



RIGA TECHNICAL
UNIVERSITY

EXCELLENCE Approach



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Foreword

Quality has always been and will always remain one of the values of Riga Technical University, that is the reason why we pay particular attention to efficiency, relevance and results of research, education and valorization process. Strife for achievements and better results is at the basis of academic education and research strategy, it is the essence of RTU development. Approach to Pursuing Excellence defines principles, stages and methods how to continually improve our performance and to implement long-term plans laid out in our Strategy, setting them as measurable parameters. Standards and Guidelines for Quality Assurance in the European Higher Education Area and RTU activity planning tools, which promote quality, academic freedom, stability, integrity, collaboration and sustainable development, have been used in drawing up this document. RTU Approach to Pursuing Excellence is a shared international experience in promoting quality in education, research, and valorization. This approach offers innovative solutions, efficient implementation and analysis of performance indicators set in RTU Strategy in the long term.

RTU Approach to Pursuing Excellence facilitates reaching the set objectives, improving the quality of education, ensuring excellent research results and good working conditions for RTU team, and that, in its turn, helps the University achieve even better ranking in the international university ratings.



**RTU Rector Academician
Leonīds Ribickis**

Glossary

Stakeholders – a person or a group of persons, including institutions, which have a direct or indirect impact on the decision-making process and activities of an organization, or which can be affected as a result of decisions and activities of the organization.

Quality Management – a strategically grounded, regularly updated and evaluated system based on facts and continuous input data, which implies setting quality policies and quality objectives; it also includes quality planning, quality assurance and quality improvement.

Quality Management System – a set of management policies, procedures, processes, methods and tools required for organization management with regard to quality issues.

Goal – a desired or expected outcome stated in concrete qualitative and quantitative terms, which can be reached in a definite period.

Mission – a concise and clear-cut statement explaining an organization's purpose for being. It informs the stakeholders about the aim of organization existence and what philosophy/principles the organization adopts with regard to the purpose of its existence. Based on its mission, an organization focuses its activities in a definite area.

Vision – a long-term vision of an organization, which is used as an organization's road map while selecting its future courses of action. Mission and Vision provide the basis for setting the strategy and policies of an organization.

European Foundation for Quality Management (EFQM) Model – total quality management system implementation model, which comprises the total of an organization's 'Enabler' and 'Result' criteria. The Model promotes continuous improvement of an organization.

RTU Strategy – a document laying out the development strategy of Riga Technical University and analytical indicators to achieve both long-term and general goals.

1. STAGES AND PRINCIPLES of Excellence Approach

Excellence Approach of Riga Technical University has been drawn up to promote purposeful development of the University as an excellent organization.

RTU Constitution, Strategy, and Quality Assurance Policy are integrated with RTU Excellence Approach (see Fig. 1). It is based on the ESG (*Standards and Guidelines for Quality Assurance in the European Higher Education Area*) developed by the European Association for Quality Assurance in Higher Education and fundamental principles of EFQM (*The European Foundation for Quality Management*) Excellence Model.

Pursuing sustainable development and excellence, special attention is devoted to management and leadership, strategic planning, process approach, product and service development, improvement of cash flow and financial performance indicators, efficiency improvement in all activity areas, promotion of the level of satisfaction of the students, cooperation partners and employees, and increased market coverage.



Figure 1. RTU Approach to Pursuing Excellence.

RTU Constitution defines RTU as a sustainable, internationally recognized research, technology and innovation university, as a European centre for education, scientific research and life-long learning.¹ EFQM Excellence Model is a support tool helping RTU implement its Mission and Vision and reach its strategic goals. Implementation of RTU Excellence Approach based on the principles and structure of EFQM Model gives the University an opportunity to assess its achievements on its way to excellence, to create a unique organizational culture and a system of shared values, to integrate existing and future goals, to promote infrastructure development and maintenance, as well as to ensure efficient management of the University.

