

Development Strategy of the Polytechnic of Rijeka

2020 – 2024



Polytechnic of Rijeka
Rijeka, 2020

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The Committee for the Review and Preparation of the New Strategy of the Polytechnic of Rijeka participated in the preparation of the Strategy; the Committee was appointed by the Expert Committee of the Polytechnic (Class: 003-08/18-04/01, Ref. No. 2170-57-01-18-21/DĐ) and consisted of the Dean, the Administration Representative, the Representative of the Management Committee, the Representative of the Expert Committee and Teachers, the Representative of External Associates, the Representative of the Quality Assurance System, the Representative of Professional Services, the Representative of the Student Assembly, the Domestic and International Project Coordinator, the Economy Representative and the Representative of Regional Self-government.

Initial SWOT analyses and proposals for strategic orientation of individual departments or independent studies were made by department heads or study programme heads in cooperation with teachers and students of said departments and study programmes.

During the Strategy drafting process, also were consulted: Primorje-Gorski Kotar County, City of Rijeka, Croatian Chamber of Economy – Rijeka Office and Regional Development Agency of Primorje-Gorski Kotar County.

The Development Strategy of the Polytechnic of Rijeka was adopted on the 25/20. regular session of the Management Committee held in 28 February 2020.

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1. SUMMARY

The Polytechnic of Rijeka is a multidisciplinary institution offering study programmes which cover different fields of scientific or academic disciplines: Economics, Computer Science, Electrical Engineering, Occupational Safety, Transport, Telematics, Biotechnology, Agritourism, which are organized in four departments (the Business Department, the Transport Department, the Department of Occupational Safety, the Department of Agriculture), as well as two independent study programmes (the Professional Study of Telematics and Professional Study of Sustainable Agritourism). The Polytechnic is currently active in two counties, or three cities: Rijeka, Pazin and Poreč.

The Polytechnic is a higher education institution, with the organization and implementation of undergraduate professional studies and specialist graduate professional studies as its main activity. The focus during the following period will be on the innovation of existing programmes and coordination with technical and technological advancements and labour market requirements, as well as the development of lifelong learning programmes, with continued efforts towards maintaining an appropriate level of student standard and quality of the teaching process.

The study programmes and the staff involved in their execution seek to educate experts and professionals who will be effective in detecting, understanding and managing complex situations in their fields and thus be recognized in the labour market. For this purpose, we are developing an intensive cooperation with the local community and various economic entities, which enables us to provide our students with high-quality internships, but also receive valuable feedback of key stakeholders – employers – regarding labour market needs, required learning outcomes, their participation as guest lecturers presenting current professional topics and other benefits. In addition to further developing the documentation of performance indicators and informing the community about our aforementioned activities, additional efforts will be invested in corporate social responsibility, i.e. raising awareness of all stakeholders regarding social responsibility.

Regarding the area of research, at the Polytechnic of Rijeka, professional and scientific research is encouraged with the long-term objective of conducting quality applied research related to the requirements of the environment. Nowadays, domestic and international cooperation with higher education institutions, the local community and the economy is an absolute necessity and a priority for development and sustainability, but also an obligation of all higher education institutions, and due attention will be dedicated to its further improvement.

In order to achieve all our planned objectives, it is necessary to ensure the prerequisites with regard to human, material and other resources. Human resources are crucial for the success of any higher education institution and particular emphasis will be placed on employee care, but also on the continued efforts to provide additional space for the performance of our activities.

The environment within which we will operate throughout the next strategic period is very changeable and challenging; from rapid technological changes and related challenges, changes in expectations regarding higher education institutions, changes in financing, depopulation and migration, etc., to increased competition in the field of higher education. Therefore, it is necessary

that we make an attempt to utilise the knowledge, capabilities, material and financial resources at our disposal and to transform the challenges of changes in our midst into opportunities for further development.

This strategic document was developed for the period from 2020 to 2024 and it outlines the objectives which provide the framework according to which the Polytechnic will plan its activities in response to the changing environment and which will form the basis for future operational and financial decisions with the purpose of supporting business processes.

The presented strategic objectives are deliberately defined in a broader and more general sense, with the intention that each of them be specifically formulated at the tactical and operational level in accordance with the specific conditions of each department, study programme and other business processes. A detailed operative plan for implementation will be adopted on an annual basis, taking into account the strategic resources available and external input.

2. THE POLYTECHNIC OF RIJEKA TODAY

Since the Development Strategy of the Polytechnic in Rijeka of 2020 – 2024 is a continuation of the successful ongoing development and based on all the achievements of the Polytechnic so far, this chapter provides basic information on the organization and activities. This information provides a better understanding of the context which determines the future strategic direction of the development of the Polytechnic of Rijeka, which is presented in this document.

2.1 HISTORY

The significant events that have marked the activities, development and business activities of the Polytechnic of Rijeka to date will be presented in short chronological order below.

Academic year of 1998/1999	On 21 May 1998, the government of the Republic of Croatia adopts the Regulation on the Establishment of the Polytechnic of Rijeka, and the Ministry of Science and Technology issues a Provisional Permit to the institution for the initiation of its activities on September 23 of the same year, and the Polytechnic begins its operations. Numerous study programmes in different fields are carried out in five departments, considering that separate professional undergraduate study programmes from the Faculty within the University of Rijeka have been taken over.
Academic year of 2001/2002	On 3 July 2001, the Ministry of Science and Technology issues the Decision on the return of professional study programme to the Faculties, and the Polytechnic is faced with great challenges, since it is left with no students, study programmes (including its own) or space in Rijeka, merely three dislocated study programmes (in Gospić, Otočac and Pula). Since then, the Polytechnic has been developing as a completely independent institution. With great involvement of employees and financial investments, mostly from its own resources, the institution managed to ensure basic working conditions in a very short period of time and new study programmes, deficient in the field of higher education, were developed.
Academic year of 2004/2005	Cessation of enrollment in the professional study programme of Administrative Law in Otočac and initiation of its closure due to lack of interest.
Academic year of 2005/2006	The curricula have been updated and coordinated with similar programmes within the European Higher Education Area, i.e. the Bologna process. After completing the process of evaluation of the newly developed study programmes, the Polytechnic receives permits to conduct professional study programmes of Entrepreneurship in Gospić, Computer Science in Rijeka and Pula, Postal Transport in Rijeka, Road Transport in Rijeka and Gospić, Railway Transport in Rijeka, Winemaking and Mediterranean Agriculture in Poreč and Occupational Safety in Rijeka, as well as specialist graduate professional study

