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**Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE**



**STRATEGY**

**OF**

**Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE**

**(2019 – 2023)**

**Skopje, 2018**

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## INTRODUCTION

The development of this Strategy was initiated by Prof. Dr. Nikola Jankulovski, Rector of Ss. Cyril and Methodius University in Skopje. There were multiple reasons behind its development and adoption.

First of all, planning is a conscientious human activity typical of all successful, organized and efficient systems made and managed by man. Planning makes it possible to set goals, to define the activities required to attain those goals, as well as to organize their timely completion. In addition, planning also provides the basis to be used in the monitoring of the gradual achievement of the goals set and the undertaking of corrective actions, if needed.

Secondly, all eminent universities in the world develop and publish their strategies. These strategies have both internal and external objectives: on one hand, the University Units and their employees have the mission, vision and strategic goals the University aspires to on their minds at all times and embed them in their own plans and programs; on the other, the public, students and other stakeholders will have the possibility of recognizing the perspectives of the University and choose their own relationship with the institution on such basis. At the same time, it was the lack of strategic planning that stood out as one of the weaknesses in the international evaluations of the University in the past; therefore, the development of this Strategy will eliminate this deficiency as well.

Finally, the development of this Strategy and the manner in which this was done aim at the creation of a cohesive nucleus, around which the interests of all units of the University and all of the employees will align and onto which they will build. The Strategy is to provide a long-term perspective and direction for all entities forming a part of the University, so that they may base their own actions on the mutually set goals and tasks. Finally, the plan designed in this way is expected to take the rate of integration of the University to the next level and to provide the basis for greater cooperation and coordination between some of its units.

The Strategy refers to the upcoming period between 2019 and 2023. It is evident that this period does not coincide with the term of any Rector, as the objective is to ensure continuity and long-term commitment to the attainment of the mutually formulated and accepted goals. To provide the basis for such a document, the plan was developed through consultations of the entire management and expert potential of the University.

A new University vision and mission were defined, which we believe reflect the ongoing commitments and mid-term perspectives of the institution. Regular revision of the vision and mission and their amendment and addenda from time to time have been recommended by the most eminent accredited institutions in the field of higher education.

The survey of the managers of the units produced the basis for formulation of the Strategy and priorities of the University. The deans and managers were invited to present their own opinion on the key priorities of the University for the upcoming period, as well as to offer their own identification of the University's strengths,

weaknesses, opportunities and threats. Their views were combined into a single SWOT analysis, which constitutes an integral part of this plan.

The priorities defined and the SWOT analysis served as the basis for the determination of the strategic and operational activities that ought to be realized over the planning period, in order to achieve the strategic goals. The latter will, in turn, serve as the basis for conceptualizing the action plans, which are to be designed to cover shorter periods and to include specific activities, with defined implementation agencies, budgets and completion deadlines.

In addition, an anonymous survey of the entire University teaching staff was conducted. The survey was done electronically, in the form of a questionnaire requesting the respondents to provide their own assessment of some of the University's qualitative features. These features were divided into three key segments:

- improvement of the quality and relevance of the higher education;
- enhancement of the quality via mobility and cross-border cooperation;
- creation of a knowledge triangle: linking the higher education, research and business to achieve excellence and regional development.

Finally, in order to obtain information on specific areas in the education and scientific work, on the cooperation with foreign universities and the economy, on the various aspects of financing, etc., concrete quantitative data about the results in the areas mentioned over the last five years were requested and obtained from the University administrative units. These data served as the basis for formulation of the future University policies. In parallel with this, the same group of criteria will be used in the planning period as indicators supporting the monitoring of the progress achieved in individual areas and the evaluation of the success rate of the Strategy.

Once the Strategy is adopted, a procedure for its operationalization and implementation will need to be developed. This procedure is to cover:

- the development of shorter periods action plans;
- monitoring the Strategy success indicators (the same ones that were provided and data about which were gathered and included in Appendix 1 to this plan);
- regular revision of the Strategy;
- timely preparation for and start of the development of new strategies.

## **VISION AND MISSION**

### **VISION**

*Ss. Cyril and Methodius University in Skopje to grow into a university of high international reputation in the field of education and science, as a respectable member of the family of European universities.*

### **MISSION**

As the oldest university in the Republic of Macedonia, Ss. Cyril and Methodius University in Skopje is the foundation and main pillar of the educational system, scientific work and cultural development of the country. The University is responsible for the fostering, preservation and promotion of all aspects of the national identity and its full affirmation in the country's process of accession to the European Union and becoming a part of the wider family of European nations.

The University develops and continually improves its curricula to create highly educated professionals in all areas of the natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social sciences, and humanities and arts, all in accordance with the highest international standards. Through its educational activity, the University endeavors to meet the demand of highly qualified profiles in all segments of both the private and public sector, continually adjusting its operation to the dynamic changes in this area.

In the field of its scientific work, the University implements scientific projects, theoretical and applied research, and other forms of scientific work that contribute to the development of scientific thought in the country and beyond. At the same time, the cooperation with the private and public sector allows for a two-way exchange of knowledge and experience, thus adding to the achievement of a higher level of the overall social development and continuous and sustainable development of the University.

Throughout its teaching and scientific activities, the University fosters active cooperation with higher education, scientific and other related institutions in other countries, based on the principles of equality, responsibility and compliance to the highest possible standards.

The University will also cultivate and develop artistic activities.

The University invests constant efforts in the nurturing and advancement of the critical thought, acting as a society's corrector, contributing to the development of human rights and freedoms, and leading the processes of modernization and progression in all spheres of social life.

## **1. KEY VALUES**

The University's key values emerge from the basic goals and characteristics of the universal academic ethics, as well as from the University specific ethical duties, incorporated into the Code of Ethics of Ss. Cyril and Methodius University in Skopje as values and norms at the basis of its operation.

The fundamental goals and characteristics of the universal academic ethics, and thus also those of the ethics of the University include:

- proper performance of functions by the academic institutions;
- promotion of the educational, scientific and artistic activities of the University and in the society as a whole;

- spreading the academic culture;
- respecting the academic traditions;
- preserving the dignity of academic teachers;
- fostering good relations between the institutions and the University teaching staff;
- caring for the youth, undergraduate and postgraduate students;
- maintaining and developing the ethnics of noble conduct, refraining from offending others, providing assistance and developing the general humanistic ideas.

The special ethical duties of Ss. Cyril and Methodius University in Skopje arise out of the University's position of the oldest and leading university in the Republic of Macedonia, in the sense of aiding the country's scientific and cultural development and the work of the other universities in the country.

- The main ethical function of all of the University institutions and faculty staff is high-quality performance and promotion of their activities, as well as preservation of the reputation of the University and or their own reputation as scientists, artists, teachers and students.
- The institutions of Ss. Cyril and Methodius University are equal. They cooperate in their work, treating each other in the course of their work and cooperation as fraternal and equal institutions and developing the forms of mutual care and protection.
- The relationship between the University faculty and the students is one of trust and honesty among intellectuals. They respect each other's personality, efforts, views and achievements, objectively assessing their work and accomplishments.
- At Ss. Cyril and Methodius University, there is no room for violence, pressure and bribery. The University will not tolerate and fights against corruption, and moral and sexual abuse. Any unbecoming and immoral and dishonest behavior, i.e. behavior that is in general contrary to the civil and academic ethical values, has no place at the University.
- Science and art follow the ethical norms of: development of the latest scientific and artistic knowledge; respect for the status of the research topic and area; authenticity and originality of the findings; linking with other national and global research and scientific institutions throughout the research efforts; and availability of the findings primarily for the scientific community, but also for all those interested.
- Ss. Cyril and Methodius University fosters constant and close cooperation with the similar institutions in the country and abroad. In the course of such cooperation, the University applies the highest norms of ethical conduct, such as friendly attitude, trust, collegial negotiations, honesty, and responsibility for the tasks undertaken.
- The faculty staff of Ss. Cyril and Methodius University includes individuals with a sense of high level of responsibility for their own behavior and the activities of their own institution and the University as a whole. In doing so, the level of responsibility is in line with their place in the academic hierarchy.

- Students and young scientists and artists of Ss. Cyril and Methodius University are fully, properly and timely informed of their rights and of the studying and scholarship opportunities, as well as of the other potential opportunities for their personal development in the country and abroad. Ss. Cyril and Methodius University initiates and provides assistance in the promotion of the status of the students and young experts in society, advocates the formulation of rules and other possibilities for promoting and including them in the operational, cultural and social processes.

## **2. ANALYSIS OF THE KEY DIMENSIONS OF QUALITY IN THE FIELD OF TEACHING AND SCIENCE**

### **2.1. Results of the survey conducted among professors at faculties and institutions**

The European Commission defined the strategic guidelines and addressed key issues of importance in the higher-education development policies, intended for both the policy creators at national level and the higher-education institutions themselves. To that goal and to gather relevant data, the University applied a questionnaire, the aim of which was to identify and establish the state of play of the key dimensions of the quality of education at the faculties and institutions within Ss. Cyril and Methodius University in Skopje.

