

Dedicated training on Environmental aspects of Sustainability

As part of the 'Strategy for the development of the Białystok University of Technology for 2021-2024 with the perspective of extension to 2030'. Białystok University of Technology has developed and started the process of implementing a sustainable development strategy called "My Green University". The actions implemented until 2035 have been designed in response to the global challenges of today's world, which include climate change, air, soil and water pollution, the progressive loss of natural resources, as well as the disappearance of biodiversity. Białystok University of Technology, which for years has been creating solutions and implementing technologies respecting the principles of sustainable development, is aware of the importance of passing on knowledge to the young generations of engineers with an eye to environmental protection. It is a matter of social responsibility, but also of our future. Therefore, by the decision of the University authorities and members of the academic community, we have decided to strive for a dynamic transformation of the University towards the training of personnel programming and creating technological development, while keeping in mind the ecosystem and climate protection.

The "Let it go green" campaign is part of the sustainable development strategy called "My Green University of Technology", which was initiated as part of the "Development Strategy of the Białystok University of Technology for 2021-2024 with a perspective of extension until 2030". The operational goal of this strategy is to create a Green Campus, and the planting campaign is an important part of this goal. The initiative "Let it Green!" was embraced as the guiding principle for our recent endeavor. The entire academic community actively participated in planting vegetation, under the auspices and active involvement of Dr. Marta Kosior-Kazberuk, Assoc. Prof., Eng., who serves as the Rector of the Białystok University of Technology. These new plantings were conducted as part of workshops, complemented by lectures and various other eco-conscious activities led by experts from within our university.

The "Let it Green" campaign exemplifies one of the many proactive measures undertaken by the Białystok University of Technology in pursuit of sustainable development, aligning closely with the institution's overarching goals in climate protection. A primary objective of this initiative was to enhance biodiversity throughout our campus premises.

As part of the "Let it Green" campaign, lectures dedicated to environmental issues were organized. One of the lectures inaugurated a major planting initiative of vegetation on the campus of the Białystok University of Technology, under the patronage and active participation of Dr. Marta Kosior-Kazberuk, Assoc. Prof., Eng., and the Rector of the Białystok University of Technology.

The lectures were conducted by experts from the university and aimed to provide participants with knowledge in the broad field of ecology and landscape architecture. Members of the academic community, the ALO PB community, as well as invited guests, could participate in them. Admission to the events was free and did not require registration.

<https://pb.edu.pl/moja-zielona-politechnika/niech-sie-zieleni/wyklady/>

<https://pb.edu.pl/moja-zielona-politechnika/niech-sie-zieleni/warsztaty/>

<https://zielonyrozwoj.pl/akcja-niech-sie-zieleni-na-politechnice-bialostockiej-budujemy-zielony-kampus/#>



☆ **Implementation of innovative educational tools in the PermaLABS project (Erasmus+)**

Researchers from the Faculty of Management Engineering at Bialystok University of Technology are participating in the international PermaLABS project under the Erasmus+ (KA220-HED) programme, together with partners from the Netherlands, Greece, Croatia, and Portugal. The project aims to incorporate permaculture principles into the education of future managers and to promote socially and environmentally responsible decision-making. A key recent outcome of the project is the launch of the Digital Learning Hub – an online resource centre that supports the practical implementation of sustainable education in academia. The platform offers two main toolkits: a Toolkit for Educators (teaching methods and class scenarios) and a Toolkit for Students (interactive exercises, syllabi, and infographics), all designed to build competencies in conscious management and permaculture-inspired approaches in business education. The PermaLABS initiative enhances both teaching and learning practices and integrates sustainability principles into business and management curricula.

[PermaLABS project](#)

☆ **International CADMD 2025 Conference – intelligent technologies and collaborative research**

From 11 to 12 December 2025, Bialystok University of Technology hosted the 33rd International Conference “CAD In Machinery Design Implementation and Educational Issues” (CADMD 2025), bringing together researchers from across Europe to present current trends in intelligent technologies, robotics, digital systems, and photonics, as well as collaborative research projects. The conference received 49 paper submissions and was conducted in a hybrid format with both in-person and online participation. Representatives of BUT showcased research on ring-geometry optical fibres and a concept of a mobile robot capable of changing its form, developed in cooperation with the University of the Peloponnese. The university also supports translating research into industry applications, including market analysis and commercialization assistance for patent applications. Researchers from Poland, Ukraine, Greece, Spain, Bosnia and Herzegovina, Serbia, and Denmark took part in the event, highlighting the international scope of the conference and BUT’s collaboration with foreign universities.