¹ Constitution of Riga Technical University
<http://www.rtu.lv/lv/universitate/dokumenti/satversme>

Stages of RTU Excellence Approach

Introducing its approach to pursuing excellence, Riga Technical University has defined the stages of the process leading to excellence. The stages of RTU Excellence Approach (see Fig.2) reflect organizational culture of RTU and serve as a common language that ensures common understanding of the University quality issues, which, in its turn, promotes sustainable development and achievement of the University goals.



Figure 2. Stages of RTU Approach to Pursuing Excellence.

Sustainable Development

RTU acts to promote sustainable development of Latvia, it facilitates achieving the goals of the European Higher Education Area, society, employers, students, alumni, and other stakeholders². The University has integrated the concept of sustainable development within its Strategy, value chain, and processes; it provides the necessary resources to achieve these goals. Sustainable development is inextricably connected with concerns about sustaining the environment and mitigation of negative environmental impacts. Within the framework of RTU Environmental Policy, measurements are taken to optimize the consequences of activities, product life cycle and services, and to mitigate their impact on public health, security and environment.

Mission, Vision and Values

RTU Mission is to ensure internationally competitive high quality scientific research, tertiary education, technology transfer and innovation for the Latvian national economy and society³. In the long term, RTU sees itself as a modern and prestigious university, internationally recognized as the leading university of science and innovation in the Baltic States. RTU Mission and Vision allow introducing productive changes in the sustainable development of the University staying committed to its values: quality, academic freedom, sustainable development, integrity, cooperation and stability⁴.

² Quality Assurance Policy of Riga Technical University

³ Strategy of Riga Technical University

⁴ Year book of Riga Technical University 2014/2015

Goals

Riga Technical University has set three main goals: high quality study process, excellence in research and sustainable innovation³. University administration promotes unity and solidarity, creating an environment where employees, students and other stakeholders get purposefully involved in successful achievement of the goals².

Strategy

The main premise of RTU Strategy is to ensure implementation of the goals of the National Development Plan, as RTU is a cornerstone of the development of Latvia, which ensures education and training of specialists necessary for the Latvian national economy and development of new products and services, serving as a basis for sustainable growth of Latvia³.

Systematic, Process-Oriented Action

Implementation of RTU Excellence Approach is based on the process-oriented action; it includes a clear sequence of the processes and their interaction². Pursuing excellence, special attention is paid to process planning, definition of process aims and their interaction analysis. RTU has developed criteria and methods to ensure efficient process execution and management.

Process and Results Analysis

Analysis of processes and results is conducted taking into consideration that this stage in pursuing excellence is a tool of activity, administration and resource management, which promotes development of innovations at the University. University activities and application of resources are considered and managed as a set of processes to reach the desired outcome as efficiently as possible². RTU draws up quality reports based on analysis of processes and their results.

RTU Action Plan

Based on the regularly conducted self-assessment of the University efficiency and recognition of the needs of stakeholders, RTU develops an Action Plan, which allows defining objectives for continual improvement of the University performance. Action Plan is based on RTU Mission, Vision, strategic goals, priorities and values.

Self-Assessment of University Performance Efficiency

Considering self-assessment of the University performance efficiency, RTU improves good governance principles and adopts good management practice. This self-assessment helps identify the areas that need improvement, carry on continuous University advancement and, accordingly, monitor progress in the long term.

Continual Improvement

Strategic University vision, analyzed operational processes, personnel involvement and other factors promote RTU development. Continual identification, implementation and monitoring of improvements are promoted in accordance with the University priorities, thus facilitating improvement of the processes, system and results, as well as optimization of University activities in the changing environment².

Integration of the Principles of EFQM Excellence Model into RTU Excellence Approach

The principles defined in the EFQM Excellence Model and various higher education and quality standards are horizontally integrated with the stages of RTU Excellence Approach. These principles characterize the approach to pursuing excellence and sustainable development that organizations adopt⁵ (see Fig. 3).



Figure 3.
Integration of the principles of EFQM Excellence Model in RTU Approach to Pursuing Excellence.

