5-6 years (300-360 ECTS)

II Cycle

- Master Degree 1-2 years (60-120 ECTS)

*The educational program of higher education, integrated with specialized secondary education

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Clustering in the system of higher education

**Educational Complex (CLUSTER)**
- association of institutions of various levels of education: vocational, secondary specialized and higher education

**Network System of Universities**
- forming clusters of educational institutions of the same level based on the principle of specialization

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Belarusian State University: in the country and in the world
BSU is among 2% of the best universities of the world and is included in more than 10 influential international rankings:

- ARWU by Subject (Physics)
- THE (TIMES HIGHER EDUCATION)
- QS
- SClmago Institutions Rankings (SIR)
- Webometrics Ranking of World Universities (WRWU)
- U-Multirank
- RUR
- 4icu
- URAP, etc.

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The BSU entered into the oldest and one of the most prestigious world rankings ShanghaiRanking’s Global Ranking of Academic Subjects 2017 – Physics and took a place in the group **401-500**. This is the first time when a Belarusian university is ranked by the Shanghai ranking.

The ShanghaiRanking's Global Ranking of Academic Subjects contains university assessment in **52** subjects, including natural sciences and engineering, life sciences, medicine and social sciences. In total, more than 4,000 universities were evaluated in the study. The final version of the ranking included **1,409** universities, including **12 Russian universities** and one Belarusian university.
In June 2017 the BSU took the 334th position in the latest edition of World University Rankings 2017/18 released by the British agency QS.

In 2015 the QS Agency entitled the BSU to use the ranking logo to emphasize high international reputation of the university on its website and in print media.
According to the last edition of the excellence rating of Webometrics Ranking of World Universities BSU reached 506th place.

(2% of the 30,000 universities existing in the world)
BSU today is a united powerful educational, scientific and production complex:

- **26** faculties and educational institutions
- **10** research and production institutes and centers
- **41** faculty research laboratories
- **10** innovation production enterprises
- **30** legal entities

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BSU is the leading educational center in Belarus

Founded on October 30th, 1921

In 2015 Belarus joined the Bologna process

BSU Quality Management System is certificated according to the requirements of STB ISO – 9001
Faculties and Educational Institutions of BSU

- Pre-University Education
- Mathematics and Mechanics
- Applied Mathematics and Computer Science
- Radiophysics and Computer Technologies
- Physics
- Geography
- Chemistry
- Biology
- History
- Ecology
- Philosophy and Social Sciences
- Sociocultural Communications
- Business and Technology Management
- Management and Social Technologies
- International Relations
- Economics
- Philology
- Theology
- Law
- Military
- Journalism

29,000 students and graduate students (academic year 2016-2017)

There are more than 30 specialties of postgraduate courses that are available to obtain in English.
<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>8,800</td>
</tr>
<tr>
<td>Teaching staff</td>
<td>3,650</td>
</tr>
<tr>
<td>Scientific manpower</td>
<td>520</td>
</tr>
<tr>
<td>Doctors of Science</td>
<td>410</td>
</tr>
<tr>
<td>Candidates of Science (PhD)</td>
<td>1,940</td>
</tr>
<tr>
<td>Associate Members of NASB</td>
<td>13</td>
</tr>
<tr>
<td>Academicians of NASB</td>
<td>12</td>
</tr>
</tbody>
</table>
• More than 100 buildings
• 3 campuses
• 10 dormitories
• 4 media classrooms
• University Network Resources
• Fundamental Library
• 3 sport complexes with swimming pools
Research and Innovations at the Belarusian State University
Implementation of the innovation chain stages in the BSU

BSU complex includes:

- educational
- scientific and research
- production units

Science and Innovation chain
Entities of scientific, scientific-technical and innovational activities of the BSU complex

- 26 faculties and educational institutes
- 4 research institutes
- 2 national research centers
- 42 research laboratories at faculties
- 5 unitary enterprises

University clusters by directions:

| ► chemical materials and technologies |
| ► development of educational and scientific equipment |
| ► radio physics and production of measuring devices |
| ► informational technologies |
Main types of products developed and produced in the BSU

Hardware software complexes, equipment and devices
- Automated complexes
- Controlling and measuring devices
- Medical equipment
- Electronic components and devices
- Educational devices, equipment and complexes

Equipment and instruments
- Technological equipment
- Instruments

Substances and Materials
- Engineering and manufacturing
- Agricultural
- Medical

Industrial technologies
- Application of coatings
- Production of medical dosage forms
- Biotechnologies
- Chemistry and petro chemistry
- Agriculture
- Power engineering and fuel

Informational technologies
- Science
- Education
- Management

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WWW.BSUPRODUCT.BY
In 2016 the BSU complex sold science intensive R&D products to customers of the Republic of Belarus to the amount of $6,735,600 US, scientific services to the amount of $5,554,900 US.