The questionnaire was created in line with the two strategic documents of the European Commission: Supporting Growth and Jobs – 2011 Agenda for the Modernization of Europe’s Higher-Education Systems, and the 2017 Renewed EU Agenda for Higher-Education.

The questions were divided into three key segments:

- improvement of the quality and relevance of higher education;
- enhancement of the quality via mobility and cross-border cooperation;
- creation of a knowledge triangle: linking the higher education, research and business to achieve excellence and regional development.

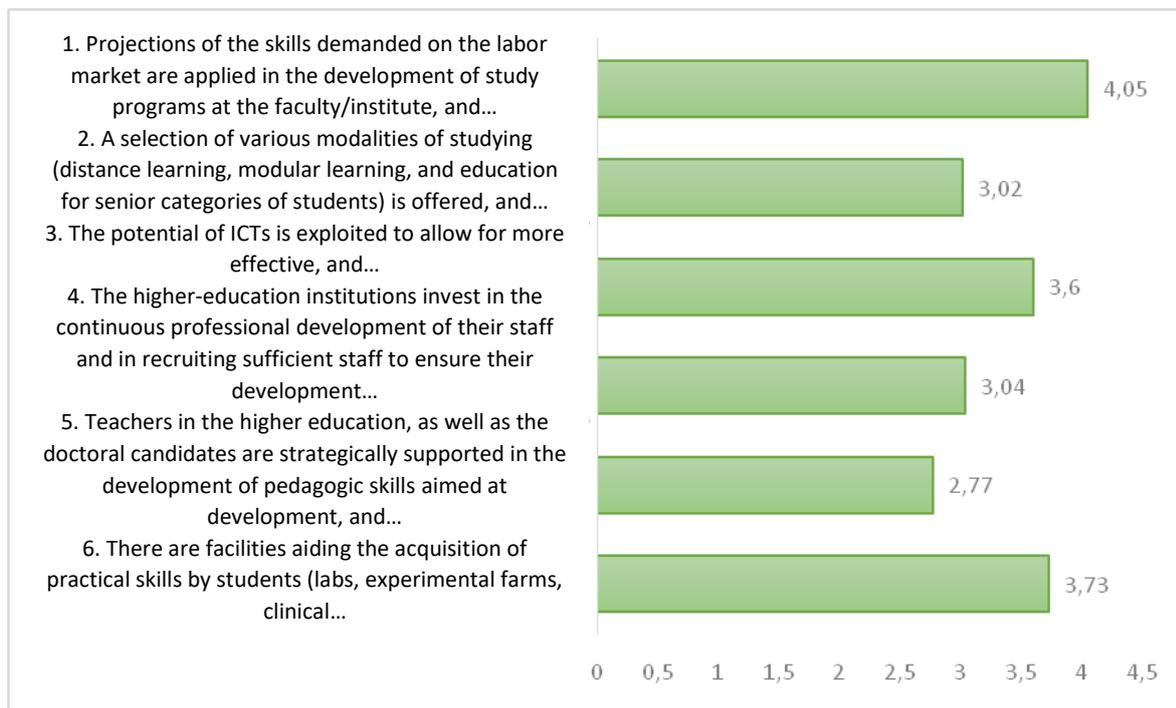
The data are summarized below, by including some basic data, taking into account the sample that was obtained and that included 466 respondents from among the faculty staff of Ss. Cyril and Methodius University in Skopje. Initially, the analysis covered the profile of the respondents, and then the above mentioned segments as well.

### **Respondents’ Profile**

The analysis includes the answers of 466 respondents; in terms of the gender structure, the share of women respondents (59%) was dominant. Moreover, based on

the answers provided, it may be seen that the majority of the respondents come from the social and technical/technological sciences – 23.8% and 22.5%, respectively. The rate of response was also high among staff from the humanistic, medical and natural and mathematical sciences – 14.1 %, 13.5 % and 12 %, respectively. In terms of academic ranks, full professors were the most numerous respondents (45.9%), returning 214 filled out questionnaires. They were followed by associate professors, 28.7% of whom responded to the questionnaire. Docents returned 101 questionnaires – 21.6% of the total number of the questionnaires completed.

### Improvement of the Quality and Relevance of Higher Education



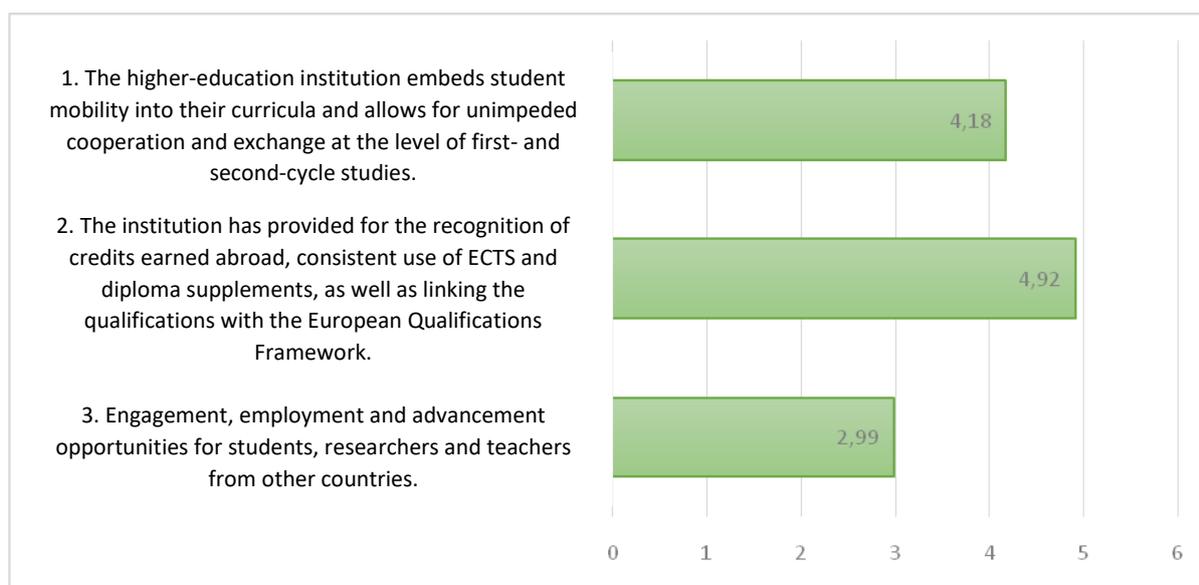
The analysis firstly includes dimensions relevant for establishing the level of quality. It is worth noting that the exercise made use of a 1-7 Likert scale, with 1 being the lowest, and 7 the highest value.

The results obtained indicated average values, starting with the lowest average value of 2.77, linked to the perception of the relatively low level of strategic support for teachers in the higher education, as well for doctoral candidates, such that would contribute to the development of the pedagogic skills required to ensure the development and innovation of the study programs. The highest average value of 4.05 refers to the process of creation of study programs at the faculty/institute, which involves the use of projections of the qualifications demanded on the labor market and data regarding the employment and career of graduates. At the same time, the facilities aiding the acquisition of practical skills by students were also ranked relatively high.

The process of ranking the above dimensions in terms of priority focused on the development of study programs at the faculty/institute based on projections of

the skills demanded on the labor market and data regarding the employment and career of graduates; this is believed to be of highest priority by 34.55% of the respondents, with another 33.69% of the total number of respondents prioritizing the need of higher education institutions to invest in continuous professional development of their personnel, in recruitment of sufficient staff to develop new disciplines, as well as in rewarding accomplishments in the field of teaching.