Facilitating Acquisition of Knowledge and Skills by Students

Strategic development plan is drawn up and competitive advantages are developed considering the needs and requirements of the current and future students. RTU maintains dialogue with the students and promotes their involvement in organization management and development of innovative products and services.

⁵ The European Foundation for Quality Management. EFQM Excellence Model 2013. Brussels: EFQM, 2013.

Organizational Efficiency

Efficient university governance ensures development and implementation of modern education and research process.³ Analysis of the current operation performance trends provides the basis for organizational efficiency development. Cooperation with RTU partners is extremely important in order to achieve common good, increase their involvement in the university governance by investing their knowledge and resources to promote continual development of RTU.

Creativity and Innovation

RTU adopts a structured approach to generation of ideas, development, innovation and setting clear goals. Valorization strategy is implemented using knowledge in creation of ideas and innovations, stimulating involvement of the stakeholders, providing the necessary resources, as well as facilitating development of competences and cooperation networks.

Leadership with Vision, Inspiration and Integrity

RTU leaders are a good example of integrity, social responsibility and ethical conduct both at the University and beyond, they provide a model inspiring students and cooperation partners with their experience. RTU promotes responsible conduct towards stakeholders and society as a whole.

Managing with Agility

Using the methods for determining environment change in modeling future scenarios, initiating the processes, projects and organizational structures rooted in the Strategy, RTU determines opportunities and threats, effectively and adequately reacts at them, promotes creativity, innovation and progress, facilitates achievement of strategic goals, improves process, project, and organizational flexibility, manages change.

Succeeding through the Talent of People

Employees are a valuable RTU asset; it is a basic prerequisite for integrated achievement of the University and personal employee goals. RTU plans attracting talented people; the desired personal capabilities, competences and characteristics are determined and developed. Employees are involved in decision-making process; efficient communication is established both across and within University units.

Sustaining Outstanding Results

Continuous achievement of sustainable outstanding results meeting the needs of the stakeholders is included as one of the goals in the RTU Strategy. The University systematically reviews, improves and implements the Strategy and its enabling policies, as well as compares them with other organizations.

2.

STRUCTURE

of RTU Excellence Approach

The structure of RTU Excellence Approach has been developed according to nine criteria of EFQM Excellence Model⁵. Reciprocal impact the criteria have on each other promotes continual improvement process. RTU performs self-assessment of efficiency in accordance with the abovementioned criteria, implementing continual quality improvement approach based on sustainable performance results to recognize, assess and control all RTU processes, to identify strengths and areas for improvement, to develop and improve University governance and, consequently, the quality of goods and services provided (see Fig. 4).

The structure of RTU Excellence Approach provides the basis for maintaining high level of University performance, a prerequisite for continual development of RTU to achieve sustainable performance results and excellence.