[International CADMD 2025 Conference](#)

☆ **11th International AMCM 2025 Conference – future of construction and innovations in structures**

From 3–5 December 2025, Bialystok University of Technology hosted the 11th International Conference “Analytical Models and New Concepts in Concrete and Masonry Structures” (AMCM 2025) — a leading scientific event in the field of construction engineering. The conference brought together nearly 100 scientists and practitioners from more than 11 countries who presented research findings and discussed key future challenges such as decarbonisation, production automation, circular economy, and sustainable development in construction. Organised by the Faculty of Civil Engineering and Environmental Sciences of BUT in cooperation with the Polish Association of Civil Engineers and Technicians and the Concrete Structures Section of the Polish Academy of Sciences, the event served as a platform for knowledge exchange and building international research networks. Over the three days, 43 scientific presentations were delivered, and the conference concluded with the preparation of a monograph of abstracts and plans to publish selected papers in high-quality peer-reviewed journals. Some participants also took part in a study visit to Vilnius Gediminas Technical University (Lithuania). The AMCM conference series has a tradition of more than 30 years, and its first edition was held at Bialystok University of Technology in 1993, marking a symbolic return of this prestigious meeting to its place of origin.



11th International AMCM 2025 Conference

☆ **Strengthening international cooperation with Trier University of Applied Sciences (Germany)**

From 3 to 7 November 2025, representatives of Bialystok University of Technology took part in the 16th International Circular Economy Week & Conference organised by Trier University of Applied Sciences in Germany, marking another step in strengthening cooperation between the institutions in circular economy and sustainable development. The programme included study visits to waste management, wastewater treatment and water supply facilities, as well as introductions to the green-energy infrastructure at the Environmental Campus Birkenfeld.

The conference and related seminars covered innovative technologies in wastewater and water treatment, renewable energy systems, energy-efficient buildings and education for sustainability. Meetings with partners from the Institute for Applied Material Flow Management (IfaS) also explored future collaboration on the green transformation of universities and joint research and educational project opportunities. These activities contribute to developing long-term scientific and educational cooperation and enhance the exchange of expertise in circular economy and sustainable development goals.



Strengthening international cooperation with Trier University of Applied Sciences (Germany)

☆ **Educational field trip of Environmental Engineering students to the wastewater treatment plant in Łapy**

On 19 November 2025, undergraduate and graduate students of Environmental Engineering (ISE) from Bialystok University of Technology took part in an educational field trip to the wastewater treatment plant in Łapy. During the visit, students were introduced to mechanical and biological wastewater treatment processes and observed technological equipment and

the treated wastewater discharge point, enhancing their practical knowledge in environmental protection and sanitary engineering. Participants had the opportunity to see real infrastructure and understand the operation of key systems in water and sewage management, supporting their hands-on training and professional competencies. The trip was supported academically and logistically by university lecturers and representatives of the Łapy Water and Sewage Company.



[Educational field trip](#)

☆ **8th Scientific and Technical Conference TEFEN – Energy Efficiency Technologies**

From 18 to 19 September 2025, Bialystok University of Technology hosted the 8th Scientific and Technical Conference TEFEN (Energy Efficiency Technologies), aimed at presenting the latest scientific and technical advancements in energy efficiency, renewable energy sources, and sustainable energy use. The event brought together researchers, entrepreneurs, local government representatives, and students, facilitating the exchange of knowledge and experience between academia and industry practitioners. Participants presented papers and case studies on topics such as energy management systems, energy-efficient building technologies, and innovative methods for optimizing energy consumption. The conference programme also included poster sessions, panel discussions, and presentations of technologies supporting the energy transition and CO₂ emission reduction, with a focus on practical and implementation-ready solutions. The TEFEN conference aligned with the university's efforts to promote energy efficiency, innovation, and to enhance competencies in the area of green economic transformation.



[8th Scientific and Technical Conference TEFEN](#)

☆ **Establishment of BIO4FUTURE – Podlasie Centre for the Protection of Fungal and Plant Diversity**

Bialystok University of Technology, through its Faculty of Civil and Environmental Engineering, has begun implementing the initiative “BIO4FUTURE – Podlasie Centre for the Protection of Fungal and Plant Diversity” as part of a strategic regional project for the conservation and restoration of biodiversity in the Podlasie region. The project is funded by the European Funds for Podlasie 2021-2027 programme with a total budget exceeding PLN 44 million, and the university receives nearly PLN 3.5 million for this task. The BIO4FUTURE centre aims to preserve species and genetic diversity of fungi and plants in the region by establishing and expanding conservation collections, including a fungal culture collection (Fungal Culture Collection), field banks of threatened plant species, and the development of existing herbarium collections of vascular plants and bryophytes. The project also includes educational and outreach activities – plans include publishing scientific monographs on regional fungi, creating a Podlasie Red List of Plants, and organizing workshops, exhibitions, and informational content about the region’s natural heritage. BIO4FUTURE is designed not only to protect local nature but also to strengthen scientific and public awareness of biodiversity, showcasing cooperation between the university, regional institutions, and landscape parks.