## Mobility and Cross-Border cooperation

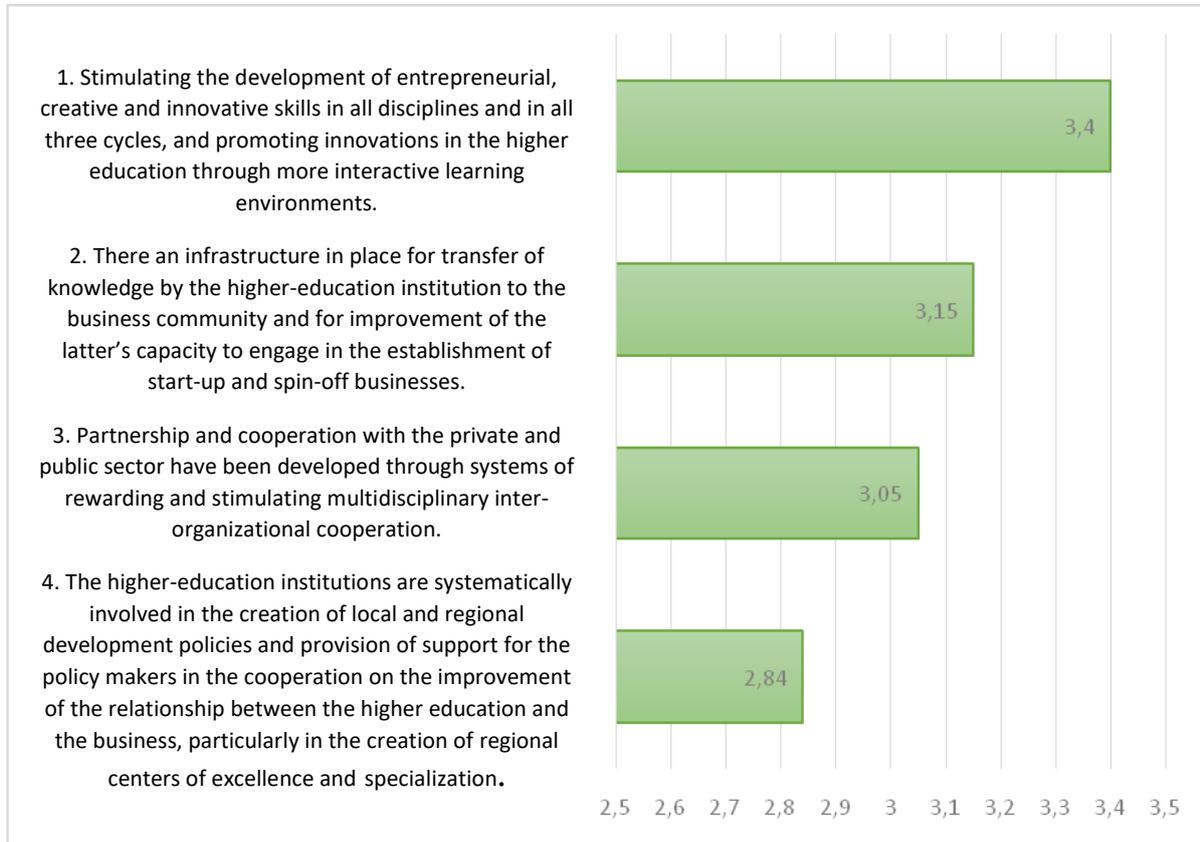


The second segment of the analysis focuses on mobility and international cooperation as an approach to the enhancement of the quality in educational processes and activities of the educational institutions themselves. A 1-7 Likert scale was also made use here, with the average values within the 3 – 5 range. One needs, however, to point to the relatively below average level of 2.99 pertaining to the engagement, employment, and advancement opportunities for students, researchers, and teachers from other countries. On the other hand, a relatively high average value of 4.92 was assigned to the perception of possibilities of having credits earned abroad recognized, constant use of ECTS and diploma supplements, as well as linking the qualifications to the European Qualifications Framework. In addition, student mobility and the level of its incorporation stand at a relatively high level – the average value assigned was 4.18, which is actually above the average.

Further on, the section on ranking the above mentioned dimensions in terms of priority shows that the need of the higher-education institution embedding student mobility in its curricula and allowing for unobstructed cooperation and exchange at the level of first- and second-cycle studies was assigned the highest ranking, with 43.78% of the respondents stating these as of utmost priority. The provision of adequate engagement, employment and advancement opportunities for students, researchers and teachers from other countries was ranked second - 32.19% of the respondents thought this was of highest priority. 24% of the respondents assigned the highest priority to the recognition of credits earned abroad, consistent

use of ECTS and diploma supplements, as well as linking the qualifications with the European Qualifications Framework.

### Creating a Knowledge Triangle



The section on creation of a knowledge triangle, where the various elements are linked together to promote the quality of education, an average value of 3.4 was assigned to the activities related to the stimulation of entrepreneurial, creative and innovative skills in all disciplines and in all three cycles, as well as to the promotion of innovations in the higher education by more interactive learning environments. The relatively low level of values assigned by the respondents in this final section may be highlighted, which is also reflected in the average values. Thus, the low level of values is obvious on the 1 – 7 Likert scale, and the average values assigned are within the 2.8 – 3.4 range. In this sense, the lowest value was assigned to the systematic involvement of the higher-education institutions in the creation of local and regional development policies and support for the policy creators in the cooperation on the improvement of the relationship between the higher education and the business, particularly in the creation of regional centers of excellence and specialization.

When it comes to the priorities that will allow for quality improvement, the need of activities related to the stimulation of entrepreneurial, creative and innovative skills in all disciplines and in all three cycles, as well as to the promotion of innovations in the higher education by more interactive learning environments was given the highest rank – 39.4% of the respondents thought this is of highest

priority. The need of systematic involvement of the higher-education institutions in the creation of local and regional development policies and support for the policy creators in the cooperation on the improvement of the relationship between the higher education and the business, particularly in the creation of regional centers of excellence and specialization, was ranked as the second-highest.

## **2.2. Results Achieved in Key Areas of Education and Science**

The results achieved over the past five-year period are measured due to the realization of the need of a broader picture of the current level of quality of some of the aspects of operation of the University. To that goal, quantitative data on several criteria systemized in individual areas, as depicted below, are required. The results attained are measured in line with the criteria applied by the leading global university ranking organizations/agencies, as well as in line with the relevant higher education accreditation organizations/agencies. The results achieved refer to both the University level and to the level of the individual faculties and institutes.

The results attained were divided in the following four areas:

- teaching and education activities;
- scientific and research activities;
- international cooperation;
- financial aspects of the University operations.

The key findings obtained through the analysis of the data collected from the University units are summarized below. These conclusions are to be taken as indicative, but not complete, as not all units submitted their data in due time. Due to the amplitude of the material, this document presents only the conclusions and some of the most significant tables, with the entire material collected is presented in the appendix section of this Strategy, along with a detailed analysis.

### **2.2.1. Teaching**

The aim of this section is to obtain an idea about some of the features of the teaching activity. The features, corresponding indicators, some of the key tables and the conclusions of the analysis are given below:

Feature: rate of following new trends and adjustment of the study and course programs.

Indicators:

1. number of newly introduced study programs over the last five years (not including modified programs);
2. number of newly introduced courses over the last five years (not including modified courses or changed course titles);

3. number of courses taught in English (mobility windows);
4. number of courses that have introduced new technologies in the teaching (various forms of distant learning, digital learning platforms, knowledge dissemination and information exchange).

**Conclusion:** It seems that the most intensive activities related to the introduction of new study programs took place in the academic 2013/2014. Afterwards, the number of new programs declined: in the academic 2017/2018, 6 new study programs were introduced in the first cycle, 3 in the second one, and 5 in the third cycle of studies; this may be regarded as satisfactory activity on part of the University in terms of expanding the offer of new studying and professional development opportunities.

The level of innovation of the study programs – measured in terms of the number of newly introduced courses - is rather more favorable; this does not include programs that have been merely modified or only had their names changed. This activity is carried out in continuance and its dynamics may be seen in the table below:

	Number of newly introduced courses (not including modified courses or changed course titles)		
	First cycle	Second cycle	Third cycle
2013/2014	140	327	90
2014/2015	91	48	119
2015/2016	26	63	38
2016/2017	38	34	42
2017/2018	111	132	88

There is a satisfactory number of courses taught in the English language, which is a prerequisite for creating conditions for attracting foreign students into the regular study programs or as part of the student exchange ones. The number of such disciplines is constantly increasing and currently stands at more than 200 courses in all three study cycles.

Feature: students' satisfaction with the teaching.

Indicator: average grades given in the self-evaluation surveys of the teaching staff.

**Conclusion:** As for the average grades given in the self-evaluation surveys of the teaching staff the grade assigned to the first-cycle studies in the academic 2013/2014 was 8.84, to go up to 9.24 in the last year analyzed. This grade also went up with regard to the second-cycle studies– it stands at 9.67.

Feature: coverage of the curricula by appropriate teaching staff and additional personnel.

Indicators:

1. number of (undergraduate) students per faculty;
2. number of (postgraduate) students per faculty;
3. number of doctoral candidates per faculty;

4. number of PhD holders and number of graduates in all cycles.

**Conclusion:** For the purpose of analyzing these features, data were gathered on the number of students enrolled, active students, and regular teaching and other University staff. The key information is that there are about 19-20 students per one member of the teaching staff. This number, however, significantly differs in different units of the University and this is why such analyses are to be also conducted at individual unit levels.

Feature: employability and career development of graduates.

Indicators:

1. number of alumna who have received international and national recognitions in their respective fields (natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social sciences, and humanities and arts) according to the relative size of the University;
2. number of alumna at managerial positions in domestic and international companies, institutions and other organizations in the private, public and civil sector;
3. assessment of the qualifications of graduates by the private/public sector (based on the survey of employers).

**Conclusion:** In this section, it is evident that the majority of the University's units have no information about their graduates; as a result, the data provided fail to reflect the factual state of play. At the same time, this indicates a necessity of establishing a practice of regular monitoring of such state of play.

### **Quality and Development of the Faculty Staff**

The quality of the teaching staff is of key importance in the efforts to raise the quality level of the educational and scientific work of the University. This section refers to the analyses of the activities by both the teaching staff itself and the units, aimed at quality improvement. The following characteristics and the corresponding indicators were analyzed:

Feature: links with teaching and scientific workers in the country and abroad and development of one's own skills.