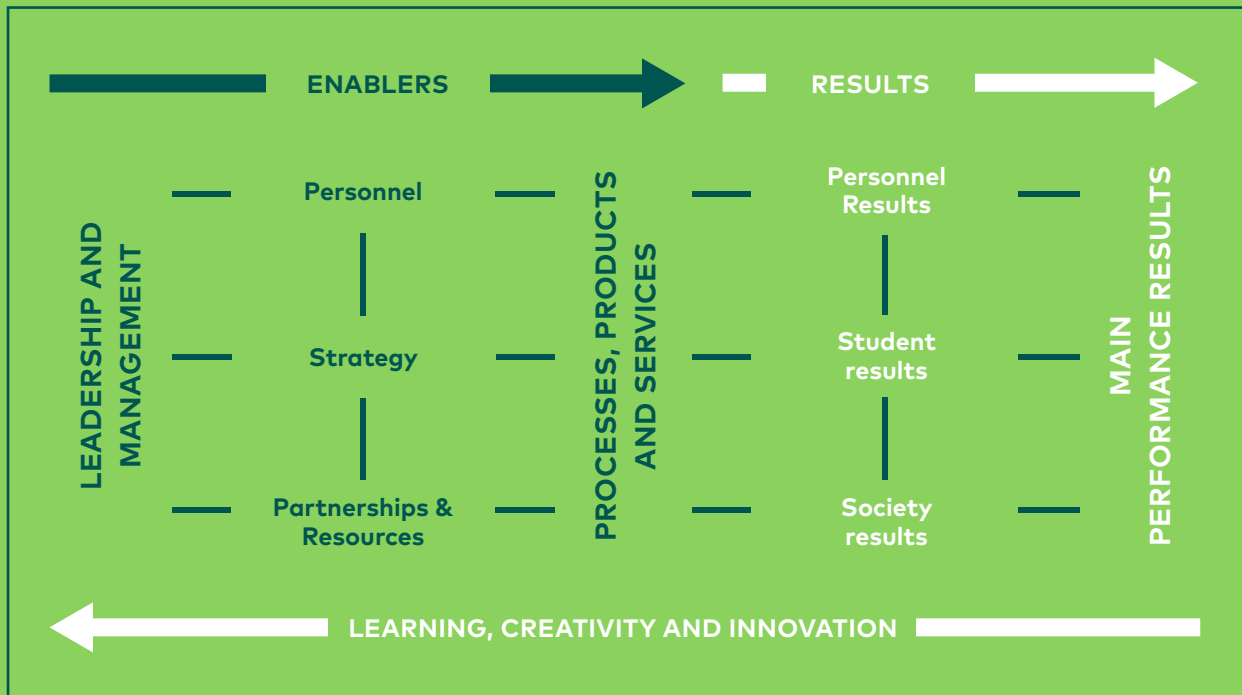


Figure 4. Diagram of RTU processes.

Leadership and Management

Motivation and commitment of the University administration to RTU operational efficiency, organizational improvement and change management is a precondition for introduction of RTU Excellence Approach and efficient quality management². RTU administration and its leaders promote excellence involving University personnel and establishing connection with the stakeholders. Defining Strategy scope and core values, developing the culture of involvement, belonging, advancement and responsibility, facilitating teamwork, RTU administration takes special care to ensure clarity of the achievable goals, unity, work environment development and diversity management.

Personnel

RTU implements strategic and systematic personnel management with an aim to increase personnel motivation and their contribution to achievement of University goals, highlighting professionalism of its employees as one of the main competitive advantages of RTU. RTU Human Resource Development Plan is a planning document, which determines the goals in the field of human resource management that are not specifically addressed in the Strategy, but nevertheless stem from it and enable it⁶.

RTU adopts and observes quality management principles to establish a shared quality culture and to ensure that employees of all RTU units have a common understanding about their contribution to promoting organizational efficiency. RTU involves all employees in continual development of University activities in all areas, improving collaboration and teamwork. A cohesive RTU team helps create a working environment that promotes emotional attachment of the employees to the University.

RTU plans employee career development, career advancement, mobility and research in accordance with RTU Strategy, organizational structure, new technologies and core activity processes⁷.

⁶ Human Resource Development Plan of Riga Technical University

⁷ Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), 2015

Strategy

Strategic planning at RTU is initiated by University administration that determines the University development areas and involves employees at all levels as well as students and RTU Advisory Board in strategic planning.

Developing RTU Strategy, the needs of all stakeholders are recognized, making a future-oriented, socially significant contribution to social development and sustainable growth. RTU strategic planning is based on the analysis of performance indicators of the study process, research, process execution and results obtained in external research, taking into account the expected outcomes determined in the Strategy and the tendencies of the previous years.

In order to achieve strategic goals – high quality study process, excellence in research, sustainable valorization – and to ensure RTU performance quality, the principles of sustainable development are integrated with the Strategy and value system, as well as process approach, allocating the necessary resources³.