	programmes of Transport (Road, Railway, Postal) and Information Technology in Business Systems in Rijeka and Winemaking in Poreč.
Academic year of 2006/2007	Transfer of the students and classes of the professional study programme of Entrepreneurship and the professional study programme of Road Transport in Gospić to the newly established "Nikola Tesla" Polytechnic.
Academic year of 2007/2008	The Polytechnic begins conducting dislocated studies at new locations: the professional undergraduate study programme of Road Transport and professional undergraduate study programme of Railway Transport in Ogulin and the professional undergraduate study programme of Entrepreneurship in Pazin.
Academic year of 2008/2009	Cessation of enrollment of students for the professional study programme of Computer Science in Pula and its closure due to the establishment of the University of Pula and the planned establishment of the Faculty of Computer Science as its component.
Academic year of 2010/2011	A new undergraduate professional study programme of Telematics in Rijeka is initiated. For the purposes of professional study programmes conducted in Pazin, about 800 m ² of newly renovated premises located in the former barracks building in Pazin were put into service. The Polytechnic received a standard Erasmus University Charter and a mobility program is initiated.
Academic year of 2012/2013	The quality assurance system is certified in accordance with the Standards and guidelines for quality assurance in the European Higher Education Area (ESG). The first issue of the <i>Journal of the Polytechnic of Rijeka</i> is published.
Academic year of 2014/2015	The Polytechnic of Rijeka receives a <i>Letter of Expectation</i> in the process of its reaccreditation, which resulted in the drastic reduction of the enrollment quota in order to fulfill the criterion of the required ratio of the number of students and full-time teachers. There is a significant continuous decline in student numbers, since the criterion could not be met otherwise, i.e. by contracting additional teachers. This has a significant impact on the business and organization of the Polytechnic, since the number of students is reduced by more than 1 000, that is, if this includes the graduates, in accordance with the mode of study at the time, more than 1 500.
Academic year of 2015/2016	Cessation of enrollment of students in the undergraduate professional study programme of Road Transport and Railway Transport in Ogulin, that is, the inception of the process of closing down the relocated studies in Ogulin. In addition, enrollment to the undergraduate professional study programme of in Rijeka is also suspended.

	The implementation of the EU project for which the Polytechnic was the holder, "Development of a Professional Study Programme of Sustainable Agritourism through the Croatian Qualifications Framework", of HRK 1,779,415.20 in value, was completed.
Academic year of 2016/2017	The Polytechnic is certified according to the ISO 9001:2015 standard.
Academic year of 2018/2019	<p>The implementation of a new undergraduate professional study programme of Sustainable Agritourism in Rijeka begins, and a biotechnology laboratory is equipped and registered for this purpose.</p> <p>The implementation of the EU project "Development of the International Education Programme – Veleri-OI IoT School" of HRK 1,769,698.00 in value is initiated.</p> <p>The reception of the Decision of the Ministry of Science and Education which grants approval to the implementation of a new lifelong learning programme "Business Operations in Small and Medium-Sized Enterprises Supported by Information and Communication Technologies (ICT)".</p>

2.2 TEACHING ACTIVITY

The Polytechnic of Rijeka performs higher education activities by conducting a total of 9 undergraduate professional programmes and 5 specialist graduate professional programmes in three scientific fields (social, technical and biotechnical sciences). The programmes are well-structured and adapted to the requirements of the professional environment, with an emphasis on constant adaptation to development trends and needs of the economy and the local government.

All study programmes are conducted in accordance with the Bologna Declaration and based on learning outcomes that students need to adopt within the workload defined by ECTS (*European credit transfer and*

accumulation system) credits. The learning outcomes that the student must adopt are defined for each course, as well as the methods and activities to be successfully completed, and the minimum threshold for individual activities. Student progress is continuously monitored and evaluated throughout the semesters, and progression through study programmes is based on ECTS credits earned, as defined by the Ordinance on the Study Process.

The study programmes are offered for full-time and part-time students, and are therefore also available to employed students who study on a part-time basis or cannot attend regular classes for another reason. The classes are given by teachers

with research and professional qualifications, a large number of them with business backgrounds, and students are divided into appropriately sized groups. Emphasis on practice is present in all programmes, both in the course content and in the inclusion of practical instruction in the curriculum. An incentive towards early contact with companies and work environments through the practice of internship is systematically supplemented by fieldwork and professional field trips, which enable students to gain a direct insight into real-world processes.

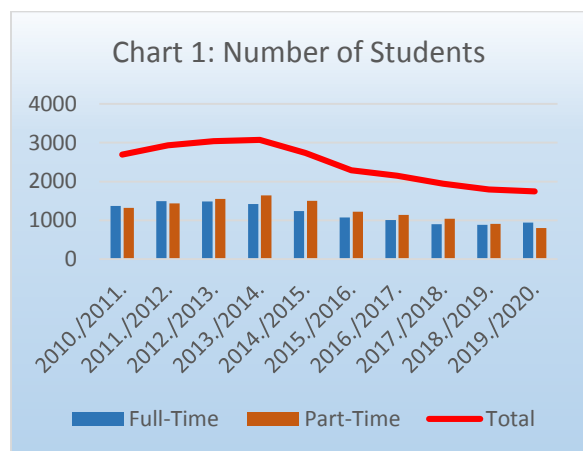
Most of the programmes are conducted at the headquarters of the Polytechnic, in Rijeka, at the address Vukovarska ulica 58. For the purpose of enabling the students that reside outside Rijeka to attend study programmes as near to their place of residence as possible, the Polytechnic conducts a part of its programmes at other locations. A specific case is the study programmes of Winemaking and Mediterranean Agriculture which are *based* and conducted in Poreč due to the special conditions they require. The study programmes, the levels, locations and organizational units at which they are performed are shown in the table below.

Departments	Undergraduate professional study programmes	Specialist graduate professional study programmes
Dept. of Transport	Road Transport – Rijeka	Transport – Rijeka ➤ <i>Road Transport</i> ➤ <i>Railway Transport</i>
	Railway Transport – Rijeka	
Business Department	Computer Science – Rijeka	Information Technology in Business Systems – Rijeka ➤ <i>Software Engineering in Business Systems</i> ➤ <i>Business IT Systems</i>
	Entrepreneurship – Rijeka	Entrepreneurship – Rijeka
	Entrepreneurship – Pazin	
Dept. of Occupational Safety	Occupational Safety – Rijeka ➤ <i>Industrial Occupational Safety</i> ➤ <i>Fire Safety</i> ➤ <i>General Safety</i>	Occupational Safety – Rijeka ➤ <i>Industrial Occupational Safety</i> ➤ <i>Fire Safety</i> ➤ <i>General Safety</i>
Dept. of Agriculture	Winemaking – Poreč	Winemaking – Poreč
	Mediterranean Agriculture – Poreč	/
Independent Studies	Telematics – Rijeka	/
	Sustainable Agritourism – Rijeka	/

2.3 STUDENTS

Those candidates that have completed a minimum of four years of secondary education and have passed the national leaving exam may enroll in the undergraduate study programmes at the Polytechnic of Rijeka. A smaller number of students come from secondary schools, and a larger number, about 80%, from vocational schools. The requirement for admission to graduate studies is the completion of a corresponding three-year undergraduate professional or university study programme, or a minimum of 180 ECTS credits.

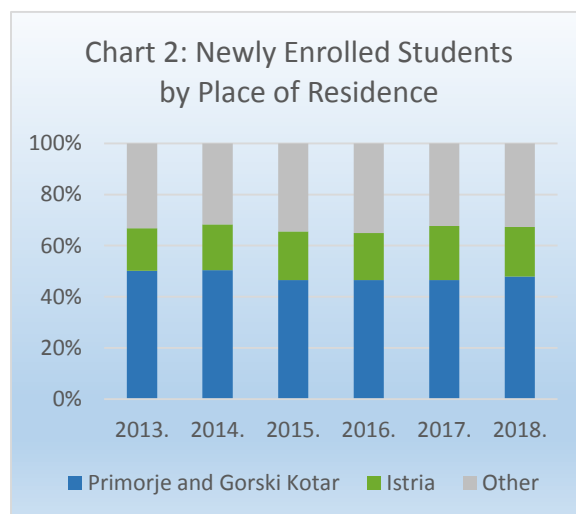
In recent years, there has been a marked decline in the number of applicants for enrollment for almost all study programmes, especially of part-time students. However, if recent developments are taken into account, such as increased enrollment quotas in Croatian higher education institutions, the demographic decline and economic migration, the interest in all study programmes of the Polytechnic of Rijeka is satisfactory.