[Establishment of BIO4FUTURE](#)

☆ **Bialystok University of Technology as a partner in the “Innovation Ecosystem Agricultural Valley 4.0” project**

Bialystok University of Technology has joined the consortium as a partner in the strategic initiative “Innovation Ecosystem Agricultural Valley 4.0”, led by the Podlaski Fundusz Ekosystem Dolina Rolnicza 4.0 sp. z o.o. The project is worth over PLN 45 million and is funded by the European Regional Development Fund and the state budget. The university contributes research capacity, infrastructure, and expert knowledge. Scientists from the Faculty of Computer Science and the Faculty of Civil and Environmental Engineering will implement data engineering systems based on artificial intelligence and develop innovative solutions to support healthy food production and the modern agri-food sector. Activities under the project include work on natural calf feed and food supply chain tracking systems using blockchain technology. The university also involves students and doctoral researchers, enriching educational programmes and supporting knowledge transfer to practice. The initiative aligns with efforts to foster innovation, strengthen science-business cooperation, and drive regional development in areas such as AgriTech, FoodTech, and intelligent specialisations.



[“Innovation Ecosystem Agricultural Valley 4.0” project](#)

☆ **International Summer School 2025 – intercultural cooperation for sustainable development**

From 30 June to 9 July 2025, Bialystok University of Technology hosted the International Summer School 2025, focused on intercultural cooperation and sustainable development. Students and academic staff from various countries participated, fostering skills related to global environmental and social challenges. The programme included lectures, workshops, and team projects addressing topics such as sustainable development, cultural diversity, and practical tools for international cooperation. Sessions were delivered by experts from partner universities and practitioners involved in Sustainable Development Goals (SDGs) activities. Participants enhanced intercultural communication, teamwork, and project-based skills, and exchanged experiences on implementing sustainable development initiatives in their home countries. The summer school formed part of the university’s strategy for internationalising education, promoting intercultural cooperation, and preparing young professionals to address global socio-environmental challenges.



[International Summer School 2025 – intercultural cooperation for sustainable development](#)

☆ **International summer school on sustainable construction and urban development**

From 30 June to 9 July 2025, Bialystok University of Technology organized an International Summer School focused on sustainable construction and urban development. The event brought together students and academic staff from numerous countries. The programme covered topics such as sustainable building design, urban development, and innovative solutions implemented in different countries, as well as teamwork on real environmental challenges. The activities were practice-oriented and delivered by an international group of experts. Participants also gained knowledge on implementing sustainability principles such as reducing carbon footprint, improving energy efficiency, and designing green urban spaces.



[International summer school on sustainable construction and urban development](#)

☆ **International cooperation in wetland and forest ecosystem protection**

Researchers from Bialystok University of Technology are engaged in activities aimed at protecting wetlands, peatlands, and forest ecosystems in cooperation with partners from Lithuania. The initiative focuses on advancing research and exchanging knowledge in the field of environmental protection and ecosystem conservation. The research includes the analysis of wetland conditions and their importance for climate regulation and biodiversity. Wetlands play a crucial environmental role by storing carbon, filtering water, and supporting biodiversity, yet they are among the most threatened ecosystems worldwide. The activities also involve developing datasets and maps of wetlands, which can support national and European efforts in monitoring greenhouse gas emissions and planning conservation measures. The project contributes to strengthening international scientific cooperation and supports the university's efforts in environmental protection, climate action, and sustainable natural resource management.



International cooperation in wetland and forest ecosystem protection

☆ **Organization of the BioTech Future scientific conference – promotion of biotechnology and innovation**

On 20 May 2025, Bialystok University of Technology hosted the conference “BioTech Future – Biotechnology as the Science of the Future”, addressed to students, graduates, secondary school pupils, and representatives of academia and industry. The aim of the event was to present the latest trends in biotechnology and to promote biotechnology as a field of study and a future career path. The programme included expert lectures, a poster session presenting students’ research results, a panel discussion on career paths, and a competition for the best theses. The conference provided a platform for knowledge exchange between academia and the socio-economic environment, while also enabling networking and promoting science among young people. The initiative supports the university’s activities in fostering innovation, strengthening cooperation with industry, and developing education in modern technologies and the bioeconomy sector.



Organization of the BioTech Future scientific conference – promotion of biotechnology and innovation

☆ **Educational activities in green infrastructure in construction**

On 19 May 2025, Bialystok University of Technology hosted a certified training on the design, construction, and supervision of green roofs, addressed to students, academic staff, and professionals such as architects and designers. The aim of the training was to provide practical knowledge on green infrastructure solutions and to enhance participants’ competencies in implementing environmentally sustainable construction projects. The program covered both general topics (functions, benefits, and types of green roofs) and technical aspects related to their structure, layers, and proper execution. The training highlighted the role of green roofs in climate change adaptation, including rainwater retention, air quality improvement, and reduction of urban heat. The initiative formed part of a series of professional training activities organized by the university in cooperation with industry organizations, supporting practical education and sustainable development.