Partnership and Resources

RTU administration uses financial Strategy and policies to ensure successful university performance, existence and development. It comprehensively plans, maintains, attracts, coordinates and analyzes all necessary financial, human and material resources. RTU administration conducts financial management taking into consideration potential funding sources and volume of investment to achieve strategic University goals and objectives, reach the expected performance indicators, create and sustain competitiveness and ensure stable achievements in all areas of RTU activities. RTU develops financial planning, control, reporting and revision processes to optimize resource use and to provide for long-term needs. RTU manages the entire body of information, knowledge and technologies to facilitate efficient decision making. Collaboration with partners, suppliers and other stakeholders is carried out in accordance with RTU Strategy, creating appropriate cooperation networks and initiating

relevant policies, activities and processes for efficient collaboration. Recognition of stakeholders and collaboration to jointly solve the emerging problems is an important element of RTU Strategy and performance. RTU promotes accessibility of adequately funded research and development of active support and intensive cooperation with the major industry partners. In order to keep study programs up-to-date and continually improve them, development of new programs is carried out observing the interests of all stakeholders involved in modern cross-disciplinary engineering education. Planning student support measures, RTU provides students with effective and accessible administrative services, learning aids and resources (libraries, educational equipment, IT infrastructure), as well as study course tutors, career advisers, and mentors.

Processes, Products and Services

Process Approach and Collaboration with the Stakeholders

In order to ensure comprehensive and high quality University performance, effectively drive RTU products and services onto the market, RTU recognizes and formulates the necessary activities and the interaction among these activities; responsible persons as well as their competences, scope of their authority and responsibility are determined⁸. Process approach ensures cross-disciplinary cooperation in reaching common strategic goals.

RTU knows its customer groups, maintains and actively supports cooperation with student representatives, cooperation partners, professional associations, student organizations, other higher education institutions, enterprises and organizations. RTU establishes and maintains an open dialogue to discover their needs and react effectively opening the lines for feedback to promote regular long-term cooperation.

High Quality Study Process

RTU pays great attention to internationalization of the study and research process to provide students, researchers and academic personnel with a range of opportunities to study, undergo internship, conduct joint research with foreign partner universities and institutions. Meeting the requirements of the European standards and guidelines with regard to the role of support services in promoting mobility⁷, RTU plans and ensures international mobility of RTU students, academic and administrative personnel within Erasmus+ agreements, as well as informs them about RTU, Latvian and international scholarship competitions. RTU has developed a modern electronic study environment, where all study-related information and user-safe and well-structured data are summarized and stored.

⁸ Regulations of Riga Technical University No. 01000-6/3. Process Description Development Procedure

Excellence in Research

RTU implements high quality fundamental and applied research, providing research intensive services to the public and creating innovations, which yield internationally significant results. As a result of research conducted at RTU various objects of intellectual property are created, most of them are protected with patents or labeled as *know-how*. In case of licensing, use rights are granted to the third parties, while the University retains its rights for inventions.

Sustainable Valorization

To achieve RTU commercialization objectives, RTU has developed a plan to promote University development and advancement in the area of innovation and technology transfer. The plan envisions protection of the intellectual property, promoting understating of significance of intellectual property issues among researchers, academic personnel and students, and facilitating creation of favorable environment conducive to innovations and new technologies. Focusing on the use of knowledge, technologies and competences as well as commercialization of selected research results, the best solutions for cooperation among researchers and the industry are offered.

Personnel Results

RTU plans, manages, develops and employs to full capacity the competences of its staff to implement University Vision, Mission and goals. RTU personnel work to achieve academic, research and technology transfer goals.

Implementation of RTU Mission is ensured by excellent and highly qualified academic personnel that consist of professors, associate professors, assistant professors, lecturers, assistants, leading researchers, researchers, and research assistants. RTU administration and the faculties are concerned with advancement of knowledge and skills of academic, research and technical personnel, as well as ensure sequential generation change, initiating, organizing and conducting high quality scientific research, which is integrated into the study process. RTU is involved in a wide range of international, state and industry research programs.

For many years, RTU demonstrates improving personnel achievement results, which is attested comparing own results with the indicators achieved by personnel of similar universities using national and international ratings. Results achieved by personnel promote comprehensive understanding of leadership issues at the University, organizational structure and the necessity to introduce changes to the structure, experience of definite employee groups, as well as communication and cooperation efficiency⁶.