The decrease in the number of students, shown in Chart 1, was caused primarily by a drastic decrease in enrollment quotas in 2015, conducted for the purpose of reducing the number of students, in order to achieve

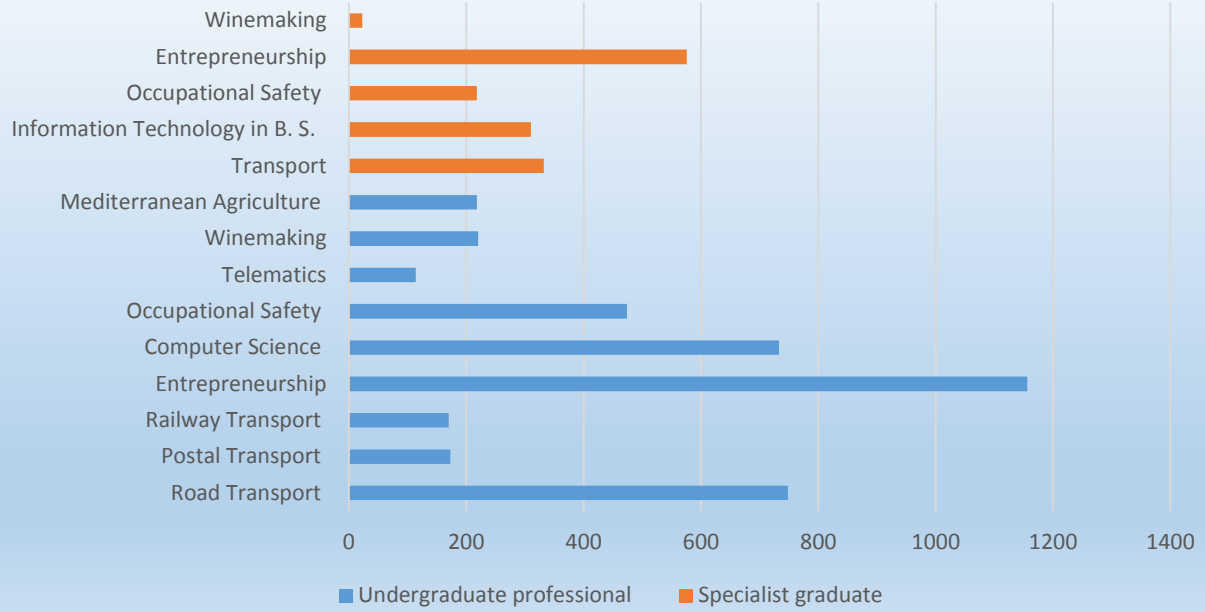
the prescribed ratio of students and full-time teachers of 1 : 30. The current ratio at the Polytechnic is 1 : 23.5.

The majority of the enrolled students come from the counties in which the Polytechnic operates, i.e. from the Primorje-Gorski Kotar and Istria counties (Chart 2). However, about 30% of students come from other parts of the Republic of Croatia, with Dalmatia as the origin of the least amount of students (with the exception of the Zadar County). About 1,700 students are currently enrolled at the Polytechnic of Rijeka. So far, just under 7,000 students have completed various study programmes, as shown in Chart 3.



Student performance is monitored by analysing academic success, and student satisfaction by observing the quality of the study and teaching process by means of student surveys. The assessment grades given by students are continuously very good and have been at the level of 4.3 – 4.5 (scale 1 – 5) regarding the quality of teaching for many years. A slightly lower grade for the overall quality of the study process was given by students who have completed their studies (about 4.1), while the quality of practical classes is graded the highest (about 4.7) by students and employers.

Chart 3: Number of Alumni



2.4 EMPLOYEES

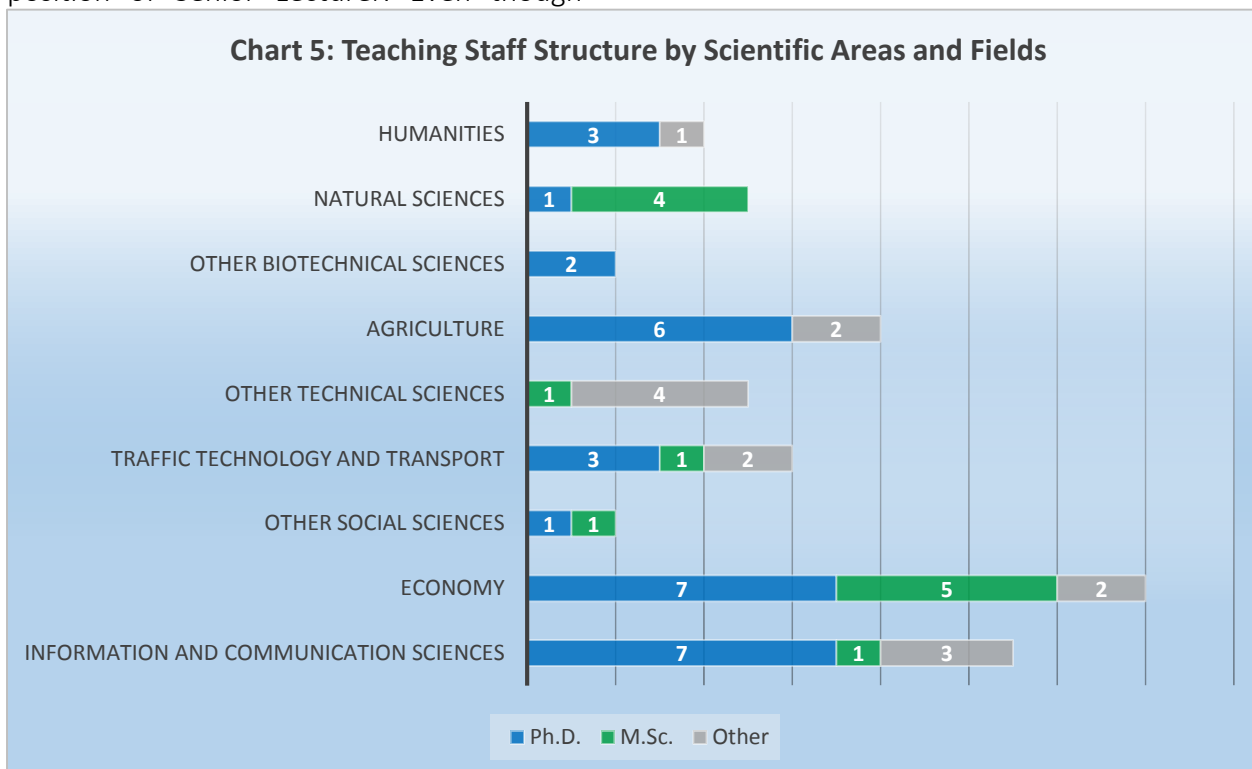
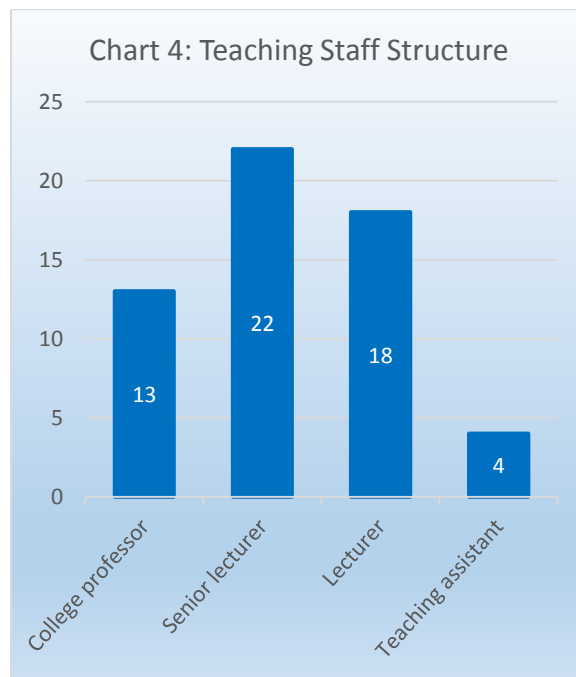
The Polytechnic currently employs 84 members of staff, 57 of which comprise the teaching staff.