Indicators:

1. number of academic staff who have attended seminars, symposia, workshops and other scientific and expert events aimed at acquisition of new knowledge and teaching methods (this category does not include participation at international scientific conferences);
2. number of academic staff who have received international and national recognitions in their respective fields (natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social sciences, and humanities and arts);

3. percentage of the budget spent on professional development of the teaching staff;
4. index of satisfaction of the teaching staff (employee survey).

**Conclusion:** The faculty and associates regularly take part in seminars, symposia and teaching workshops in the country and abroad. In the absence of a specific parameter of the adequacy of these activities, it may be concluded that the number of such participations is on the rise year in and year out; in each of these categories, the number related to the last year analyzed was 30% to 50% higher than at the beginning of the period under analysis.

The number of recognitions received is understandably not high; yet, it is evident that awards and recognitions have been received at both national and international level.

As for the amounts of funds set aside in the budget of the units for professional development of the teaching staff, the overall size of these amounts is on the rise; percentage wise, however, the portion set aside by the units in their own funds increases, whereas the share of such funds in the overall budget of the institutions is on the downfall. This leads to the conclusion that the state support for these activities is lacking.

### **2.2.2. Scientific Research**

The scientific research activity constitutes an integral part of the activities of academic institutions and is of key importance in terms of their international reputation and raising the level of quality of teaching. The University monitors the quality of teaching via one feature and several indicators.

Feature: results achieved in the scientific and research activity.

Indicators:

1. total number of scientific papers;
2. total number of national scientific papers;
3. total number of international scientific papers;
4. number of scientific papers included on the list of Thompson Scientific's Science Citation Index and on the Scopus list;
5. number of published monographs or chapters of books printed abroad.

**Conclusion:** The data collected indicate that the most frequently used window of promotion of the results of scientific research includes international, scientific conferences, but the University faculty also regularly contribute to the so-called impact factor journals. Still, it is evident that the number of published papers varies each year and its increase is not satisfactory, which creates grounds for concern.

	Number of papers						
	In annual almanacs of academic institutions	In collections of papers presented at international conferences	In national scientific journals	In international scientific journals	On the list of Thompson Scientific's Science Citation Index	On the list of Scopus	Published monographs or chapters of books printed abroad
2013/2014	38	302	124	192	68	52	12
2014/2015	41	270	72	185	103	36	9
2015/2016	56	286	115	200	88	59	14
2016/2017	52	305	88	216	108	42	17
2017/2018	60	357	107	186	92	38	19

### 2.2.3. International Cooperation

Nowadays, the international cooperation between higher-education institutions is a key factor of their progress and strengthening their international reputation. This cooperation was analyzed in terms of the following features and indicators:

Feature: level of international connectivity of the University - academic staff and students.

Indicators:

1. number of foreign students;
2. number of domestic students abroad;
3. international to domestic students ratio;
4. number of foreign researchers and professors;
5. number of domestic researchers and professors abroad;
6. international to domestic academic staff ratio;
7. percentage of international co-authored scientific papers;
8. number of participations at student congresses;
9. number of student papers published.

**Conclusion:** It may be concluded that the University's international cooperation - particularly in the teaching segment – is not satisfactory. The number of foreign professors taking part in the teaching on an annual level is a one-digit one, and the number of our professors who have taught abroad is twice as high; yet, even this number rarely exceeds 20 professors annually. Students are mainly involved in internships abroad via the international organizations (AIESEC, IAESTE, etc.), with this practice being minimal at the University.

Feature: degree of international connectivity of the University via participation in international projects.

Indicators:

1. number of participations in international scientific projects;

2. revenues from implemented international scientific projects.

**Conclusion:** The fact that the number of participations of the University in international projects is on the rise is encouraging. These mostly include projects under the FP7 and Horizon 2020 projects, as well as bilateral ones; however, there is still much room for intensification of this activity.

### **2.2.3. Financial Aspects of the University Operations**

This section analyzes the financial standing of the University, as it is of key significance for the implementation of all ongoing and strategic activities.

#### **Cooperation with the Private and Public Sector: Transfer of Knowledge and Innovations**

Feature: cooperation of the teaching and scientific activities of the University with the business and a two-way exchange with the private and public sector.

##### Indicators:

1. total number of projects implemented in cooperation with the private and public sector;
2. revenues from research and cooperation with the private / public sector;
3. number of companies/institutions that the University has entered into internship agreements;
4. number of companies/institutions that the University has entered into scholarship agreements;
5. number of employees of companies/institutions who have attended training and development programs implemented by the faculties/institutes.

**Conclusion:** The number of projects implemented in cooperation with the private and public sector is not only stagnating, but is even decreasing. The same also goes for the overall revenues generated by the University from this type of activities, which is unfavorable, as the burden of its financing is shifted to the revenues from the state budget and student participation in the tuition fees.

The number of student internship agreements signed is maintained at a constant level; it is a result of the legal provision for student internship.

#### **Support of Scientific Activities Provided by the State**

Feature: level of state support for the University's scientific activities.

##### Indicators:

1. number of state-funded scientific projects;
2. total amount granted by the state for implementation of scientific projects.

**Conclusion:** The financial support for scientific projects is experiencing a continuous decrease, which is reflected in the number of projects; as an overall amount, this support reached its maximum in the academic year 2014/2015 and has since gone down to even less than half of that level.

## **Support of Scientific Activities Provided by the University and its Units**

**Feature:** level of support for scientific activities on part of the University and its units.

**Indicators:**

1. number of scientific/research activities financed by the University;
2. total amount earmarked for scientific/research activities provided by the University;
3. number of scientific projects financed by the University units;
4. overall amount of financial support for scientific projects provide by the University units.

**Conclusion:** The number of projects financed by the University is maintained at a stable level; yet, this number and the overall budget are limited by the funds at disposal of the University for this activity.

## **Total Sources of Finances**

**Conclusion:** The government contribution is the dominant source of finances of the University; this contribution has been kept at an almost constant level over the years. As an item, it is followed by funds under international projects and student scholarships.

## **3. SWOT ANALYSIS**

The SWOT analysis is a review of the current state of play related to the University's strengths, weaknesses, opportunities and threats. It is used at the University as the basis for defining its priorities and strategic and operational activities. As mentioned earlier, the analysis was conducted by summarizing the responses received from the heads of the University units: the most frequent responses were summarized and appropriately formulated to reflect as many views of the respondents as possible.

### **STRENGTHS:**

1. the oldest and most eminent university in the country, also recognizable at an international level;
2. established functional system, organization and internal relations between the units, developed and upgraded over several decades;
3. competent, high-quality and experienced teaching staff, able to combine the results of the scientific research activities with the teaching;
4. high level of coverage of educational and scientific areas by the University units;
5. the only university in the country providing high-quality study programs in all three cycles of higher education;

6. highly developed scientific research activity, with a large number of papers published in national and international publications;
7. implementation of the art-related activities at the faculties of fine art;
8. development and support of the University sports;
9. spatial and infrastructural conditions for delivery of classes;
10. experience in the implementation of national and international scientific projects;
11. long-standing experience in the cooperation with the economy and the public sector.

#### WEAKNESSES:

1. low degree of coordination, cooperation and integration of the University units;
2. lack of strategically set goals and priorities;
3. insufficient funds for scientific/research and artistic activities and insufficiently defined mechanisms of funding scientific/research and artistic activities and University sports;
4. lack of modern infrastructural and technical prerequisites for scientific research activities;
5. no access to international data bases and scientific research publications;
6. location issues in terms of the dispersion of the unit on various locations in the city;
7. insufficient offer of alternative forms of teaching that could be provided for the business sector;
8. insufficient offer of study and course programs in the English language, which makes the international integration of the University difficult;
9. lack of distant learning modalities;
10. lack of sufficient teaching and administrative staff and work overload of the staff at some of the faculties as a result of the budget limitations and government policies over the last decades;
11. insufficient engagement of the staff in the research and applied activities and in the field of cooperation with the economy and international projects;
12. insufficient application of quality control measures and measures aimed at improvement of the quality management system;
13. lack of expert literature in the Macedonian language at some of the faculties;
14. absence of an organization of the University graduates (alumni).

#### OPPORTUNITIES:

1. established contacts, signed agreements and cooperation with foreign universities, which may be utilized to implement joint projects and faculty and student mobility;
2. compatibility with the study programs of eminent universities;
3. wide and numerous base of former students (alumni), who are at key positions in the country and abroad;

4. opportunity to develop forms of further qualifications and re-qualifications in line with the needs of the business sector, development of incubators and accelerators, and implementation of joint projects;
5. high level of interest in the University graduates by the private sector as compared to graduates from the other universities;
6. utilization of the University's reputation in its inclusion in the creation of policies, strategic documents and analyses;
7. the knowledge of foreign languages and new technologies create opportunities for development of forms of distant learning;
8. utilization of foreign funds and programs to finance the scientific/research activity and participation in international projects;
9. utilization of the University social impact in the revision of the higher education financing model.