Based on the research on the degree of satisfaction, target group discussion results, evaluation of comments and complaints, ratings and other sources, RTU develops understanding how its personnel contributes to reaching RTU Strategy implementation results, as well as assesses process efficiency from the point of view of its employees. RTU strives to achieve, maintain and raise the level of performance meeting the requirements and needs of the personnel.

Relevant Main RTU Strategy Indicators:

1. Proportion of foreign guest professors in the total number of academic personnel.
2. Funding attracted to research per one Full Time Equivalent (FTE) of academic personnel.
3. Number of internationally recognized publications / academic personnel FTE.
4. Number of publication citations in the indexed databases (SCOPUS and ISI Web of Science) in the last three years/ number of publications in the indexed databases in the last three years.
5. Number of publications in the indexed databases with foreign co-authors / number of publications in the indexed databases.

Student Results

RTU Quality Assurance Policy helps implement RTU Strategy, research, commercialization, study process and organizational development in order to ensure professionally relevant, research-based and internationally recognized education, training competent and competitive specialists for the Latvian and European labor market. RTU Quality Management System ensures that definite quality goals are set on the basis of RTU Strategy considering student needs; it also helps RTU employees understand how these goals can be reached.

RTU student survey system has been established to ensure study quality control, regularly collecting student opinions about academic personnel, studies and learning outcomes, evaluating student comments and complaints. Study process quality improvement is planned based on the results of student surveys⁷.

External stakeholders evaluate the study process and learning outcomes at the state examinations, during internship and within accreditation process, contributing to improvement of the content of the study programs and their quality.

Regulations and regulatory mechanisms have been developed to facilitate and improve RTU performance, to organize and monitor accreditation and licensing of each study field and study program, and to ensure academic activities. Relevance to the current trends in the represented industries and correspondence to the requirements of the labor market are regularly assessed. Annual study program self-assessment reports are analyzed; the detected drawbacks are eliminated.

Relevant Main RTU Strategy Indicators:

1. Proportion of foreign students in the total number of students.
2. Number of enrolled Master students as proportion of the total number of Bachelor program graduates.
3. Increase in the total number of students.
4. Doctoral degrees awarded per 100 Bachelor degrees awarded.

Society Results

RTU has set reaching excellence as a long-term goal, that is why the University increases its performance efficiency in cooperation with students, alumni, partners and society as a whole and regularly evaluates the progress in achieving strategic goals and own contribution. RTU regularly publishes comprehensible, precise and current information on its activities to inform the public and make contribution to the national economy of Latvia.

For informative purposes, RTU provides information about the implemented study programs and their enrolment criteria, expected learning outcomes, the awarded qualification, and education opportunities available to the students⁷. The catalogue of study programs implemented by RTU is available at RTU home page, each study program is described specifying basic information, annotation, aims, tasks, learning outcomes and their assessment criteria, final examination

procedure, description of future employment opportunities and program curricula.

RTU home page also provides information on the results of the survey of RTU students, graduates, employers, and professional organizations.

Relevant Main RTU Strategy Indicators:

1. Number of agreements with entrepreneurs and other partner institutions per year.
2. Number of established research intensive enterprises, which operate for at least two years.
3. Total number of students.
4. Graduate employment rate within one year of graduation.

Main Performance Results

RTU ensures comprehensive development and continual improvement of core activities, management and supporting processes, evaluates and comprehensively assesses its performance, as well as monitors progress based on the main performance results to control whether RTU Strategy based on the needs and requirements of the main stakeholders, as well as environmental policy, intellectual property management and use policies and the related policies are successfully implemented. RTU main performance goals are included in the Strategy, in turn, the achieved performance results are reflected in annual RTU reports.

RTU regularly publishes current, neutral and objective information, both qualitative and quantitative. Maintaining internal quality management and improvement system, RTU regularly evaluates and reviews study programs involving students, alumni, employers and other stakeholders in order to make sure they reach the expected aims and tasks, meet student and public needs. Evaluating the data obtained analyzing study programs, these programs are improved and revision results are published⁷.