Number & Gender of Employees				
84 employees	Teaching Staff	♀	34	57
		♂	23	
	Professional Services	♀	22	27
		♂	5	

The vast majority of employees is funded by the Ministry of Science and Education of the Republic of Croatia, and wages of 12 of the employees are funded by the institution.

Employees with doctoral degrees in various fields make up the majority of our teaching staff, with most of them elected to the position of Senior Lecturer. Even though

public polytechnic institutions do not offer adequate job posts for the purpose, a large number of teachers have also been selected for the subject and research or research and teaching positions.



2.5 PREMISES AND EQUIPMENT

The Polytechnic of Rijeka performs its higher education activities primarily at the location in Rijeka, at the addresses Vukovarska ulica 58 and Trpimirova broj 2/V, where the Dean's Office is located, as well some of the supporting services.



A total of 4,947 m² of usable surfaces is at the institution's disposal. Ownership and use of these premises are regulated by contracts with individual owners of the premises, namely: the City of Rijeka, the City of Pazin, the Institute of Agriculture and Tourism of Poreč and the Agricultural School of Poreč.

The Agricultural Department operates in Poreč at the address C. Huguesa 6, while the undergraduate professional study programme of Entrepreneurship is conducted, apart from Rijeka, in Pazin as well, at the address 154. brigade Hrvatske vojske 7.

The premises dedicated for teaching activities cover an area of 3,286 m². 1,690 m² of that area is comprised of 26 classrooms, including two in amphitheater form, with a total of 1,348 job posts.



One of the important strategic goals for the next period, as has been the case in the past, is the provision of additional independently owned premises. Although the above-mentioned premises are sufficient for obtaining the quality of teaching and other business processes, they are a limiting factor in the development of the Polytechnic. Since all the premises are leased, they also represent a financial burden, as well as risk, especially in locations with fewer students, such as Pazin and Poreč. Furthermore, the premises are located in different cities, therefore, no redistribution is possible and,

consequently, neither is their rational use in terms of occupation. In such circumstances, regarding only the location in Rijeka, the lack of space becomes a limiting factor in the development of new studies and programmes. The successful resolution of the issue does not depend solely on the Polytechnic itself, seeing as how that would extend beyond its financial capabilities, but it certainly represents one of the more important strategic goals and planned measures.

Apart from the aforementioned conventional classrooms, the Polytechnic has a number of specialized classrooms, laboratories, practical classrooms, etc. There is 737 m², of area comprised by nine teaching laboratories / practical classrooms with 241 job posts, six IT classrooms with 148 computers and 250 job posts, and a student basement. The institution is constantly investing in equipment, devices, accessories, software licenses, etc., therefore, the laboratory and practical classroom equipment is quite satisfactory in terms of class requirements.



2.6 DOMESTIC AND INTERNATIONAL COOPERATION

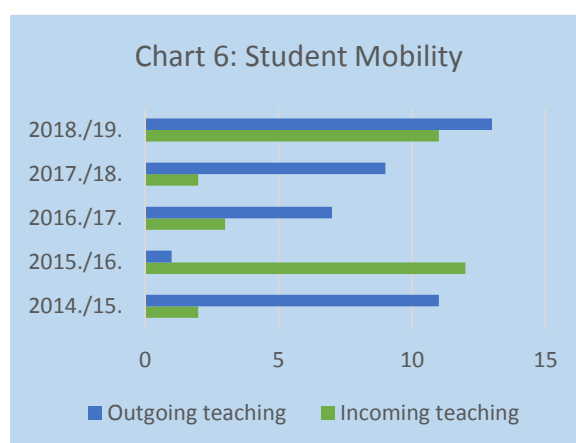
An important factor in the overall activities of the Polytechnic of Rijeka is cooperation with the economy, local community and other higher education institutions, both domestic and international.

International cooperation is only partly about the implementation of bilateral projects, but more about the mobility of students and the teaching and non-teaching staff. Cooperation agreements with regard to the Erasmus Mobility programme have been signed with 33 institutions in 14 countries. Since the academic year 2018/2019, the Polytechnic has also been participating in the CEEPUS programme in 7 networks (*Modelling, Simulation and Computer-aided Design in Engineering and Management, Renewable Energy Sources, Intelligent Automation for Competitive Advantage, Computer-aided Design of Automated Systems for Assembling, Applied Economics and Management, Active Methods in Teaching and Learning Mathematics and Informatics, and New Teaching Technologies and New Applications in a Modernization of Teaching at the Faculties of Technical Sciences in Connection with the Needs of Small and Medium-Sized Enterprises in the Environment*). In addition to the executed incoming and outgoing student mobility, as shown in the following chart, this collaboration also positively affects the quality of the teaching process through the improvement of our teachers, lectures given by foreign guest lecturers and the exchange of examples of good practices.

In the past five years, the Polytechnic has hosted 31 lecturers, 28 of which have given lectures to students as part of regular classes.

During the same period, 21 teachers of the Polytechnic were visiting foreign higher education institutions.

The Polytechnic cooperates with a large number of domestic economic operators and institutions and concluded dozens of contracts on professional partnership and improvement of the teaching process, especially with regard to the implementation of professional practice and the inclusion of renowned experts in practical teaching.



Moreover, through its representatives, the Polytechnic is involved in the projects and work of numerous public bodies, associations, councils, committees and professional associations for the purpose of promoting the profession and incentivising the development of the local community. Particular emphasis is placed on cooperation with public entities in promoting socially responsible business through the transfer of knowledge and technology and/or raising awareness of its importance.

2.7 RESEARCH AND PROFESSIONAL WORK

The Polytechnic of Rijeka dedicated great attention to the development of the research careers of its teachers in the field of professional and research activities in the technical, social and biotechnical fields. The institution supports and co-funds professional training at postgraduate studies, participation in scientific and professional conferences, publication of papers in various journals, as well as other forms of professional training. This is reflected in the results achieved in previous years. In the last five years, 14 teachers of the Polytechnic have obtained a doctorate of science, which means that now 30 teachers, or over 50% of the teaching staff, hold the title of Doctor of Science. An additional 21% of teachers have a Master's degree in Science, which means that over 70% of teachers have completed postgraduate education. As previously mentioned, a significant number of teachers is also elected to research positions at Faculties, since polytechnic institutions do not offer the possibility of conducting elections to scientific or scientific-teaching positions or to create job posts thereof.