[Educational activities in green infrastructure in construction](#)

☆ **Engagement in research projects supporting industrial and energy decarbonization**

Bialystok University of Technology has become a partner in the international project “COMBINE – Coupled Problems for Decarbonization in Industry and Power Generation”, implemented under the Horizon Europe programme (MSCA Doctoral Networks). The project brings together a consortium of academic and industrial partners from several European countries, aiming to develop innovative solutions supporting the decarbonization of industry and the energy sector. Researchers from the university will conduct scientific studies, provide expert support, and contribute to the training of doctoral candidates within an international research framework. The university’s involvement in the project supports energy transition efforts, the development of advanced technologies, and the strengthening of science–industry collaboration in the field of sustainable development.

[Participation in the COMBINE international research project on decarbonization](#)

☆ Training on tree protection in the construction process

On 7 April 2025, Białystok University of Technology organized a training titled “Protection of the underground part of trees in the investment process”, addressed to students, academic staff, and external stakeholders such as designers, public officials, and investors. The aim of the training was to enhance knowledge on protecting trees—especially their root systems—during construction projects, as well as to present legal requirements and modern arboricultural methods. The program covered two main thematic areas: the structure and functioning of tree root systems, and specialized techniques for their protection in urban environments. The sessions were conducted by experts from the Polish Arborists Federation. The initiative forms part of the university’s activities supporting sustainable development and biodiversity protection under the “My Green University” strategy, and contributes to the practical education of students in environmental and landscape architecture fields.



[Jak chronić korzenie drzew na placu budowy? Relacja ze szkolenia z udziałem społeczności akademickiej](#)

☆ Green Footprint of WIZ

On 21 October 2024, the "Green Footprint of WIZ" campaign took place at the Faculty of Engineering Management of Białystok University of Technology. Together, we planted 36 trees on the campus. Participants of the reforestation initiative also received seedlings for their own use. This event was not only an opportunity to contribute to the campus’s green spaces but also served as an educational experience for all attendees. It raised awareness about environmental protection, sustainable practices, and the importance of reforestation, fostering a deeper understanding of the role each individual can play in preserving and improving the natural environment.

[Sosny, graby, jabłonie! Akcja „Zielony ślad WIZ” na Wydziale Inżynierii Zarządzania Politechniki Białostockiej – Strategia Zrównoważonego Rozwoju](#)



☆ **Green Atrium at the Faculty of Mechanical Engineering of Białystok University of Technology**

In October 2024, a modern educational and exhibition atrium was inaugurated at the Faculty of Mechanical Engineering of Białystok University of Technology. Located between buildings A and B of the faculty, this multifunctional space combines educational, recreational, and artistic purposes. The Green Atrium primarily serves students of landscape architecture from the Faculty of Civil Engineering and Environmental Sciences as an educational space, enabling learning in direct contact with nature. Additionally, it functions as an exhibition area for artistic displays—currently featuring sculptures by Stanisław Ostaszewski, a long-time city artist. Access to the atrium is provided through the hall leading to the lecture halls named after Associate Professor Marian Poniatowski, PhD, Eng., and Professor Mieczysław Banach, DSc, PhD, Eng. Before its transformation, this area was covered with grey concrete paving, contributing to excessive urban heat buildup. The redevelopment into a green atrium not only enhanced the aesthetic value of the campus but also improved biodiversity and the local microclimate.

This newly created space aligns with the principles of sustainable development and campus greening, serving as both a relaxation area and a hub for the academic community. The initiative is part of the broader "My Green University of Technology" programme, aimed at developing eco-friendly and user-friendly spaces across the university campus

[Atrium na Wydziale Mechanicznym cieszy oczy studentów i pracowników Politechniki Białostockiej – Strategia Zrównoważonego Rozwoju](#)



☆ **50-Year-Old Pear Tree to Be Preserved at the Heart of Bialystok University of Technology Campus**

The academic community of Bialystok University of Technology has united in efforts to preserve a 50-year-old pear tree growing in the heart of the university campus. Thanks to the engagement of both scientists and students, a series of advanced studies, including a tomographic examination, was conducted to assess the tree's health and structural condition. The research confirmed that the tree remains in good shape and can continue to thrive, provided it receives proper care and maintenance. Experts from the university, supported by students, carried out in-depth analyses to ensure the best possible conservation measures. The decision to preserve the tree aligns with the university's commitment to environmental protection and biodiversity. The pear tree, which has been a silent witness to the university's history for decades, will remain a part of the campus landscape, continuing to provide shade and beauty for future generations.



[Politechnika Białostocka zachowa 50-letnią gruszę w sercu kampusu. Było badanie tomografowe - Politechnika Białostocka Aktualności](#)

☆ **Cyklarium Słoboda – the Laboratory for Happiness Research**

Cyklarium Słoboda is a newly established space on the Białystok University of Technology campus, created in collaboration with the Arsenał Gallery. It serves as a relaxation, rest, and meeting area, located in an informal green space designed to support the coexistence of multiple species—fauna, flora, and humans alike. The name "Słoboda" refers to the historical village that once existed in this location. The project is part of a broader initiative called the Laboratory for Happiness Research, which aims to create environments that foster relaxation and social integration among the academic community and Białystok residents. Cyklarium Słoboda itself will function as a Laboratory for Happiness Research, providing a unique space to study the relationship between nature, art, and human well-being. Inspired by the natural cycle, the design of Cyklarium reflects the rhythms of nature, promoting mindfulness and balance. It stands as a remarkable example of the harmonious fusion of history, nature, and art, offering not only a place for relaxation but also a setting for scientific inquiry into factors that contribute to happiness and life satisfaction.