The University will continue to increase its influence on the development of the key branches of the economy of our country, including:

- nano- and biotechnical sector
- pharmaceutical and chemical industry
- public health
- instrument engineering
- agriculture, etc.
In 2008-2016 R&D products of the BSU have been exported in 39 countries of the world

Partner countries in 2016
1. Belgium
2. Bulgaria
3. China
4. Germany
5. Great Britain
6. Indonesia
7. Kazakhstan
8. Korea
9. Poland
10. Russia
11. Turkmenistan
12. USA

Export dynamics

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of contracts</td>
<td>73</td>
<td>82</td>
<td>78</td>
<td>92</td>
</tr>
<tr>
<td>Number of countries</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Amount, USD</td>
<td>1,891.000</td>
<td>2,239.500</td>
<td>2,132.500</td>
<td>3,021.600</td>
</tr>
</tbody>
</table>

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Cluster of “Chemical materials and technologies”

Chemical Faculty

Research Institute of Physical and Chemical Problems

Production Enterprises:
• “Unidragmet BSU”
• “Unitehprom BSU”
• 32 technologies and methods of processing of secondary raw materials for extraction of precious metals were developed by the scientists of the Chemical Faculty of the BSU, the Research Institute of Physical and Chemical Problems and UE “Unidragmet BSU”.

• 320 items of industrial and technological equipment.

• Allow to process more than 20 basic types of scrap and waste on its own production plant.

State laboratory of assay analysis accredited in accordance with STB ISO MEK 17025 for the use of 28 certified measuring methods of their own design and 4 GOSTs.

More than 4,5 thousand chemical and physicochemical analyzes are performed annually.
Pharmaceutical products are developed by the full innovative cycle, from the formulation of the technical task to serial production jointly by the Research Institute of Physical and Chemical Problems and UE “Unitehprom BSU”. Medicinal substances and preparations that were produced in 2016 made up the amount of $235,600 US.

In 2016, UE “Unidragmet BSU” developed the manufacture of pharmacological substances based on coordination compounds of platinum.

In 2016, UE “Unidragmet BSU” produced 0.18 kg of cisplatin and 0.1565 kg of oxaliplatin.

The products are delivered to the UE “Unitehprom BSU” for production of finished dosage forms.
Faculty of Radio physics and Computer Technologies is engaged in production of a number of measuring devices, that are produced at the UE “Unitehprom BSU”.

Service of information-measuring systems of the UE “Unitehprom BSU”

- Computer-oriented measuring instruments for a wide range of purposes (oscilloscopes, generators, ADCs, DACs, etc.).
- Industrial measuring instruments (sound level meters, vibroacoustic analyzers, strain gauges, pressure and temperature gauges, etc.).
- Equipment for satellite systems of transport monitoring.
- Automated measuring complexes for testing and metrological services of enterprises.
- Custom-made control and measuring, monitoring systems for various purposes (analog and digital electronics, software).
Cluster of “Development of educational and scientific equipment”

<table>
<thead>
<tr>
<th>Type of equipment</th>
<th>Quantity of the equipment sold, number of sets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment for general educational institutions (tenders)</td>
<td>988</td>
</tr>
<tr>
<td>Equipment for district departments of education, sport and tourism under separate contracts</td>
<td>949</td>
</tr>
<tr>
<td>Laboratory equipment for Higher Education Institutions</td>
<td>259</td>
</tr>
</tbody>
</table>
Scientific educational production cluster of “Information technology”

Research Institute of Applied Problems of Mathematics and Informatics is engaged in:
- conducting training on special subjects

Software Development

- Formation of thesis topics, students’ practical training, execution of master's, diploma and coursework are carried out on the basis of the real themes of the Institute.
- Cooperation with the companies of the High Technologies Park, National Bank of the Republic of Belarus, the institutes of the National Academy of Sciences of Belarus, and branch research institutes: RI of Technical Information Protection, N.N.Alexandrov National Cancer Centre of Belarus.