The number of published papers is continuously increasing. Compared to 2013, the number of papers in publications represented in CC and SCI databases increased by about 40%, and the total number of published professional and research papers increased by about 41%. In this context, it is important to note that the Polytechnic publishes the *Journal of the Polytechnic of Rijeka (Journal of the Polytechnic of Rijeka)*, offering important content for the scientific and professional public in the scientific fields within which the Polytechnic performs education, research

and development activities. The journal is indexed in the bibliographic database Emerging Sources Citation Index (ESCI) – Web of Science Core Collection, therefore, research papers published in the journal are classified as Category-A papers in the field of technical sciences, that is, the first group (a1) in the field of biotechnical and social sciences.

The Polytechnic of Rijeka participates in a number of projects as a holder or partner. Some of the more recent projects include those within the European Social Fund, of which the Polytechnic is the holder, which are aimed at developing new programmes necessary for the regional economy. Although specialised projects are also being implemented, there is considerable room for progress in this area, namely for the implementation of research projects and the development of high-level studies in order to meet requirements of the economy and the local community. On the other hand, the Polytechnic is already active in disseminating knowledge and technologies to the public and the economy.

2.8 QUALITY SYSTEM

The Polytechnic of Rijeka has recognized the importance of establishing a quality assurance system (QAS) from the very beginning. The relevant activities began by conducting a survey of students' opinions regarding satisfaction with the programmes, and to date have grown into an entire system of measures, activities and indicators related to continuous improvement in all aspects of institutional activity. The attained level of quality of the system is confirmed by certificates of compliance with ESG (European Higher Education Area) and ISO 9001:2015 and 22301:2012 standards.

In order to improve the quality of the system regarding the core activity and monitor the satisfaction of key stakeholders, a student survey system was designed and implemented that utilised *online* technology, while ensuring the preconditions for reaching relevant samples and thus making the most objective assessments possible (for example, in the academic year 2017/2018, the system analyzed 4009 completed survey questionnaires related to 297 different class models).

A well-established quality assurance system that integrates the requirements of the aforementioned standards enables quality functioning and continuous improvement of all polytechnic processes, including the QAS itself.

3. PREPARING FOR THE FUTURE

A Changing Environment	<p>These are times of great global changes and challenges affecting all of us: climate change, migration, environmental protection, increasing population of Earth, IT security, sustainable energy sources, clean water, etc. These challenges, accompanied with technological developments, are changing the way we work and live.</p> <p>Furthermore, there are some <i>national</i> challenges that significantly affect or may affect higher education, such as:</p> <ul style="list-style-type: none">- population ageing;- migration of young people to Western countries;- decreasing number of high-school graduates;- unfavorably structured industry;- labor immigration from countries outside the European Union;- changes in funding of public higher education institutions, etc.
Responding to Changes	<p>Utilising our knowledge, capabilities, material and financial resources at our disposal and transforming the challenges of changes in our midst into opportunities for further development.</p>
Risk Management	<p>There are risks associated with pursuing ambitious strategic objectives in an attempt to manage anticipated future uncertainties. On the other hand, maintaining the existing state and not taking the steps to adapt to the changing external conditions poses an even greater risk.</p> <p>The intention behind the creation of this strategic plan was to raise awareness of current and potential risks in order to provide a framework in which implementation and annual operational plans will generate processes for the purpose of effectively managing those risks.</p>

SWOT Analysis	
STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Diversity of study programmes in different scientific fields (technical, biotechnical and social fields) • Visibility and uniqueness of certain study programmes • Qualified teachers from various professional and scientific fields • Systematic care for the professional development of the teaching and non-teaching staff • High level of student satisfaction regarding quality of teaching by courses • High level of alumni satisfaction regarding the quality of study programmes • Involvement of employees in professional organizations • Participation large number of professional experts in the teaching process (external associates and guest lecturers) • International staff mobility (incoming and outgoing) • Significant share of the students' workload comprised of practical classes and fieldwork • Use of e-learning systems • Organization of classes adapted for part-time students • Active development of student mobility opportunities • Active student organizations • Favourable location and transport connections • Continuous investment in equipment according to external and internal requirements (laboratories, IT equipment, etc.) 	<ul style="list-style-type: none"> • Additional dynamic training of teachers in different fields (new teaching and assessment methods, use of technology (e.g. e-learning, foreign language skills, etc.), with regard to the dynamic of external changes • Difficulty in recruiting new STEM teachers • Insufficient options of additional employee stimulation (limited by the existing regulations), which affects employee motivation for additional engagement • Resistance of a part of the employees to introduction of changes and adjustments to the institution's <i>market orientation</i> • Dynamic revision of study programmes • A certain degree of overlapping of study programmes with similar externally provided programmes • A decrease in the number of students enrolled • Systematic monitoring of employability and careers of our alumni • Spatial constraints – lack of privately owned space • Insufficient publicity (insufficient media presence) • Use of resources for inter-institutional cooperation on the national and international level

<ul style="list-style-type: none"> • Collaboration with economic operators, domestic and international higher education institutions • Collaboration with the local community • Quality culture and certificates of quality • Promotion on social networks • Institution's own publishing • Indexed <i>Journal of the Polytechnic of Rijeka</i> • Development of lifelong learning programmes • Socially responsible engagement of our employees and students 	
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Willingness of economic operators to cooperate with higher education institutions in the implementation of internships and other forms of cooperation • General tendency of higher education institutions (domestic and international) towards cooperation (mobility programs, various projects, joint study programmes, mobility programmes, etc.) • Willingness of local government and self-government units to cooperate in different areas of interest • Demand for short, targeted, specialized education programmes (courses, lifelong learning programmes, distance learning, etc.) • Availability of EU funds for higher education purposes (equipment, development of study programmes, employee training, internationalization and other development areas) • Accessibility of various local, regional and national projects 	<ul style="list-style-type: none"> • Lack of a specific profile of potential employees (teachers) in the labour market (STEM area) • Perception of professional study programmes as inferior to university programmes • Relevant legislation (especially regarding the (lack of) recognition of qualifications acquired at polytechnic institutions (e.g. the State Inspectorate Act) • Unstable global political situation and terrorism • Demographic trends and emigration • Increase of competition in higher education (in the Republic of Croatia and the EU) • Reduced demand for part-time study • Change of the terms of office space lease (e.g. lease payment increase, termination of contracts, etc.) • Increased cost of living • Rapid obsolescence of technology (challenges regarding resources and competences)

<ul style="list-style-type: none">• Development of modern technology for the purpose of modernising and supporting the teaching process• Labour market demand for employee profiles with specific professional/specialized skills• Expanding student base to a wider regional area• Collaboration with alumni who have established respectable business careers	
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MISSION

The Polytechnic of Rijeka is a higher education institution that employs its educational process and professional and research work in the fields of technical, biotechnical and social sciences to create competent individuals with appropriate theoretical and practical background that enables them to take on different challenges in their community, as well as employment in the labour market, to the benefit of system stakeholders, the economy and society as a whole.



VISION

The Polytechnic of Rijeka will be the leading institution of higher education in the area of vocational education and applied research, while also being technologically modern and flexible, and prepared for constant adaptation to the needs of the economy and the community. Partnerships for community development, cooperation with the economy, involvement in the European Higher Education Area and the European Research Area, as well as its high-level organization, will be the tools with which the Polytechnic of Rijeka will continue to show its public responsibility and participate as an active stakeholder that provides impetus to the development of society.