[Politechnika Białostocka i Galeria Arsenał stworzyły Cyklarium Słoboda na kampusie Politechniki Białostockiej - Politechnika Białostocka Aktualności](#)

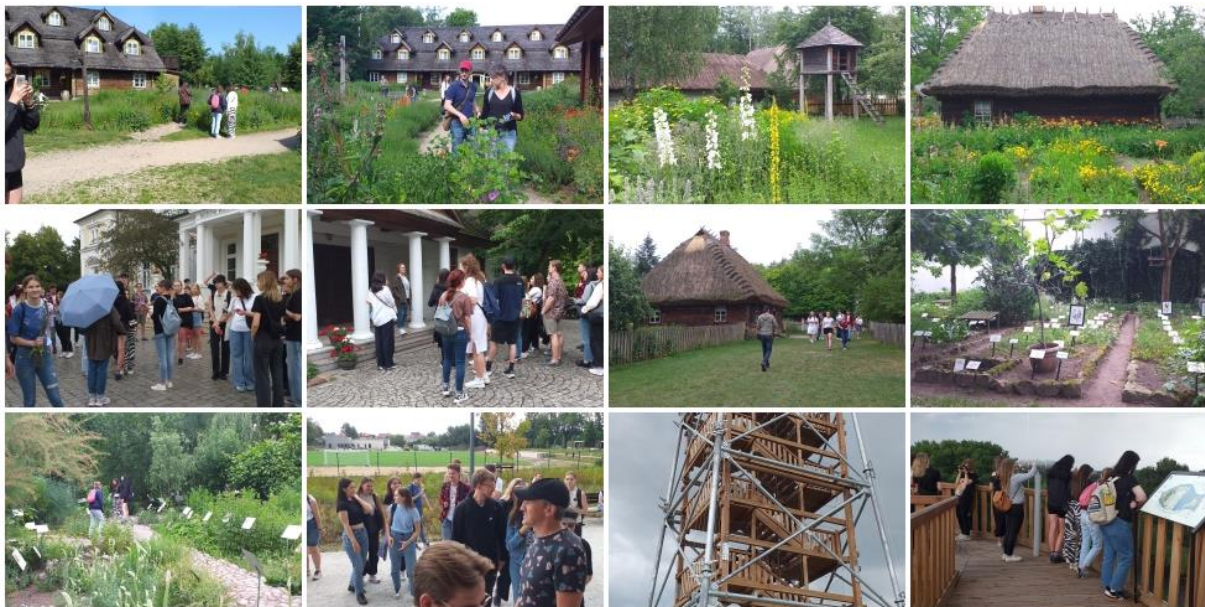


☆ **Study trips**

On 10 June 2024, as part of the VIA CARPATIA Polytechnic Network named after the President of the Republic of Poland, Lech Kaczyński, a study trip was organised for first- and second-degree Landscape Architecture students. The route covered Koryciny and Ciechanowiec. During the trip, students had the opportunity to explore an exceptional collection of popular medicinal plants from Eastern Poland and learn about their applications in herbal medicine and cosmetics. This included visits to Podlaski Ogród Ziołowy (Podlasie Herbal Garden), Dary

Natury – Ziołowy Zakątek (Nature's Gifts – Herbal Nook), and the Museum of Agriculture named after Fr. Krzysztof Kluk in Ciechanowiec. Students also gained knowledge in designing naturalistic flower beds using native herbaceous plants and their application in both rural and urban landscapes. Additionally, the trip provided them with an opportunity to deepen their understanding of rural planning, cultural landscapes, and traditional wooden architecture of Podlasie. One of the most fascinating stops on the tour was the area surrounding the reservoir in Ciechanowiec, where the landscape development was carried out as part of an initiative promoting biodiversity and the natural heritage of southern Podlasie.

[Studenci architektury na wyjeździe studyjnym - Wydział Budownictwa i Nauk o Środowisku PB](#)



☆ **The 1st International Young Researchers Conference**

The 1st International Young Researchers Conference: Ideas, Research, Training, held at the Faculty of Civil Engineering and Environmental Sciences at Białystok University of Technology from 4th to 6th September 2024, showcased the work of young scientists focusing on pro-social and pro-ecological topics. The conference featured 17 presentations, including sessions on sustainable development, energy efficiency, and eco-friendly construction. Notable topics included concrete recycling, sustainable university development, and innovative eco-materials. The event highlighted the practical and technical application of these ideas, emphasizing environmental sustainability and the development of green solutions in various fields of research.