#### THREATS:

1. insufficient and declining support for the scientific/research and artistic activities by the state;
2. insufficiently defined system of funding the teaching, scientific and artistic activity in the higher education and discouragingly low salaries;
3. continuous interference in the autonomy of the University;
4. insufficient financial autonomy, which impedes the planning of the staff, infrastructural and organizational development;
5. establishment of new state-funded universities based on unclear criteria and taking away a portion of the funds earmarked for financing Ss. Cyril and Methodius University;
6. interference of the central government and its policies in the operation of the University; frequent changes in the law and legal insecurity;
7. lack or inconsistent implementation of a national higher education strategy;
8. a decrease in the number of students due to demographic and other reasons;
9. limited opportunities for employment at the University, i.e. renewal of the teaching and administrative staff;
10. distortions on the labor market, sending wrong signals for the development of study programs, the quality of the studies, employment opportunities, etc.;
11. insufficient willingness for cooperation on part of the relevant ministries and other state authorities;
12. insufficient interest of the business sector and the country in utilization of the scientific, artistic and expert potential of the University.

#### **4. STRATEGIC OBJECTIVES AND PRIORITIES**

Ss. Cyril and Methodius University plays a key role in the development and organization of numerous teaching, scientific and artistic disciplines in the Republic of Macedonia. In the upcoming period, the University will have the obligation to continue with the implementation of its mission, to maintain its position of a leading

university in the country, as well as to continually work on the affirmation of the Macedonian higher-education, scientific and artistic activities at an international level. Based on the SWOT analysis conducted and the survey of the heads of the University units, as well as on the survey carried out among the professors, the following stand out as the key strategic goals and appropriate strategic and operational activities in the coming period:

1. modernization of the existing study programs and creation of new ones in line with the needs of the labor market and the business community, as well as application of modern teaching methods and inclusion of the latest findings;
2. raising the quality of the scientific research and artistic activity;
3. promotion of the international reputation of the University and of its rank on the list of eminent universities;
4. increase of the international cooperation and higher teaching staff and student mobility;
5. higher levels of internal integration and cohesion of the University;
6. provision of sustainable sources of finance, strategic planning and development;
7. personnel rejuvenation and filling in vacancies at the University, strengthening the staff potential by professional development, as well as improvement of the standard of the teaching and scientific staff and students;
8. development of the ICT infrastructure and the electronic services for the employees and students;
9. enhancing the University role in all economic, social, sports, cultural, reform and other processes in the country and international affirmation of such a role.

## **5. STRATEGIC AND OPERATIONAL ACTIVITIES**

For the purpose of achieving the strategic goals and priorities set, the text below provides a description of the activities required to operationalize such goals. Some of them are of a strategic nature and specific activities are to be additionally derived therefrom, and some are of an operational nature and are to be specified into the action plans to emerge from this Strategic plan. All activities have been divided into five key areas, in line with the identified key areas of action within which the future University activities are to be shaped to overcome the weaknesses identified and to raise the level of quality in all domains.

### **In the Field of Teaching:**

1. closer cooperation with the business community through implementation of joint projects and inclusion of representatives of the business community in the processes of modernization of the study programs;
2. improvement of the teaching conditions by investments in the modernization of the premises and equipment, as well as application of new digital technologies in the delivery of instructions (online studies, digital platforms for exchange of information and dissemination of knowledge, etc.);
3. strengthening the potential of the members of the teaching staff by supporting their professional development and acquisition of new abilities and skills in the application of modern teaching methods and activities.

### **In the Field of Science and Expert/Applied Activities:**

1. enhanced cooperation between the University units in the field of teaching and science;
2. provision of more funds for scientific/research work from the University own funds and from the state;
3. establishment of an international projects co-financing fund;
4. access to data bases and scientific publications;
5. stimulation of the scientific/research, expert/applied and artistic activities of the University;
6. promotion of the cooperation with the economy by enhancing the innovations, technological development and applied research in various fields;
7. establishment of innovative start-up and spin-off companies to implement scientific/research and expert/applied projects;
8. setting up labs, accelerators, hubs and other centers for implementation of scientific and applied activities;
9. facilitation of administrative procedures in the implementation of projects;
10. setting up an office for support of the commercialization of research results;
11. introduction of postdoctoral studies;
12. introduction of life-long learning programs.

### **In the Field of International Affirmation and Cooperation:**

1. promotion of the international cooperation (bilateral agreements, memoranda of cooperation, joint projects);
2. development of joint study programs with foreign universities, including a double diploma;
3. enhancing the recognizability of the existing study programs;
4. provision of expert and administrative support for higher teaching staff and student mobility;
5. attracting foreign students and visiting professors from foreign universities;
6. increasing the participation of the staff in international organizations.

### **Integration and Affirmation of the University:**

1. improvement of the University ICT system;
2. enhancement of the functionality of the University integrative services;
3. creation of a common collection (base) of papers of all University employees;
4. development of a strategy for financial and other forms of support for the sports and artistic activities of the students and faculty, with the aim of affirming the sports, cultural and artistic achievements of the University.

### **Staff, Financial and Material Aspects:**

1. employment of young staff, in line with the needs of the University units;
2. filling in all teaching and administration vacancies in the University units;
3. increasing the tuition participation by students, in accordance with the cost of studies;
4. furthering the financial autonomy of the University, particularly in terms of disposal of the funds for scientific/research activities;
5. improvement of the conditions in the student dorms;
6. unification of the studying costs of all University units.

## **6. APPENDIX 1: DETAILS AND ANALYSIS OF THE RESULTS ACCOMPLISHED IN KEY AREAS OF EDUCATION AND SCIENCE**

**Note:** the tables contained in this section include only data provided by the University units within the deadline stipulated.

### **6.1 Educational Activity**

Indicator: number of newly introduced study programs over the last five years (not including modified programs).

The efforts to **innovate the study programs** in the academic year 2013/2014 led to the introduction of 25 new study programs in the first, 53 new study programs in the second, and 7 programs in the third-cycle cycle.

No new study programs were introduced in the following periods until the academic year 2017/2018, when 6 new programs took off.

In the academic year 2014/2015, two new study programs were introduced in the second-cycle studies, with 3 new study programs emerging every year until the last academic year 2017/2018.

The number of new study programs in the third-cycle studies went up by: 11 in the academic year 2014/2015, 9 in the academic year 2015/2016, none in the academic year 2016/2017, and 5 in the academic year 2017/2018.

	Number of newly introduced study programs (not including modified programs)		
	First cycle	Second cycle	Third cycle
2013/2014	25	53	7
2014/2015	0	2	11
2015/2016	0	3	9
2016/2017	0	3	0
2017/2018	6	3	5

Indicator: number of newly introduced courses over the last five years (not including the modified courses or courses under changed titles).

With regard to the **degree of innovation of the study programs**, which is measured by the number of newly introduced courses, not including those that have been simply modified or that have only had their title changes, it is evident that the most intensive activities took place in the course of the academic year 2013/2014 in all three study cycles. Thus, the number of new courses introduced amounted to: 140 in the first; 327 in the second, and 90 in the third-cycle studies. There were variations in the periods to follow; thus, the number of newly introduced courses in the academic year 2014/2015 was 91 in the first, 48 in the second, and 119 in the third-cycle studies.

The number of newly introduced courses varied in the subsequent period on a year in and year out basis with no specific trends observable; thus, in the academic year 2017/2018, the number of new courses amounted to 111 in the first, 132 in the second, and 88 in the third-cycle studies.

	Number of newly introduced courses (not including modified courses or changed course titles)		
	First cycle	Second cycle	Third cycle
2013/2014	140	327	90
2014/2015	91	48	119
2015/2016	26	63	38
2016/2017	38	34	42
2017/2018	111	132	88

Indicator: number of courses taught in English (mobility windows).

In the academic year 2013/2014, the courses **offered in the English language** (mobility windows) included as much as 250 courses taught in English in the first, 149 in the second and 164 courses in the third-cycle studies.

In the two subsequent periods, i.e. in the academic year 2014/2015, and then also in the academic year 2015/2016, 165 courses taught in English were offered in the **first-cycle studies**. In the next academic year 2016/2017, the number of courses taught in English was 188, with as much as 280 courses delivered in English in the academic year 2017/2018.

In both periods - in the academic year 2014/2015 as well as in the academic year 2015/2016, there were 56 courses delivered in English in the **second-cycle studies** in each of the academic years. Further on, the number went up to 137 in the academic year 2016/2017, to eventually arrive at as much as 233 courses taught in English in the academic year 2017/2018.

In the **third-cycle studies**, the number of courses taught in English start at 197 in the academic year 2014/2015, to remain at similar levels – 171 and 164 in the school years 2015/2016 and 2016/2017, respectively. As in the case of the other levels of education, there was also a significant increase in the number of courses (up to 225) delivered in English in the third-cycle studies.

	Number of courses delivered in English		
	First cycle	Second cycle	Third cycle
2013/2014	250	149	164
2014/2015	165	57	197
2015/2016	165	57	171
2016/2017	188	138	164
2017/2018	280	234	225

**Indicator:** number of courses that have introduced new technology in the instructions (various forms of online learning, digital learning platforms, dissemination of knowledge and exchange of information).