4. STRATEGIC OBJECTIVES OF 2020 – 2024

The starting point for the drafting of the Development Strategy of 2020 –2024 is the mission and vision of the Polytechnic of Rijeka. Consequently, the four main areas within the scope of activities of the Polytechnic represent the framework for the definition of the strategic objectives in the aforementioned period:

- teaching activity;
- management of the Polytechnic and quality assurance;
- institutional resources;
- collaboration and research activities.

Each strategic objective is elaborated into several specific sub-objectives. The main expected outcomes are outlined for each of the objectives, which reflect the anticipated course of action, i.e. the main results that are expected to be achieved in the planned strategic period.

More detailed operational steps, i.e. ways of implementing the Development Strategy and the achievement of defined strategic objectives, are elaborated in a separate document for each year (Action Plan). These plans are used to elaborate differentiated operational tasks and measures across individual departments and independent studies, taking into account their differences and the performed SWOT analyses.

4.1 TEACHING ACTIVITIES

STRATEGIC OBJECTIVE 1: CONTINUOUS IMPROVEMENT OF THE QUALITY OF TEACHING.

Highly specialized study programmes and work with students are the backbone of our activities. The Polytechnic of Rijeka currently offers 9 undergraduate professional study programmes and 5 specialist graduate study programmes (in the fields of Transport, Computer Science, Telematics, Occupational Safety, Agriculture and Economics). The number and variety of study programmes represents an added *value* of our institution, since it provides us with interdisciplinary insight into specific market demands and enables us to adapt and develop study

programmes with the optimal combination of targeted professional and generic results.

The quality of study programmes and the quality of studying experience are not synonymous concepts. Within the framework of the *quality of study programmes*, the continuation of the activities of the revision and adaptation of those programmes to modern conditions is essential, as is taking into account the development of the relevant professions, the demands of the labour market, but also the expectations of the student population and other interest groups. These processes need

to be structured and accelerated in order to achieve the demanding objective of revising all study programmes during the strategic period. Within the scope of this revision, it is necessary to identify the need of improving in professional content, but also to consider the possibility of introducing elements of entrepreneurial education in all study areas and the possibility of improving student internships, intensifying actual cooperation with economic operators, for the purpose of providing the students with better grounds for entering the labour market.

Sub-objective 1.1: Study Programmes

Continuous improvement and review of study programmes based on learning outcomes, quality indicators and employer recommendations, and, where necessary, development of new study programmes for the purpose of meeting the needs of the economy and the entire community.

In order to achieve this specific objective, it is necessary to continue implementing the initiated activities regarding revision of the existing study programmes, which includes comprehensible scheduling and the appointment of competent teams.



It is still necessary to consistently perform the activities of gathering and analyzing feedback from key stakeholders (students, employers, local community) regarding all aspects of the quality of study programmes and opportunities for improvement (surveys, structured interviews, etc.). Furthermore, the *economy* should be involved more intensely into the implementation of the programme, not only through professional internships, but also through more enhanced collaboration with the business community on case studies as part of the curriculum.

Sub-objective 1.2: Organization and Performance of Classes

Systematic evaluation and improvement of the quality of classes and teaching.

The high level of student satisfaction expressed in student surveys represents an obligation to continue our work and teaching activities with the benefit of our students in mind. Due to the introduction of a new way of performing assessments and/or evaluation of the adoption of learning outcomes, the emphasis for the upcoming period should be on *soliciting* feedback from students on the consistency of student workload, transparency and uniformity of assessment criteria, passing rates, etc., and striving towards streamlining these processes.

Ongoing teacher training for the purpose of improving working methods and the effectiveness of the teaching process is an absolute necessity. In the upcoming period, special importance will be placed on enhancing competences regarding the use of e-learning opportunities and improving the practical teaching process in English, and, in terms of internationalization, modernising teaching methods and increasing the

accessibility of studies to part-time students.



Moreover, additional efforts will be employed towards practically oriented classes. In this regard, it is necessary to ensure the participation of recognized external associates – professional experts, plan professionally oriented field trips and fieldwork, as well as improve the quality of practical exercises.

Sub-objective 1.3: Students

Improvement of the student standard and the student support system.

The very active Student Union and the registration of two student associations during 2019 make it necessary to continuously conduct activities related to the provision of financial and organizational support for the students' social, cultural and sporting activities.

With regard to specific student categories, additional focus will be placed on freshmen, final-year students and students pertaining to vulnerable categories.

Ensuring easier and faster initial orientation at the institution (student life) is crucial for newly enrolled students. On the other hand, we need to guide our final-year students through their next challenging life steps of entering the labour market by consulting and connecting with potential employers.

In terms of vulnerable groups, recent examples show that spatial and organizational support for students with disabilities works, however, it needs to be formalized in order to accelerate and simplify the process. We also identified the need for formalization of facilitated accessibility to the study activities for students in alternative care.

Sub-objective 1.4: Lifelong Learning

The establishment of a sustainable lifelong learning system to meet the needs of the economy and the broader community.

As a practice-oriented higher education institution, we must contribute to the dynamic labor market in the upcoming period by quickly adapting through lifelong learning programmes, thus increasing employability and reducing unemployment.

In the future, each department of the Polytechnic should offer specific lifelong learning programmes, and, thus, institutional prerequisites should be created in the form of the establishing support and counseling offices for programme development and application, and defining the methodology for programme development and financial support for initial research and development.

Main Expected Outcomes

- Revision of existing study programmes
- Increasing the number of courses using e-learning tools
- Improved user satisfaction
- Increasing the number of lifelong learning programmes

4. 2 MANAGEMENT OF THE POLYTECHNIC AND QUALITY ASSURANCE

STRATEGIC OBJECTIVE 2: IMPROVING THE BUSINESS OPERATIONS OF THE POLYTECHNIC AND DEVELOPING A CULTURE OF QUALITY IN ALL PROCESSES WITHIN THE WORK SCOPE OF THE POLYTECHNIC.

The conditions in which higher education institutions, especially polytechnics, operate, are becoming increasingly more complex. The quality requirements of all processes, combined with appealing study programmes, are key to ensuring a successful future.

The Polytechnic of Rijeka continuously monitors and improves the quality management system, following the European standards and guidelines for quality assurance in the European Higher Education Area and the requirements of ISO 9001:2015, which includes monitoring the internal and external environment and taking corrective actions in order to ensure continuous improvements. The recommendations of internal and external independent assessments represent the grounds for creating an activity plan and control mechanisms.

The complexity of the requirements and expectations that higher education institutions are faced with nowadays require the specialization of persons, services or offices in order to adequately meet them, which, in turn, increases the dangers of suboptimization. Therefore, activities related to setting up special "offices" for the purpose of projects, lifelong education, quality, careers, etc. must be accompanied by systematic collection and monitoring of documentation, that is, activities of informing all stakeholders, both internal and external.

Assuming that the role of the Polytechnic is not only to educate "young people" for the purpose of quick and successful inclusion in labour processes in the economy, but also to make them aware of their role in the community, special activities will be conducted in the field of promoting social entrepreneurship.

Sub-objective 2.1: Quality Assurance System

Continued development of the quality assurance system as per ESG standards.

A quality system based on the fulfillment of the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG) as well as the ISO 9001:2015 standard, imply the continuous implementation of activities in terms of internal audits, recertifications, annual audits and follow-up activities according to the findings.

Additional measures that would be emphatically implemented in the next period include an analysis of the implementation of the procedures adopted in previous cycles and a periodic review of their effectiveness and ensuring better documentation of the implementation of procedures and activities.

The basis and prerequisite for the successful implementation of this sub-objective is the adoption of quality objectives that will serve as support to the implementation of this

Strategy, which is also the first task and activity within this sub-objective.