[The 1st International Young Researchers Conference has concluded at the Faculty of Civil Engineering and Environmental Sciences at Białystok University of Technology. - Białystok University of Technology News & Events](#)



☆ International Summer School on Sustainable Buildings

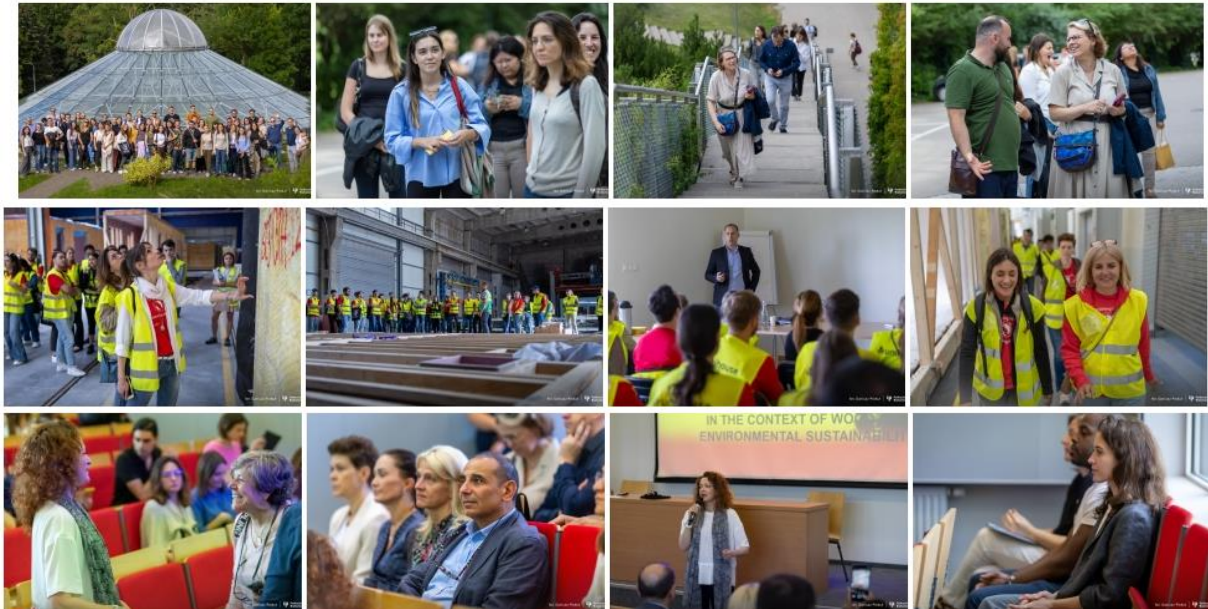
Nineteen students from Spain, Italy, and Lithuania, two Polish students, and nine lecturers from foreign universities participated in the international summer school on the implementation of sustainable solutions in buildings. From 1 to 5 July 2024, the group engaged in on-site sessions at the Faculty of Civil Engineering and Environmental Sciences, Bialystok University of Technology, alongside specialists from the university and academics from partner institutions. The concept of sustainable buildings encompasses a range of activities, processes, and building practices that support the environment economically, socially, and environmentally. The construction industry is key in improving the quality of life, as it is estimated to account for about 40% of energy consumption, 30% of carbon dioxide emissions, and 40% of solid waste production. Researchers at the Faculty of Civil Engineering and Environmental Sciences, Bialystok University of Technology, have been deepening our knowledge in the field of passive construction for years and have made significant achievements. The desire to share their experience attracts young people who, during the Blended Intensive Programme funded under the Erasmus+ Programme, have the opportunity to learn about sustainable buildings from both the design and implementation perspectives—installing appropriate environmental engineering systems, integrating passive architecture into user-friendly spaces, and the financial aspects of the entire process.

Besides attending lectures, laboratory sessions, and design exercises, participants of the summer school at Bialystok University of Technology toured Białystok and Podlasie. They had a study visit to the UNIHOUSE factory in Bielsk Podlaski, a pioneer in the Polish market for producing modern modular buildings with wooden frames. On Thursday afternoon, Marta Orpik and Izabela Karpińska (IROs) organised outdoor games for the students on the BUT campus, providing an excellent opportunity for integration and improving teamwork skills. All interested students could also participate in sports activities organised by Jolanta Zuzda, MD, PhD, Eng.

The Blended Intensive Programme "Effective Solutions for Sustainable Buildings" (ESSB) involved staff from the Faculty of Civil Engineering and Environmental Sciences: Assoc. Prof. Dorota Anna Krawczyk, DSc, PhD, Eng, Beata Biernacka, PhD, Eng, Dorota Gawryluk, PhD, Eng, Arch., Assoc Prof. Marta Kosior-Kazberuk, DSc, PhD, Eng, Beata Sadowska, PhD, Eng, Anna Werner-Juszczuk, PhD, Eng, Tomasz Teleszewski, DSc, PhD, Eng, as well as lecturers from partner universities: University of Bologna (Italy), University of Florence (Italy), Universidad

Politécnica de Madrid (Spain), University of Naples Federico II (Italy) and University of Cordoba (Spain).

