

FACULTY OF AUTOMATIC CONTROL, ROBOTICS, AND ELECTRICAL ENGINEERING DEVELOPMENT STRATEGY in the years 2021-2030

The Faculty of Control, Robotics, and Electrical Engineering Development Strategy is closely aligned with *the Development Strategy of Poznan University of Technology in the years 2021-2030* adopted by its Senate on July 07, 2021.

This document describes the mission, vision, and strategic goals defined in the Faculty of Control, Robotics, and Electrical Engineering Development Strategy in the area of education, scientific research, research and development, implementations, personnel and infrastructure development, management development and reputation building in Poland and abroad.

1. The Faculty's mission and vision:

The Faculty of Control, Robotics, and Electrical Engineering aims at providing students pursuing a first-cycle, second-cycle, and postgraduate studies with quality education broadly in the fields of automatic control, robotics, electrical engineering, electronics, and electromobility through scientific research & research and development in cooperation with the current business environment.

The Faculty's mission is to gain recognition in research and development in Poland and abroad, solve new challenges, determine new research and development directions, guarantee high scientific and teaching standards, and act as an active and renowned partner in research and development enterprises pursued in cooperation with the current business environment.

2. The Faculty's strategy and strategic goals:

- a) The Faculty of Control, Robotics, and Electrical Engineering Development Strategy is closely aligned with the Development Strategy of Poznan University of Technology for the years 2021-2030 titled "Unity of Goals and Places – Various Capabilities". It identifies new social and economic challenges and attempts to include the changes that have taken place, are taking place, and will take place in the area of higher education in Poland and the European Union.
- b) The strategic goals of the Faculty of Control, Robotics, and Electrical Engineering are in line with the University's following strategic goals:
 - Educating students in a way that prepares them to work and function in a knowledge-based society,
 - Attaining a high level of standards in research & research and development,
 - Building the Faculty's reputation as student-friendly and open to the social and economic environment,
 - Managing human resources efficiently and effectively,
 - Using the state-of-the-art infrastructure efficiently,
 - Cooperating with a broader economic and industrial environment.

- ***Educating students in a way that prepares them to work and function in a knowledge-based society***

The Faculty of Automatic Control, Robotics, and Electrical Engineering provides students with education in line with the Poznan University of Technology's current strategy. The Faculty offers studies in four fields: Automatic Control and Robotics, Electromobility, Electrical Engineering, and Technical Mathematics. Moreover, students of the Faculty can start practical studies. Its highly specialised didactic staff provides students with the knowledge that enables them to find employment in renowned national and international companies and other economic entities as well as scientific and research and development facilities. The Faculty aims at equipping students with knowledge and developing the competences that they need. Students are also supported to consolidate their independent learning habits, acquire collaboration skills, develop a professional and diligent approach to the tasks that they are given, solve technical problems, as well as develop their creativity and focus on the environment.

One of the Faculty's most important education goals for the next couple of years is to attract the best talents and to maintain the number of full-time students at a level that matches its potential. At the same time it wishes to continue to offer a high level of education. It is assumed that this will help develop the Faculty's highly qualified teaching staff.

Due to the fact that the educational offer and the programme of studies are constantly enhanced and updated, the Faculty's aim is to continue to raise the attractiveness and the level of education in the field of studies, including postgraduate studies.

The Faculty will strive to support the development of student scientific circles concentrated on students' scientific and technical interests and activities. It is planned that supervisors of student scientific circles will also be appreciated for their work: the time that they spend helping students will be included in their teaching load or they will be provided with incentive bonuses.

The Faculty will aim at making its fields of study more international by specifically ensuring that some of them will be taught in English. The Faculty will support and promote student exchange programmes with universities abroad as part of the Erasmus + programme.

The Faculty will strive to make its educational offer as modern and as relevant to the current economic, market, labour, and social needs as possible through active cooperation with the Council of External Stakeholders and employers. One of its most important tasks will be to organize promotional events with a view to encouraging school leavers to take up studies at **the Faculty of Automatic Control, Robotics, and Electrical Engineering**.

- ***Attaining a high level of standards in research & research and development***

The Faculty of Automatic Control, Robotics, and Electrical Engineering will endeavour to make sure that it integrates and uses efficiently the scientific and research competences of the teaching staff of the Faculty of Electrical Engineering and the Faculty of Computing combined after the University was reorganized in 2019. The Faculty of Electrical Engineering has been renamed and now is called the Faculty of Automatic Control, Robotics, and Electrical Engineering. The aim of this will be to enhance its research potential and quality of work. The most important tasks here will

include developing new, leading research directions, increasing the effectiveness of applying for grants and projects in Poland and together with national economic partners, largely from the Wielkopolska region. The Faculty will also attempt to establish close scientific cooperation with leading institutions in Europe, which will enhance the possibility of it receiving research grants from the prestigious agenda ERC. The Faculty will focus particular attention on conducting high-quality research in the area of applications and development as well as using their results for the benefit of the industry and economy.

The Faculty of Automatic Control, Robotics, and Electrical Engineering aims to receive the **A** category in the coming scientific activity assessment in 2022, and maintain it in the long run in the field of *Automatic Control, Robotics, and Electrical Engineering*. To have this achieved, the Faculty will support its scientific staff at every level and make every effort to acquire the highest parametric assessment result for Automatic Control, Robotics, and Electrical Engineering through:

- Increasing the number of publications among researchers and scientific researchers at the Faculty with at least 100 points (*according to the Polish Ministry of Science and Education's scale*) in at least 75% of all publications authored by those teaching Automatic Control, Robotics, and Electrical Engineering,
- Acquiring new finance to spend on scientific and research and development research from outside the university,
- Patenting innovative engineering and technical solutions and creating conditions enabling their results to be used in the industry,
- Promoting and supporting the Faculty's employees to obtain high results of the aforementioned activities.