RTU participates in a number of national and international rankings and rating systems, which allow evaluating the achievements in accordance with the international criteria and compare them with other universities in Latvia and in the world. Based on the ranking obtained within various ratings it is possible to make conclusions and set new goals with regard to sustainable development of the study process, research activities and valorization. The main function of RTU Excellence Approach is to improve the main performance indicators each year.

Relevant Main RTU Strategy Indicators:

1. Life-long learning and professional advancement of the involved persons.
2. Number of patents granted per year.
3. Revenue from the sold patents or licenses.
4. Number of agreements signed with entrepreneurs and other partner institutions per year.
5. Revenue from agreements with entrepreneurs and other partner institutions as proportion of RTU research budget.

3.

SUSTAINABLE DEVELOPMENT

Attesting its concerns about sustainable development and desire to contribute to it, Riga Technical University strives to reach seven from 17 goals set by the United Nations in the field of sustainable world development; they are summarized in RTU sustainable development priority goals. RTU considers providing high quality education and promotion of life-long learning the primary sustainable development goal. RTU plans to make its contribution to research on sustainable and modern water technologies, electric power supply systems, infrastructure and urban environment and development of innovations, as well as to facilitate manufacturing and distribution of sustainable products. Careful planning is necessary to reach successful results and to meet the set goals, thus RTU has developed environment monitoring system. The University draws regular environmental reports, where performance with respect to environmental goals is analyzed and suggestions for further improvement are made.

High Quality Education

One of the main objectives of RTU Strategy is to plan and ensure high quality study process, provide students and other stakeholders with knowledge, which will help them meet future goals and promote their talent. RTU offers life-long learning opportunities to everyone. Ensuring high quality education, RTU provides opportunities to students from all over the world.



Clear Water and Sanitary Conditions

Scientific activities of Riga Technical University and research on water treatment provide the basis for sustainable development. RTU researchers are developing new water treatment equipment, which will purify water and make it more accessible in various conditions. Water treatment equipment developed at RTU will be available to individual consumers.



Accessible and Clean Energy

It is difficult to imagine contemporary life and business without electricity, heat energy and fuel, in other words, without power supply. Economic development, world population growth and urbanization impose ever growing requirements on power supply systems. Recognizing that the volume of non-renewable energy sources is gradually decreasing (oil, coal, natural gas, etc.), sustainable electric power supply has become one of the main challenges. RTU researchers working within the research platform "Energy and Environment" develop technologies and solutions for cheap and accessible energy.



Manufacturing, Innovation and Infrastructure

Infrastructure and industrialization are a research priority of Riga Technical University. The scope of research conducted at the University in the field of materials is very wide, ranging from nanoparticle synthesis to large, practically applicable construction calculations, structural strength testing and long-term forecasting.



Sustainable Cities and Communities

Contemporary cities are vivid proof of developments in science and technology, that is why urbanization issues are topical on the global scale, and researchers all around the world address these issues. Most of the world resources are consumed in cities, where the largest part of world population resides. Cities as the drives of economic development, culture and innovation centers attract people to live, study and work there. At the same time, concentration of population poses challenges for specialists in urban development. Sustaining of cultural and historical heritage, dwelling, mobility and infrastructure provision, employment and social issues – this wide range of issues illustrates a complex cross-disciplinary character of urban development.



Responsible Consumption and Production

Research in the field of security and defense is inextricably connected with the state interests; therefore active collaboration with state governance structures is vital. RTU research platform "Security and Defense" has been established to promote cross-disciplinary research in the fields connected with individual and state security. Research areas in the field of defense cover a wide range of problems, as contemporary world threats are complex. Their elimination is a great challenge for researchers and various industries.



Cooperation Goals

In order to achieve the abovementioned goals, Riga Technical University actively cooperates with partners in Latvia and abroad. RTU partner institutions can be found in all continents, they are share common interests and sustainable solutions.



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