[International Summer School on Sustainable Buildings - Bialystok University of Technology News & Events](#)



☆ The "Urban Biodiversity" conference

The conference "Urban Biodiversity" took place on June 20–21, 2024, at the Faculty of Civil Engineering and Environmental Sciences of Białystok University of Technology. The event was co-organized by the City Hall of Białystok, the Faculty of Biology of the University of Białystok, the Łąka Foundation, and the Institute of Forest Sciences of Białystok University of Technology. The goal of the conference was to highlight the importance of biodiversity in cities and discuss the role of urban green spaces, including forests, in climate protection, preserving biodiversity, and providing recreational functions. Topics also addressed the societal expectations of urban forests and ways to strengthen their protective and social roles. During the event, participants had the opportunity to listen to expert lectures, participate in discussions, and share experiences and ideas for improving the quality of the urban environment. The conference provided a platform for exchanging knowledge and experiences between researchers, practitioners, and local government representatives, aiming to promote sustainable urban development and the protection of urban natural resources. The conference was open to all interested parties, and participation was free of charge.

[Konferencja „Różnorodność przyrodnicza miasta” już 20-21 czerwca 2024r. - Wydział Budownictwa i Nauk o Środowisku PB](#)



☆ TEFEN'2024

The 7th edition of the Scientific and Technical Conference "Energy Efficiency Technologies" (TEFEN'2024) took place on June 14, 2024, in Supraśl. The event was organized by Białystok University of Technology and the Kronenberg Institute. The conference focused on safe and innovative technologies related to renewable energy sources (RES), electromobility, and SMART technologies aimed at improving the energy balance of buildings, cities, municipalities, and energy communities. During the event, topics such as energy efficiency improvements in public buildings, the impact of no-cost solutions on electricity consumption in schools, and electro-prosumers in district heating were also discussed. The conference served as a platform for knowledge exchange and experience sharing between scientists, local government representatives, and businesses, promoting sustainable development and innovative solutions in the field of energy efficiency.

[VII Konferencja Naukowo-Techniczna TEFEN](#)



☆ **"The Role of Universities and Scientific Research for Sustainable Regional Development"
Symposium**

In the days of April 22 and 23, 2024, Białystok University of Technology hosted the International Scientific Symposium titled "The Role of Universities and Scientific Research for Sustainable Regional Development." The event was attended by representatives from 14 universities from 6 countries within the Baltic University Programme (BUP).

The purpose of the symposium was to emphasize the importance of universities and scientific research in the process of sustainable development in the Baltic Sea region. During the meeting, participants shared experiences and discussed the challenges associated with this process. The symposium was held under the honorary patronage of the Rector of Białystok University of Technology, Prof. Marta Kosior-Kazberuk, PhD. The event provided an excellent opportunity for establishing cooperation and exchanging knowledge and experiences among universities from the Baltic Sea region. Additionally, representatives from universities in Nigeria and Turkey delivered presentations, enriching the discussions with international perspectives. The event was organized by Białystok University of Technology, with the coordinator being Aniela Staszewska, the Rector's Plenipotentiary for the Baltic University Programme.

[2024 BUP International Scientific Symposium – International Relations Offices](#)



☆ **The 20th Podlasie Festival of Science and Art with Białystok University of Technology**

The 20th Podlasie Festival of Science and Art took place from May 10-19, 2024, with Białystok University of Technology playing an active role in this jubilee event. The festival aimed to popularize science and art in the Podlasie region and was organized by 12 local universities and the Białystok Science and Technology Park. The event featured nearly 500 diverse activities, including workshops, lectures, demonstrations, concerts, and exhibitions. The 20th Podlasie Festival of Science and Art, held from May 10-19, 2024, was a jubilee event aimed at

popularizing science and art in the Podlasie region. The festival involved 12 Podlasie universities and the Białystok Science and Technology Park, offering participants around 500 diverse events, including workshops, lectures, demonstrations, concerts, and exhibitions.

The festival paid particular attention to education for environmental protection. An example of such an event was an exhibition organized by the Faculty of Architecture at Białystok University of Technology, showcasing works by students and faculty. Among the exhibits were design concepts for a modern "student village," aimed at promoting sustainable development and ecological solutions in architecture.

Additionally, on Saturday, May 18, a Family Science Picnic took place at the Municipal Stadium in Białystok, where projects related to ecological technological solutions and environmental protection initiatives were presented. Such events highlight the academic community's commitment to promoting pro-ecological attitudes and environmental education in the region.

[XX Podlaski Festiwal Nauki i Sztuki z Politechniką Białostocką - Politechnika Białostocka Aktualności](#)



☆ **Scientific Conference "Innovations in Ecological Engineering"**

The scientific conference "Innovations in Ecological Engineering" successfully created a platform for discussion among all those interested in ecological engineering, bringing together representatives from both the academic and industrial sectors. The event facilitated in-depth discussions and the presentation of innovative research findings, allowing for a thorough analysis of potential future collaborative actions aimed at climate and environmental protection.