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Center of youth innovations and entrepreneurship “Start-Up BSU”

Aim of the Center

Development of the students’ innovative potential to form a willingness to generate new ideas, create and implement innovative developments in production and social sphere

Tasks of the Center

<table>
<thead>
<tr>
<th>Task</th>
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<tbody>
<tr>
<td>information and methodical support of innovative youth ideas and projects</td>
</tr>
<tr>
<td>promotion of increase of personal entrepreneurial effectiveness and motivation of students to ensure growth of business activity</td>
</tr>
<tr>
<td>creation of conditions for implementation of joint initiatives and the development of interdisciplinary relations between Higher Education Institutions, research institutes, foundations and other organizations and business structures</td>
</tr>
</tbody>
</table>
“School of Entrepreneurship and Management for Youth. Your own business” for students and young specialists.

**Mission of the Center** is to conduct research aimed at revealing the role of youth in the innovative development of the Belarusian society, practical implementation of research results, implementation of paid educational services that contribute to meeting the public and individual needs of the individual.
Establishment of the University business incubator

**Aim:**
support of students, undergraduates, graduate students and employees in creation and development of new successful businesses that are based on research and development.

**Main tasks:**
- Selection of small businesses entities for allocation in the business incubator
- Rendering of educational, marketing, consulting and other organizational-administrative services to small business entities

**Financing:**
1. Grants (including international ones).
2. Targeted financing within the framework of the program for support of the entrepreneurship development.
3. Targeted financing as a part of the Student Initiative Support Program.
4. Extrabudgetary funds of the BSU.
5. Sponsorship and charitable contributions.

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Establishment of a scientific and technological park of the BSU

It is assumed that a distributed-type technopark will be established on the basis of the UE “Unitehprom BSU”

Areas of scientific and technical activities for the formation period:

- **Chemical and pharmaceutical industry**
  - development and manufacturing of new import-substituting medications and preparations

- **Instrument engineering**
  - development and manufacturing of new import-substituting devices for continuous monitoring of high-temperature technological processes, instruments for measuring, testing and navigation

- **Biological and food industry**
  - development, research, introduction into manufacturing, production of food additives for bakery, macaroni, meat and fish products
Specialization of the BSU Technopark

- Power efficiency and energy saving
- Ecology and rational nature management
- Radio electronics and space technologies
- Electronics and photonics
- Medicine and pharmaceutics
- Systems and complexes of equipment
- Multifunctional materials and technologies
- Agriculture and food industry
- Information and communication technology
- Biotechnologies
FUNDAMENTAL RESEARCH

- Nanostructures and nanotechnologies
- Laser technologies
- Space research
- Elementary particles and high-energy physics
- Theory of differential and integral equations
- Mathematical modeling of complex systems
- New materials and technologies
- Biotechnologies and genetic engineering
- Concept of macroeconomic stabilization in Belarus
- Juvenile justice
- Development of the National Atlas of Belarus

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Basic R&D products of the BSU

**Hardware-software complexes, devices and equipment**
- Hardware-software complexes
- Control instrumentation
- Medical devices
- High-end devices and integrated circuits
- Training devices, equipment, systems

**Equipment and instrument**
- Technical equipment

**Substances and materials**
- Industrial and agricultural substances
- Protective substances and materials
- Medical substances and biopreparations

**Industrial technologies**
- Biotechnologies and chemical technologies
- Fuel and energetics

**Information technologies**
- Information high-end technologies
- Information training technologies

More than 1,000 items altogether

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[www.bsu.by](http://www.bsu.by)
## Research Laboratories

- Geoinformational technologies in geomechanics and geodinamics
- Information technology and computer graphics
- Applied probability analysis
- Biophysics and biotechnologies
- Cell engineering and nanobiotechnologies
- Bioanalytic systems
- Dielectric spectroscopy of heterogenous systems
- Nonlinear optics and spectroscopy
- Power efficient materials and technologies
- Semiconductors spectroscopy
- Physics of electronic materials
- Physics and instruments of semiconductors
- High-energy ionic implantation and functional diagnostics
- Spectroscopic systems
- Physics of ion-plasma modification of rigid bodies
- Scientific instrument engineering
- Materials and instrument structures of micro- and nano-electronics
- Information-measuring system
- Applied space technologies
- Laser systems
- Belarusian folklore
- Information processing methods