The above aims will be realized thanks to the Faculty implementing three key mechanisms. The first will consist in developing a clear and effective incentive system for those that carry out their scientific and didactic activities efficiently. The second will revolve around aligning teaching content with the current research and research and development activities in order to increase students' and doctors' engagement in research in Automatic Control, Robotics, and Electrical Engineering. The third mechanism will consist in rationalizing didactic and organisational load of those teachers that are active in the Faculty's research.

● ***Building the Faculty's reputation as student-friendly and open to the social and economic environment***

In order to achieve a sustained and established position in the national and European higher education space, the Faculty will better promote its image, educational offer, scientific achievements and cooperation with the economy and society by fulfilling its detailed objectives:

- Promoting the Faculty's name and logotype in the community and abroad,
- Promoting the Faculty's scientific research results and innovative solutions with the help of local companies and authorities,
- Establishing new and maintaining current relations with media, the association of PUT graduates, and presence in social media,

- Participating in educational symposiums, conferences, fairs, and exhibitions and regional and national meetings on a scientific, economic, and local government level,
- Organising international and national symposiums and conferences,
- Organising open door and other events at the Faculty,
- Creating partnerships with high schools and local research and development centres,
- Engaging PUT students and graduates in promoting the Faculty as well as scientific and sports activity by attracting sponsors among local entrepreneurs.

- ***Managing human resources efficiently and effectively***

The Faculty's staff is its most valuable asset, therefore its authorities will make every effort to provide its technical workers, administrative staff, research staff, research and didactic staff, and didactic staff with working conditions conducive to the development of professional competences. The Faculty will also strive to provide its entities with efficient technical support of their didactic processes. It is estimated that the number of technical jobs and their effective usage will be coordinated by the Faculty's authorities.

The basic tasks of the **Faculty of Automatic Control, Robotics, and Electrical Engineering** include educating students and conducting scientific research and research and development at a high level. In order to be able to realise the aforementioned tasks, the Faculty needs highly qualified staff comprising of independent scientific employees recognised at home and abroad. For this reason, the Faculty will develop and implement a sustainable system of attracting highly-qualified research and didactic staff to ensure the staff minimum and dynamic development of Automatic Control, Robotics, and Electrical Engineering. Moreover, in order to improve work efficiency, especially research, the Faculty will introduce a transparent incentive system for employees. The introduction of such a system will be accompanied with developing criteria and principles of measuring how the Faculty realises its strategic goals as well as a mechanism of activities correcting the functioning of scientific and didactic teams in case any risks appear while the goals are realised. The last challenge that the Faculty will face in the coming years will be to integrate its employees for example by tightening cooperation between all **institutes** and participating in research activities.

- ***Using the state-of-the-art infrastructure efficiently***

All the Faculty's facilities are found in the Warta Campus. In the coming years, the Faculty will continue its renovation efforts to modernise and enhance didactic rooms, auditoriums, labs, research and didactic staff rooms as well as administrative and technical rooms. Intensive work will be carried out on the infrastructure facilitating remote learning.

If a technical university wants to provide efficient education, it needs to organise and maintain well-equipped labs. For this reason, the Faculty will make sure its labs are provided with modern measurement and research apparatuses and lab stations meet modern technological standards. The Faculty will attempt to modernize computer stations in its labs so that they comply to the latest

standards and allow using advanced simulation and calculation platforms for engineering and research uses. Taking care of the infrastructure elements mentioned above will make it possible to offer education to engineers and masters of science that prepares them well to take up employment. Maintaining and developing state-of-the art infrastructure is one of the most cost-intensive enterprises for the Faculty, therefore its authorities will take appropriate steps to acquire national and EU funds to invest in its educational and research infrastructure.

- ***Cooperating with a broader economic and industrial environment***

The Faculty of Automatic Control, Robotics, and Electrical Engineering will strive to maintain and search for new contacts with the industrial, economic, and services sectors. This should happen for example through promoting up-to-date offers of cooperation with the industry based on current research results developed by the Faculty. The Faculty's existing *Cooperation Offer* will be extended to include the latest solutions obtained as a result of research activities carried out by the Faculty. Moreover, the Faculty's authorities will make every effort to increase transfer of competitive engineering, technical, and technological solutions to be applied in the industry. Such solutions should be transferred especially to the local economic sector.

The Faculty will aim at increasing *industrial* competences of its employees through enabling them to take part in industrial internships, which will make it possible to facilitate research and development cooperation with local and national third parties and include the acquired knowledge into the didactic process. Such intensification of industrial research and development should further aim to continue to develop its research staff, increase the number of new grants and implement the Faculty's innovative solutions into the industry.

The Faculty of Automatic Control, Robotics, and Electrical Engineering plans to establish a new Council of External Stakeholders comprising only those associated with the economic sector. The Council will be tasked with providing the Faculty's authorities with advice and support in the area of cooperation between the Faculty and the social and economic environment, support to transfer new technologies and solutions, suggestions of new research directions with the current needs of the region in mind, as well as advice in the area of updating teaching content associated with practical issues, especially for first-cycle students.