With regard to **the number of courses that have introduced new technology in the instructions**, the records show that their number was the lowest in the academic year 2013/2014, when 179 courses in the first, 43 in the second and only 4 in third-cycle studies were involved in such activities. Naturally, the number of courses introducing new technologies grew over the subsequent period.

In **the first-cycle studies**, 183 courses introduced new technology in the teaching methods in the academic year 2014/2015; this number went up to as much as 220 in

the academic year 2016/2017, with the number remaining very similar (219 courses) in the academic year 2017/2018 as well.

In the **second-cycle studies**, 27 courses applied new technology in the academic year 2014/2015. From then on, the numbers were very similar in the following periods: 49 in the academic year 2015/2016, 38 in the academic year 2016/2017, and 42 in the academic year 2017/2018.

In the **third-cycle studies**, the numbers began converging: in the academic year 2014/2015, there were 11 such courses; in the next school year 2015/2016, the number of courses was 9; in the academic year 2016/2017, this number was 10, to eventually go up to 16 courses that introduced new technology in the instructions in the academic year 2017/2018.

	Number of courses that have introduced new technology in the teaching process		
	First cycle	Second cycle	Third cycle
2013/2014	179	43	23
2014/2015	183	27	34
2015/2016	204	49	33
2016/2017	220	38	36
2017/2018	219	42	45

**Indicator:** average grades in the teaching staff self-evaluation surveys.

As for the average grades in the teaching staff self-evaluation surveys, they were lowest in the **first-cycle studies** in the academic year 2013/2014, when the grade averaged at 8.84.

In the subsequent period, the average grade was: 9.25 in the academic year 2014/2015; 9.21 in the academic year 2015/2016; 9.27 in the academic year 2016/2017; and 9.24 in the academic year 2017/2018.

In the **second-cycle studies**, the average grade was at a relatively stable level, with the lowest average grade (9.44) assigned in the academic year 2013/2014; in the periods to follow, it averaged at about 9.6, to achieve the highest level (9.67) in the academic year 2017/2018.

In the case of the **third-cycle studies**, the lowest grade was 9.4 in the academic year 2017/2018, with somewhat higher average grades observed in the school years 2014/2015 and 2015/2016 – 9.5 и 9.7, respectively.

	Average grades		
	First cycle	Second cycle	Third cycle
2013/2014	8.84	9.44	
2014/2015	9.25	9.60	9.60

2015/2016	9.21	9.66	9.70
2016/2017	9.27	9.63	9.35
2017/2018	9.24	9.67	9.40

Indicators:

1. number of (undergraduate) students per faculty;
2. number of students (postgraduates) per faculty;
3. number of doctoral candidates per faculty;
4. number of PhD holders and number of graduates from all study cycles.

With regard to the number of **newly enrolled students**, there is an obvious downward trend in each of the three study cycles. Thus, from 4.29 newly enrolled students in the academic year 2013/2014, the number dropped to 4.007 in the first-cycle studies in the academic year 2017/2018. The state of play was proportionally similar in the second-cycle studies - 856 newly enrolled students in the academic year 2013/2014, with the number almost halved to 456 enrolled students in the academic year 2017/2018. In the third-cycle studies, the variations are considerably smaller: 66 candidates in the academic year 2013/2014 and 76 and 74 candidates enrolled in 2014/2015 and 2015/2016, respectively. Then there was a drop down to 49 newly enrolled candidates in the academic year 2016/2017 and 61 in the third-cycle studies in the academic year 2017/2018.

	Number of newly enrolled students			Number of graduates		
	First cycle	Second cycle	Third cycle	First cycle	Second cycle	Third cycle
2013/2014	4,429	856	66	3,313	721	55
2014/2015	4,225	720	76	3,127	657	57
2015/2016	4,176	568	74	2,739	571	67
2016/2017	4,161	525	49	2,619	510	50
2017/2018	4,007	456	61	2,509	425	206

The situation is largely similar when it comes to students completing the various levels of education, at least in the *first-* and *second-cycle studies*. There is an outstanding number of 206 candidates who have completed the third, highest level of studies in the academic year 2017/2018.

The total number of students in the **first-cycle studies** (17,836) in the academic year 2013/2014 rose to 18,145 students in the next school year 2014/2015. This upward trend was maintained over the subsequent two academic years: the number went up to 19,127 in the academic year 2015/2016 and even higher to 19,323 in the academic year 2016/2017. In the most recent school year 2017/2018, there was a slight drop and the total number of students in the first-cycle studies amounted to 18,979.

In the **second-cycle studies**, the total number of students in the academic year 2013/2014 was 1,203 and reached the highest level (1,257 students) in the next school year 2014/2015, to go down to 1,128 students in the year to follow. From then on, the downward trend continued: the total number of students in the academic year 2016/2017 went down to 1,122 and even further down to only 1,013 students in the second cycle in the academic year 2017/2018.

The situation is different in the case of the **third-cycle studies**. Here, the total number was 159 in the academic year 2013/2014, but went up to 209 in the next academic year 2014/2015. In 2015/2016, this number was 226, to slightly go down to 211 in the following year, finally totaling 242 students in the third-cycle studies in the last academic year 2017/2018.

	Total number of first-cycle students	Total number of second-cycle students	Total number of third-cycle students
2013/2014	17,836	1,203	159
2014/2015	18,145	1,257	209
2015/2016	19,127	1,128	226
2016/2017	19,323	1,122	211
2017/2018	18,979	1,013	242

As regards the staff engaged at the University level, the number of 964 full-time associates in the academic year 2013/2014 went down to 941 in the next academic year 2014/2015. In the academic year 2015/2016 this number dropped to the lowest level (901), to go back up to 1,097 in the academic year 2016/2017 and even further up to 1,045 in the academic year 2017/2018.

The numbers related to the administrative personnel are relatively constant and mainly about 400 employees; more precisely, there were 441 administrative staff in both the academic year 2013/2014 and in the academic year 2014/2015. There was a slight increase of up to 513 in the academic year 2015/2016, with the highest number of personnel engaged in the administration (537) in the academic year 2016/2017.

	Number of full-time faculty staff and associates	Number of individuals from other institutions (from the business, the public sector, etc.) engaged in teaching	Number of administrative staff	Newly employed faculty staff	Newly employed administrative staff
2013/2014	1,043	183	455	1	0
2014/2015	1,019	190	454	5	19
2015/2016	978	192	483	14	69
2016/2017	1,173	209	522	11	68
2017/2018	1,114	268	545	15	6

As for the newly employed teaching staff, **this number is less than 20 at the University level.** The number of newly employed was the lowest in the academic year 2013/2014 – only 1 employee, with an obvious upward trend in the next school year 2014/2015, when the total number of new employees was 5. In the academic year 2015/2016, this number increased to 13, to remain at 10 over the next two academic years, and going up to 11 in the academic year 2016/2017 and even further up to 14 in the academic year 2017/2018.

The numbers and trends of newly employed staff in **the administration** differ. Thus, no new staff was employed in the academic year 2013/2014, but this number increased to 19 in the next academic year 2014/2015. The number of newly employed in the administration was considerably increased in the academic years 2015/2016 and 2016/2017 – 69 and 68 new employees, respectively. In the last academic year 2017/2018, only 6 new employees were recruited.

#### Indicators:

1. number of alumna who have received international and national awards in corresponding fields (natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social

- sciences, and humanities and arts) according to the relative size of the University;
2. number of alumna at managerial positions in domestic and international companies, institutions and other organizations in the private, public and civil sector;
  3. assessment of the qualifications of graduates by the private/public sector (based on the survey of employers).

The University units have recorded relatively low numbers of **alumna** who have received international and national awards in corresponding fields (natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social sciences, and humanities and arts); these numbers do not exceed 15. Thus, the number starts at 9 in the academic year 2013/2014, goes up to 11 in the academic years 2014/2015 and 2015/2016, and remains at very similar levels in the academic years 2016/2017 and 2017/2018 – 10 and 12, respectively.

The numbers of former students who are active at managerial positions are higher and exceed 100, as follows: 103 in the academic year 2013/2014 and 114 in the academic years 2014/2015 and 2015/2016. Over the next two school years, the number exceeded 130 to arrive at 135 in the academic year 2016/2017 and 137 in the academic year 2017/2018.

It is worth noting that the majority of units of the University had no data regarding these numbers and it needs to be highlighted that the above data do not reflect the factual state of play; therefore, new and more appropriate practices of monitoring such data are to be established.

	Number of alumna who received international and national awards	Number of alumna at managerial positions
2013/2014	9	103
2014/2015	11	114
2015/2016	11	114
2016/2017	10	135
2017/2018	12	137

As regards the assessment of the qualifications of graduates by the private/public sector (based on the employers' survey: the respondents were asked what universities the most qualified graduates come from), it may be established **that the survey was not completed and there are no adequate information regarding this issue. The public debates negatively assessing the educational processes in terms of their meeting the needs of employers are to be accordingly evaluated, in order to obtain relevant data for analyses.**

Indicator: number of teaching staff who have attended seminars, symposia, workshops and other scientific and expert events to acquire new knowledge and

instruction methods (this category does not include participation at international scientific conferences).