- Information systems
- Instrumental-analytical technologies
- Inorganic and general chemistry
- Chemical-analytical systems
- Hetero-organic synthesys
- Radiochemistry
- Physical chemistry of condensed medium
- Applied problems of toxicity combustion products
- Assay tests
- Molecular genetics and biotechnology
- Phytogenetics
- Molecular genetics and biotechnologies of microorganisms
- Human molecular genetic
- Physiology
- Physiology and biotechnology of plants
- Metabolic biochemistry
- Biochemistry and pharmacology of bioactive substances
- Applied problems of biochemistry
- Biotechnology
- Transgenic plants
- Hydroecology
- Landscape ecology
- Limnology
International Cooperation of the Belarusian State University
About 400 cooperation treaties with universities from 54 countries of the world
International Cooperation

- Around **400** cooperation treaties with universities from **54** different counties.
- **1,000** employees and **700** students are sent on academic missions abroad annually.
- Over **40** international projects.
- **12** joint programs with foreign universities.
- Membership in **7** International University Associations.
- **4** international centers in BSU.
Academic mobility

Annually:

• more than 1000 staff members are sent abroad for study and research visits
• about 700 students are sent abroad for study and participation in conferences
• about 100 incoming and 250 outgoing exchange students

Top 7 countries outgoing mobility
1. Russia
2. Germany
3. Poland
4. China
5. Czech
6. Italy
7. France

Top 7 countries incoming mobility
1. Russia
2. Germany
3. Poland
4. Ukraine
5. China
6. Lithuania
7. Italy

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BSU actively participates in a number of the international projects

In 2016, there were 17 educational projects involving BSU. Among them:
- 5 TEMPUS projects,
- 5 Erasmus-Mundus projects,
- 4 Erasmus+ projects
- The program of Jean Monet,
- DAAD,
- UNFPA,
- Visegrad Fund,
- Information point of the Council of Europe.

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International students 2016/2017

Total 2,444

268 Undergraduate students

89 Postgraduate students

1,828 Students

259 Attendees

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Percentage of foreign students at different faculties in 2016-2017

- Faculty of International Relations: 20%
- Faculty of Philology: 15%
- Faculty of Economics: 13%
- Faculty of Law: 9%
- Institute of Journalism: 5%
- Faculty of Geography: 5%
- other: 33%
In the BSU there are foreign citizens from 56 countries of the world.
Annually, BSU is represented at 20-25 international exhibitions

In Belarus, Bulgaria, China, Germany, Georgia, Italy, Japan, Kazakhstan, Russia, Serbia, Slovakia, Spain, Vietnam, United Arab Emirates, etc.
BSU innovation awards on forums and exhibitions
Annually, the University hosts more than 90 international conferences, seminars and symposiums
Innovative teaching & learning at the Belarusian State University
Belarusian State University conducts practice oriented teaching in major spheres including Nuclear Physics and Technologies.

A working Lab-model of Nuclear Power Plant is installed at the Faculty of Physics.
Belarusian State University is actively developing its first students’ satellite to be launched into space in partnership with China.

The satellite is developed by students within the frameworks of their study process.
Distance Learning technologies as a part of everyday learning process

The portal of Online educational resources of the Belarusian State University – a collection of hundreds of online courses for students in major disciplines. www.dl-bsu.by
Online Lectures, Webinars and VideoPodcasts as everyday teaching and learning technologies

1. Волновая функция

Примеры
3. Волновая функция атома водорода (2p)

$$\psi_{2p} = \frac{1}{4\sqrt{2\pi}} \left( \frac{1}{a_0} \right)^{5/2} r \cdot e^{-\frac{r}{2a_0}} \cdot \sin \theta \cdot e^{i\phi}$$

где

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Augmented Reality as a tool in teaching and media communications

Augmented Reality applications add more dynamic content to traditional forms of education and media.
New Media and Social Networks in Education

“Physics for all” – a new Instagram project at the Faculty of Physics of the BSU
Thank you for attention!

We are always open for cooperation!

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