Sub-objective 2.2: Providing Information

Establishment of an effective information management system.

The Polytechnic of Rijeka shares the problem of all polytechnics and colleges in the Republic of Croatia in terms of recognizing the specificity, values and diversity of professional studies. Therefore, activities of informing the public about the institution's operations and activities must continue, but also intensify.

The current demographic trends, i.e. the decline in the number of potential candidates for enrollment in higher education institutions, further emphasizes the need to carry out these activities in terms of ensuring greater visibility or promotion of the Polytechnic.

In addition to informing the public, it is necessary to ensure efficient circulation of information within the system. In order to ensure that the stakeholders are informed, but also to avoid repeatedly collecting identical information at different levels, it is necessary to develop a plan for collecting, analyzing and archiving key indicators in all areas of the work scope of the Polytechnic.

Sub-objective 2.3: Social Role

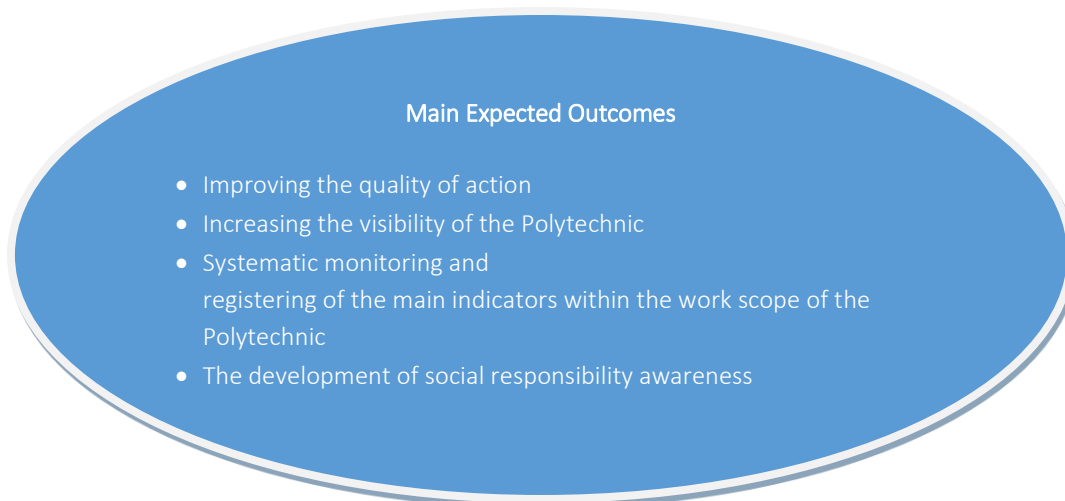
Becoming an exemplary socially responsible institution of higher education.

The Polytechnic has an effective system in place to prevent unethical behavior of employees and students. Furthermore, employees and students are members of bodies of the local community and social organizations, as well as scientific and professional bodies contributing to the development of the economy and society through their activities.

Students particularly excel in their humanitarian work through individual volunteering as well as organized student actions, such as: voluntary blood donation, collecting supplies for a social self-service activity, organizing charity sports and social events (donations), etc.



Recognizing this potential, that is, the will, intention and eagerness of our students, activities towards developing social responsibility awareness will be especially prominent in the coming period, not only through financial and organizational assistance in performing these and similar student activities, but by introducing elements of social entrepreneurship and/or social innovation in the study programme curricula.



4. 3 INSTITUTIONAL RESOURCES

STRATEGIC OBJECTIVE 3: PROVIDING THE HUMAN, MATERIAL AND FINANCIAL RESOURCES NEEDED FOR SUSTAINABLE OPERATION OF THE POLYTECHNIC

In the current environment, human resources are crucial to the success of any type of organization. This applies even more to education institutions. High quality and responsibility, as well as a high level of motivation and engagement with a willingness to take initiative and implement change, are just some of the necessary characteristics of employees in the higher education system. Human resources of the Polytechnic consist of teaching and non-teaching staff, and the appropriate training and development activities and motivational mechanisms should be implemented and continually reviewed regarding each member of the staff.

The development of the teaching staff should run in two directions. One direction relates to teacher excellence and results, and the other to readiness and competence for work in other fields of activity, with the aim of

contributing to the success and recognition of the institution.

Non-teaching staff support the core operations of the Polytechnic. The high level of expertise of staff and services is the foundation for the quality development of every institution. The highly complex processes and conditions of the environment set high requirements of expertise and independence in the performance of professional tasks. In this sense, it is necessary to support the development of the expertise of non-teaching staff, both in organizational and formal terms, as well as in terms of motivation and affirmation.

Although human resources are crucial, the quality of mission fulfillment also depends on material factors without which, in spite of the quality, the staff will not be able to fully demonstrate their potential and ensure a high-level teaching process. This bears

special importance, since the vast majority of the Polytechnic's programmes relates to the STEM area and, in view of the continuous technical and technological advancements, such programmes require constant investment in equipment, devices, software, etc. On the other hand, it allows for solely rational and efficient management of financial resources.

Sub-objective 3.1: Human Resources

Ensuring the adequate quantity and quality of teaching and non-teaching staff.

The possibilities of increasing the number of employees are quite limited, despite a great need thereof, consequently, the focus must be on improving the competences of existing employees and planned replacement of retired staff. Another aspect of systematic concern regarding human resources, seeing as how the Polytechnic conducts professional studies, is external experts from the professional world. A more proactive approach can be taken towards the latter aspect, as well as systematic monitoring of the quality of work of existing associates and contracting new ones that could use their skills to increase the quality of the teaching process.



The Polytechnic steadily invests in the development of its staff by providing funds for postgraduate studies and participation in scientific-professional conferences for teachers and specialized seminars for non-teaching staff, etc. It also monitors, plans and implements promotions to higher-level positions, conducts recruitment procedures and incentivizes international mobility and training. These activities need to continue in the future, as well as institutional training of employees, that is, taking systematic care of additional education in the field of using new technologies, teaching methods, foreign language, etc.

Given the recent changes in the complexity and volume of jobs, the need to develop a new job classification in the next period is based on a concrete insight into the real jobs and duties of individual employees, with the aim of defining clear responsibilities and authorities.

One of the key goals of the human resources management function that relates to all employees is the development of a culture of quality and communion, or identification, with the Polytechnic.

Sub-objective 3.2: Material Resources

Providing adequate space and up-to-date equipment as an integral part of the quality assurance regarding teaching activities.

In order for the teaching process to achieve a higher level of quality, the Polytechnic employs continuous and intense efforts to secure the necessary equipment and other material resources. In the last four years alone, we have invested HRK 4,482,224 in non-financial assets, or more than HRK 1 million on average per annum.



Taking into account all the locations where the studies of the Polytechnic of Rijeka are conducted, from the point of view of work space and equipment, good conditions for the performance of the existing studies are ensured. However, in order to maintain (improve) the achieved level in the upcoming period, it is necessary to continue their maintenance and modernisation, with special emphasis on the most up-to-date equipment in the classrooms, practical classrooms and laboratories.