When it comes to the participation of the teaching staff in seminars, symposia, workshops and other scientific and expert events to acquire new knowledge and instruction methods (this category does not include participation at international scientific conferences), it is only logical and obvious that the highest levels of participation is that in events in the country. In this sense, the number is above 300, starting at 311 in the academic year 2013/2014, followed by a minor drop down to 298 in the next academic year 2014/2015. The following school year 2015/2016, this number goes up to as much as 395, to then go down again to 356 in the academic year 2016/2017, eventually reaching the highest level of 436 in the academic year 2017/2018. As regards seminars and symposia abroad, the number is constantly within the 200 – 300 range: it totaled 220 in the academic year 2013/2014 and arrived at 252 in the next academic year. Then, it went up to 276 in the academic year 2015/2016, to slightly fall down to 260 in the year to follow. The highest number of more than 300 seminars and symposia attended was that in the academic year 2017/2018 – 323.

It is interesting to observe that the numbers related to attendance at workshops is different, as there are no such big differences between the number of workshops attended in the country and abroad. On the contrary – the number of workshops attended abroad went up following the academic year 2016/2017 and even exceeded the number of workshops attended in the country. Starting at 131 workshops in the country and 123 ones abroad in the academic year 2013/2014, the largest difference between the two categories was observed in the next two academic years: 130 workshops were attended in the country in the academic year 2014/2015 and 155 ones in the academic year 2015/2016. On the other hand, accordingly, the total number of workshops attended abroad was 104 in the academic year 2014/2015 and 117 in the academic year 2015/2016.

	Number of participations of University staff			
	Seminars and symposia in the country	Seminars and symposia abroad	Teaching workshops in the country	Teaching workshops abroad
2013/14	311	220	131	123
2014/15	298	252	130	104
2015/16	395	276	155	117
2016/17	356	260	113	213
2017/18	436	323	162	223

Indicator: number of academic staff who received international and national awards in corresponding fields natural and mathematical sciences, technical and technological sciences, medical sciences and health, biotechnical and social sciences, and humanities and arts).

There is an evidently relatively low number of academic staff who received international and national awards in corresponding fields natural and mathematical sciences, technical and technological sciences, medical sciences and

health, biotechnical and social sciences, and humanities and arts). Thus, 9 national awards were received in the academic year 2013/2014; this number was 8 in the academic year 2014/2015 and went up to 13 in the academic year 2015/2016. Then, the number fell down to 11 in the academic year 2016/2017 and to only 2 in the academic year 2017/2018.

On the other hand, the number of international awards received stands at even lower levels. Thus, the number of academic staff who received international awards in the academic year 2013/2014 came down to only 3, to move slightly up to 5 in the subsequent school year; in the academic year 2015/2016 it moved up to 7, the same as in the academic year 2016/2017. In the academic year 2017/2018, only 2 members of staff were awarded international recognitions.

	Number of faculty staff who have received national recognitions	Number of faculty staff who have received international recognitions
2013/14	9	3
2014/15	8	5
2015/16	13	7
2016/17	11	7
2017/18	2	2

Indicator: percentage of the budget spent on development of the teaching staff.

As for the percentage of the budget spent on development of the teaching staff, it was highest (36%) in the academic year 2013/2014; in the period to follow, this percentage varied, with the lowest percentage (11%) having been spent in the academic year 2017/2018. This percentage is additionally increased if calculated as a percentage of the budget taking into consideration the University's own funds and eventually arrives at more than 78%. It is worth noting that - in an absolute amount - the funds spent on professional development of the teaching staff were the lowest in the academic year 2013/2014 and amounted to 6,504,824 MKD. Subsequently, the highest amount of funds spent on professional development of the teaching staff totaled MKD 11,637,249.

	Amount spent on professional development of the faculty staff	Percentage from the budget spent on professional development of the faculty staff	Percentage from the budget (own funds) spent on professional development of the faculty staff
2013/14	6,504,824	36	80
2014/15	8,063,955	37	78
2015/16	10,761,635	35	96
2016/17	8,519,813	33	80
2017/18	11,637,249	11	107

Indicator: teaching staff satisfaction index (employee survey).

The index was measured at above 3 on a 1 – 5 scale, with 1 being the lowest and 5 the highest value.

	Average grades	Other measures aimed at evaluation of the state of play
2013/2014	3.195	0
2014/2015	3.18	0
2015/2016	3.2	0
2016/2017	3.22	0
2017/2018	3.13	0

## 6.2. Scientific/Research Activities

### Indicators:

1. total number of scientific papers;
2. total number of domestic scientific papers;
3. total number of international scientific papers;
4. number of scientific papers on the list of Thompson Scientific's Science Citation Index and the list of Scopus;
5. number of published monographs and chapters of books printed abroad.

The number of published papers is the main indicator among the scientific research parameters, with the most frequently published papers are the ones in the collections of papers presented at international conferences. In this category, the lowest number (270 papers) was that in the academic year 2014/2015, whereas the highest one (357 papers) was observed in the academic year 2017/2018. The number of papers published in both national and international scientific journals is relatively higher. Thus, the highest number of papers (216) were published in international journals in the academic year 2016/2017, and the lowest one (185) was observed in the academic year 2015/2015. In parallel with this, the highest number (214) of papers was published in national scientific journals in the academic year 2013/2014, while the lowest one (72 papers) recorded as soon as in the next academic year.

It is interesting to note that there is a slightly higher number of papers included in the Thompson list than in the Scopus one. Thus, the largest number of papers published in the journals incorporated in the Thompson Reuters list is 108 (academic year 2016/2017). The lowest number of papers indexed in the Thompson Reuters master journal list was 68.

On the other hand, the highest number of papers indexed on the Scopus journal list was published in the academic year 2015/2016, with their total number amounting to 59. The lowest number of papers published in journals indexed on the Scopus list was observed in the academic year 2014/2015.

The number of publications such as monographs or chapters of books printed abroad is, naturally, the lowest. These publications come in relatively low numbers, ranging from 9 in the academic year 2014/2015 and 19 in the academic year 2017/2018.

			Number of papers				
			In annual almanacs of academic institutions	In collections of papers presented at international conferences	In national scientific journals	In international scientific journals	On the list of Thompson Scientific's Science Citation Index
2013/2014	38	302	124	192	68	52	12
2014/2015	41	270	72	185	103	36	9
2015/2016	56	286	115	200	88	59	14
2016/2017	52	305	88	216	108	42	17
2017/2018	60	357	107	186	92	38	19

### 6.3. International Cooperation

#### Indicators:

1. number of foreign students;
2. number of domestic students abroad;
3. ratio of international to domestic students;
4. number of foreign researchers and professors;
5. number of domestic researchers and professors abroad;
6. ratio of international to domestic academic staff;
7. percentage of international co-authored scientific papers;
8. number of participations at student congresses;
9. number of published student papers.

As for the activities of the **students, the number of students who have spent a semester/year abroad** was the lowest in the academic year 2016/2017 (103 students) and the highest in the previous academic year 2015/2016 (249 students).

Regarding the number of foreign students at the University, there is an evident drop in the total number. Thus, the maximum number of 776 students was recorded in the academic year 2013/2014, but this number went down to 336 in the academic year 2017/2018.

The number of **teachers who taught at foreign universities** was the highest (62) in the academic year 2014/2015, to considerably decrease as soon as in the next academic year 2015/2016; the lowest number of teachers who had an opportunity to teach at a foreign university was 28.

The number of **papers published with foreign professors as co-authors** is relatively low. Thus, only 4 such cases were recorded in the academic year 2013/2014, with their number going up to 12 in the next two school years 2014/2015 and 2015/2016 and to 10 and 11 in 2016/2017 and 2017/2018, respectively.

The number of **completed scientific research student internships at the faculty/institute** (for instance, IAESTE, AIESEC, etc.) was also relatively low – only 6 in the academic year 2013/2014, with the maximum number of 18 recorded internships achieved in the academic year 2016/2017.

At the same time, the information on the number of **completed scientific research internships** of domestic students at foreign universities (e.g., through IAESTE, AIESEC, etc.) were also assessed as incomplete, with the lowest number of 8 such internships having taken place in the academic year 2013/2014. Over time, their number increased and arrived at 59 in the academic year 2017/2018.

The highest number of **participations in international academic courses** (e.g., cooperation of the faculty with BEST and so on) was achieved in the academic year 2015/2016 (65 cases), while the lowest such number was in the academic year 2013/2014 (42 cases).

As regards the participation of students at **national and international congresses**, the attendance of national congresses is evidently higher, as expected. The highest level of participation at national congresses (170 cases) was recorded in the most recent academic year 2017/2018, with the level of attendance of international congresses being the highest in the academic year 2015/2016 (28). On the other hand, the lowest level of participation at national congresses (81 cases) was observed in the academic year 2014/2015, while the lowest number of international congresses attended (17) was recorded in the academic year 2013/2014.