An issue that could adversely affect the development and business of the Polytechnic in the future is space. Namely, all the premises of the Polytechnic are leased, and finding a private space

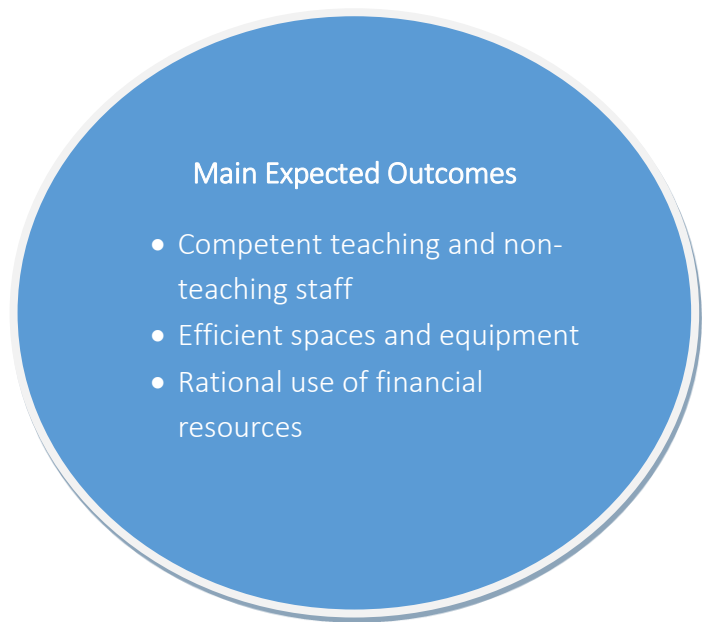
or additional space is a priority and a continuous objective set out in previous Development Strategies as well. Throughout this strategic period, the basic objective is to provide a foundation for teaching in the field of agriculture at the location of Rijeka's agglomeration for the purpose of meeting the requirements of the study programme of Sustainable Agritourism, that is, establishing the institution's own plantation.



Sub-objective 3. 3: Financial Resources
Ensuring the financial stability of the Polytechnic.

The rationalization and reorganization conducted in previous years amortized the financial impact of the decrease in the number of students conditioned by the requirement of reducing enrollment quotas as communicated in the *Letter of Expectation*, and the current financial situation is quite stable. However, should negative trends caused by demographic changes continue and not be offset by activities in other areas (lifelong learning, projects, etc.), financial development potential could be reduced in two to three years' time. This could especially affect the achievement of the Sub-objective 3.2.

With continuous adjustment of total expenditures in relation to planned revenues for the purpose of further increasing business efficiency, but also as a basis for possible future reorganizations or changes in strategic objectives, it is necessary to introduce managerial accounting, i.e. monitoring of operations by individual organizational units, locations and study programmes.



4. 4 COLLABORATION AND RESEARCH ACTIVITIES

STRATEGIC OBJECTIVE 4: IMPROVEMENT OF DOMESTIC AND INTERNATIONAL COOPERATION AND ENCOURAGEMENT OF RESEARCH ACTIVITIES

Nowadays, domestic and international cooperation with higher education institutions, the local community and the economy is an absolute necessity and a priority for development and sustainability, but also an obligation of all higher education institutions. Research and professional activity is one of the key links, the basis and foundation of successful and productive cooperation.

There are still plenty of opportunities for applying to EU-funded professional and research projects. These projects are beneficial in many aspects, considering that they enable new opportunities for employee development, new sources of funding and provide important infrastructure and other resources, transfer knowledge to its concrete application in the field of professional and applied research work, partnerships with other domestic and

international institutions in the public and the civil sector and, most importantly, result in concrete development outcomes.

For students, international cooperation through mobility programs represents the opportunity to gain experience of studying and living abroad, but also a higher quality of teaching, provided that the teachers and other employees have acquired international experience in teaching and training or work in an international environment.

Through cooperation with the business and local community, the employees of the Polytechnic have the opportunity to apply the knowledge acquired through scientific and research work, and at the same time acquire experience and knowledge about applied technologies, as well as the issues facing the economy, i.e. the need for new technologies and expert profiles. The aforementioned elements positively reflect

on the teaching process in terms of raising its quality from the point of view of implementing innovation in study programmes, but also transferring the necessary knowledge to students for the purpose of their quick inclusion in labour market processes. This positive effect on the teaching process is even more pronounced considering that the Polytechnic offers professional studies and that a number of industry experts are actively involved in the teaching process, ensuring the direct transfer of practical technological knowledge and practical experience, which provides the students with immediate relevant insight by means of professional internships.

Sub-objective 4.1: International Cooperation
Increasing the international recognition of the Polytechnic.

For the purpose of ensuring the prerequisites for the development of international cooperation, the Polytechnic has concluded a number of bilateral agreements and also actively participates in the ERASMUS+ and CEEPUS mobility programs.

The number of achieved incoming and outgoing mobility instances in the previous years, as well as the definition of specific objectives regarding this area in the Programme Funding Agreement by 2022, obligates the Polytechnic to implement activities and measures to incentivize them.

Although the primary focus in the strategic period, due to the stated obligation in the Program Funding Agreement, must be on activities related to the mobility of teaching staff and students, activities related to the enhancement of existing contracts through

concrete cooperation must be performed, e.g. through joint projects, participation in parts of study programmes, organization of professional and scientific conferences, research work, etc., using the modalities at our disposal.



Sub-objective 4.2: Domestic Cooperation
Enhancing professional cooperation with the local community, representatives of civil society and the labour market.

The Polytechnic cooperates with professional associations through membership and active participation of employees, but also through concrete activities and projects, such as joint presentations, workshops, organization of professional meetings and events.

The institution has an established relationship of cooperation with the local community, that is, the County and the City, as well as various public institutions and associations. Several cooperation agreements have been concluded with domestic higher education institutions, with more significant cooperation being achieved through EU projects, which should certainly be incentivized even further.

In terms of cooperation with the labour market, the Polytechnic has concluded over 50 cooperation agreements. It is mostly

related to students' professional internships, but there is also a significant number of contracts that provide for the possibility of cooperation in other fields, which represents significant potential for the future. In this respect, the Polytechnic undertakes to implement activities of profiling and *training* regarding the preparation of professional projects, studies and reports for or in cooperation with economic operators. However, the primary mutual objective and interest through cooperation should still be to ensure the best possible education of students, future employees, through professional internships and the transfer of practical knowledge and experience from the world of economy.



Particular attention in the context of domestic cooperation in the forthcoming period will be directed towards the ALUMNI Association, as a hitherto unused potential, and the activities of the Career Centre, which can contribute to the achievement of this objective.

Sub-objective 4. 3: Research Activities

Improving professional research activities.

Taking into account the requirements regarding human resources as previously

described, it can be said that there is a strong base at the Polytechnic for the development of a highly professional and scientific research activity as one of its basic tasks. In doing so, research activities should, in a systematic and organized manner, be directed predominantly towards developmental and applied research for the needs of the economy and the social community, with a view to their development as a whole.



For this to be achieved, it is necessary to establish institutional preconditions. The empowerment of the Project Office in terms of financing and human resources, the provision of staff training for the purpose of acquiring necessary competences, administrative support and incentives are part of the measures and activities to be implemented in the upcoming period.

In the context of research and related scientific and professional output of employees, as well as the recognition of the Polytechnic of Rijeka, in the next strategic period, it is necessary to implement activities related to the continuous enhancement of international recognition and visibility of the *Journal of the Polytechnic of Rijeka*.

Main Expected Outcomes

- Improvement of cooperation with other higher education institutions, the economy, local community and civil society
- Increasing the amount of incoming and outgoing student mobility
- Increasing the amount of incoming and outgoing mobility of teaching and non-teaching staff
- Increasing the recognition of the *Journal of the Polytechnic of Rijeka*



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