As for the publications of students in foreign and domestic journals, the highest number of papers (42) was published in the academic year 2017/2018, and the lowest number of such papers (8) was published in the academic year 2016/2017.

	Number of students who have spent a semester/year abroad	Number of students who have spent a semester/year at the University	Number of foreign students who have studied at the University	Number of teachers who have taught at foreign universities	Number of published papers in co-authorship with foreign professors	Number of foreign professors who have taken part in teaching at the University
2013/2014	165	776	29	29	6	7
2014/2015	213	635	62	62	14	16
2015/2016	249	547	57	57	16	16
2016/2017	103	399	36	28	16	13
2017/2018	150	336	55	46	19	15

	Number of completed scientific/research student internships at the faculty/institute (e.g., IAESTE, AIESEC, etc.)	Number of completed scientific/research of domestic students at foreign universities (for instance, through IAESTE, AIESEC, etc.)	Number of participations in international academic courses (e.g., cooperation of the faculty with BEST, etc.)	Number of participations of students with their own papers at student congresses in the country (with international participation)	Number of participations of students with their own papers at international student congresses	Number of student papers published in scientific journals (domestic and international)
2013/2014	9	16	42	115	17	17
2014/2015	10	15	54	81	20	9
2015/2016	16	23	65	138	28	35
2016/2017	21	51	49	93	28	8
2017/2018	19	67	54	170	28	42

### Indicators:

1. number of participations in international scientific projects;
2. revenues from international scientific projects.

Work on projects demonstrates a positive trend and is experiencing a slow, but balanced development.

Thus, the number of participations in scientific projects under FP7 or H2020 starts at 9 in the academic year 2013/2014, to reach 23 in the academic year 2017/2018.

Over the last 5 years, the number of bilateral projects has been in the range of 9 to 16.

The number of participations in projects as part of the NATO Partnership for Peace Program is also symbolical – from 2 in the academic year 2013/2014 up to the maximum number of 5 in the academic year 2017/2018.

On the other hand, the participation in other international forms of cooperation is more dynamic – the lowest number was 32 in the academic year 2013/2014, but it went up to 49 and 47 in the academic years 2016/2017 and 2017/2018, respectively.

At the same time, the highest revenues from project activities was recorded in the academic year 2015/2016; these revenues were generated under bilateral agreement and amounted to a total of 56,583,448 MKD.

	Participation in scientific projects as part of FP7 or H2020		Participation in bilateral scientific projects		Participation in projects under the NATO Partnership for Peace Program		Participation in other international forms of cooperation	
	No.	Revenues	No.	Revenues	No.	Revenues	No.	Revenues
2013/2014	9	13,952,977	9	30,031,845	2	1,289,063.00	32	16,694,255.00
2014/2015	15	15,389,620	15	49,295,867	3	2,256,190.00	37	25,470,572.00
2015/2016	18	11,999,985	16	56,583,448	4	781,703.00	43	39,321,950.00
2016/2017	20	28,945,058	16	1,926,579	5	7,454,241.00	49	22,798,439.00
2017/2018	23	30,976,825	14	528,853	5	5,250,320.00	47	17,511,863.00

## 6.4 Financial Aspects of the University Operations

### Indicators:

1. total number of projects in cooperation with the private and public sector;
2. revenues from research and cooperation with the private / public sector;
3. revenues from research and cooperation with the private / public sector by academic staff;
4. number of companies/institutions internship agreements have been signed with;
5. number of companies/institutions student scholarship agreements have been signed with;
6. number of employees in companies/institutions that have taken part in the training and development programs implemented by the faculties/institutes.

When it comes to the cooperation with the private and public sector, the number of projects with the private sector is higher. Namely, as much as 72 agreements for cooperation with the private sector were entered into in the academic year 2016/2017, and the lowest number of such agreements (49) was signed in the academic year 2015/2016.

In comparison, the number of projects with the public sector is at a slightly lower level and is of a downward trend; thus, the highest number of such contracts was observed in the academic year 2013/2014 (41). The lowest number of such contracts was 22, recorded in the academic year 2017/2018.

Agreement signed in:	Number of companies /institutions internship agreements have been entered into with	Number of companies /institutions scholarship agreements have been entered into with	Number of projects implemented in cooperation with the private sector	Number of projects implemented in cooperation with the public sector	Total revenues from projects implemented in cooperation with the private sector	Total revenues from projects implemented in cooperation with the public sector
2013/2014	444	26	52	41	8,012,046	104,352,256
2014/2015	487	31	61	33	8,861,516	59,082,524
2015/2016	416	33	49	28	4,984,073	60,782,023
2016/2017	495	34	72	21	7,214,180	42,841,787
2017/2018	507	37	51	22	2,221,791	76,031,044

When relations with the private and public sector are discussed, what needs to also be established is the number of companies/institutions internship agreements have been signed with.

Relationships on a continuous basis have been established with more than 400 entities, with the lowest level of frequency of such agreements (402) achieved in the

academic year 2015/2016, and the highest one (488) recorded in the academic year 2017/2018.

The involvement of the institutions/companies themselves in such support is reflected in the number of companies/institutions scholarship agreements have been signed with. This number was below 30 only in the academic year 2013/2014, when it totaled 25. Then, there was a continuous increase in the subsequent school years, with the highest number (34) of such contracts entered into in the academic year 2017/2018. With regard to the revenues from both the public and the private sector, the highest level of revenues was generated in the academic year 2014/2015: MKD 8,861,516 from the private and MKD 9,473,925 from the public one.

It is interesting to take a look at the number of employees in companies/institutions who took part in training and development programs delivered by the faculties/institutes. Thus, there are fluctuations in this number: it was 143 in the academic year 2013/2014, but then went down to 54 in the course of the next school year 2014/2015. Afterwards, it went up to 184 in the academic year 2015/2016, to go back down to 95 in the school years 2016/2017 and 2017/2018.

#### Indicators:

1. number of scientific projects funded by the state;
2. total amount granted by the state for the implementation of scientific projects.

The number of **scientific projects at the University financed by the state** was 19 in the academic year 2013/2014 and reached its maximum (27) in the next school year 2014/2015. Further on, in the academic year 2015/2016, the number of state-funded scientific projects was 17, to go down to 12 in the course of the subsequent two academic years of 2016/2017 and 2017/2018. At the same time, the highest amount granted by the state in an absolute value amounted to MKD 8,682,833 in the academic year 2014/2015.

Agreement signed in:	Number of state-funded scientific projects of the University	Total amount granted by the state for scientific projects of the University
2013/2014	19	2,830,546
2014/2015	27	8,682,833
2015/2016	15	5,605,600
2016/2017	12	2,417,276
2017/2018	12	3,915,743

Agreement signed in:	Number of scientific projects funded by the University	Total monetary amount of scientific projects funded by the University
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	Number of scientific research activities financed	Number of scientific conferences financed	Number of publications financed (publishing activity)	Scientific research activities financed, amount	Scientific conferences financed, amount	Publications financed (publishing activity), amount
2013/2014	28	8		5,040,000	1,050,000	
2014/2015	29	17		6,960,000	2,250,000	
2015/2016	28	24		6,720,000	3,807,000	
2016/2017	27	9	4	6,480,000	1,002,750	290,000
2017/2018	23	16	10	4,600,000	2,080,000	708,000

Agreement signed in:	(data provided by University units)					
	Number of scientific projects funded by the University units			Total monetary amount of scientific projects funded by the University units		
2013/2014	24	1	11	17,068,960	461,119	844,840
2014/2015	32	1	10	20,317,088	331,903	766,436
2015/2016	38	1	20	15,382,638	359,591	652,246
2016/2017	38	2	13	16,016,693	830,496	546,212
2017/2018	26	2	10	14,311,170	371,985	685,937

	Government contributions (salaries, material costs, etc.)	Tuition			
		State-supported quota	Private quota	Second cycle	Third cycle
2013/2014	1,155,945,310	124,171,761	36,618,335	76,088,887	9,489,536
2014/2015	1,162,804,273	119,506,460	48,518,215	95,850,877	8,994,268
2015/2016	1,199,611,526	117,073,870	47,835,520	27,355,049	8,458,442
2016/2017	1,245,465,818	112,425,390	48,590,199	38,433,215	9,443,476
2017/2018	1,210,386,185	105,691,231	48,645,897	25,621,998	7,984,881

	Scientific/research and	Internation	Donations	Leases	Other sources
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	expert/applied activities (revenues from national projects)		al projects			
	MoES	Others				
2013/2014	1,918,645	26,208,005	141,532,622	2,340,696	13,581,399	2,636,127,158
2014/2015	1,980,830	42,913,248	123,295,411	2,113,232	15,148,893	2,793,458,315
2015/2016	1,189,495	29,631,122	171,096,206	3,939,893	16,489,947	3,020,592,420
2016/2017	780,016	55,179,756	183,526,054	791,046	17,513,845	2,835,077,808
2017/2018	480,419	49,283,666	173,504,646	5,748,270	15,262,897	2,917,993,107

**Ss. Cyril and Methodius University in Skopje**