The conference covered scientific and implementation activities in ecological engineering, environmental protection, biotechnology, and the circular economy. It fostered dialogue

among researchers, practitioners, and decision-makers, promoting sustainable solutions and encouraging the development of technologies that improve environmental quality and contribute to climate action. The event proved to be a significant meeting point for exchanging ideas, sharing knowledge, and developing strategies that can have a lasting positive impact on the environment.

[Innovation in Ecological Engineering](#)

☆ **Energy Independence of Buildings as a Key Theme of the University Seminar at the Institute of Architecture and Urban Planning, Faculty of Architecture, Białystok University of Technology**

On April 4, 2024, the University Seminar at the Institute of Architecture and Urban Planning, Faculty of Architecture, Białystok University of Technology, focused on the topic of energy independence of buildings as a key factor in improving public safety in the face of future threats and natural disasters. The seminar addressed the increasing importance of self-sufficient buildings in enhancing resilience against potential crises. Participants were introduced to the potential and scope of research conducted at the Laboratory of Energy-Efficient Architecture and Renewable Energy. The laboratory is dedicated to exploring solutions for creating energy-efficient, sustainable buildings that can function independently of external energy sources, especially in emergency situations. The seminar aimed to highlight the role of innovative architectural designs and renewable energy technologies in ensuring long-term energy security and reducing dependence on traditional energy systems.

[Niezależność energetyczna budynków tematem seminarium uczelnianego w Instytucie Architektury i Urbanistyki na Wydziale Architektury Politechniki Białostockiej - Politechnika Białostocka Aktualności](#)



☆ **Training sessions on Environmental aspects of Sustainability**

One of the strategic objectives of sustainable development of the Bialystok University of Technology is to transform the University into a model space for teaching, in which the Bialystok University of Technology will teach young people to care about the environment, nature's resources and even more strongly build environmental awareness among members of the academic community. The University's sustainable development strategy defines how BUT will meet the current and future challenges of civilisational development and what role it will play in creating a more sustainable 'green' future for the University, the region and the country. We want to achieve our ambitious goals by education - preparing future engineers, managers and leaders of economic and social life for the challenges of sustainable development; increasing the share of sustainable development issues in the didactic process at all levels of academic education.

At the Bialystok University of Technology, various fields of study address topics related to sustainable development. Below are the fields in which "sustainable development" is included in the study programs, either in the field-specific learning outcomes or in the course-specific learning outcomes. We provide the name of the field, the program-specific learning outcomes related to sustainable development, as well as the course names and course-specific learning outcomes related to sustainable development.

The Bialystok University of Technology also offers classes, training sessions, and workshops as part of its curriculum on various courses of study. Both students and staff members can benefit from these activities.

Here is the full list of training sessions on Environmental aspects of Sustainability:

Lp	Name of Department	Subject	Name of the course related to sustainable development	Content
1.	Faculty of Building and Environmental Sciences	Landscape Architecture	Land reclamation	Ways of preventing soil degradation and methods of restoration.
2.	Faculty of Building and Environmental Sciences	Landscape Architecture	Economics and management in landscape architecture	Principles of management of nature conservation forms.
3.	Faculty of Building and Environmental Sciences	Landscape Architecture	Green roofs and green walls	Sustainability. Green roofs as part of sustainable drainage systems in urban areas.
4.	Faculty of Building and Environmental Sciences	Landscape Architecture	Natural basis of landscape design	The structure of the Earth. Endogenous and exogenous processes shaping the Earth's surface. The dependence of relief on geological structure. Water in the environment.

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				Water resources. Catchment area. River systems. Lakes. Wetlands. Measurements in hydrology. Water balance. Groundwater. Climate.
5.	Faculty of Building and Environmental Sciences	Biotechnology	Bioremediation of contaminated sites	Land remediation, with particular emphasis on bioremediation.
6.	Faculty of Building and Environmental Sciences	Biotechnology	Biofuel production technologies	Environmental and economic aspects of biofuel use.
7.	Faculty of Building and Environmental Sciences	Biotechnology	Microbiological waste treatment methods	Biotechnology for a closed loop waste management.
8.	Faculty of Building and Environmental Sciences	Biotechnology	Biological waste gas treatment	Air pollutants, sources, environmental and human impacts. Presentation and detailed discussion of sources of atmospheric gaseous pollutants and methods of reducing and removing these pollutants from waste gases.
9.	Faculty of Building and Environmental Sciences	Biotechnology	Water conservation engineering	Familiarisation with engineering methods of water conservation. To familiarise you with how to assess the impact of selected facilities on water quality.
10.	Faculty of Building and Environmental Sciences	Construction	Special concretes and recycling of concrete structures	Technology and recycling methods for reinforced concrete structures. Technology for the production of concrete structures from recycled materials.
11.	Faculty of Building and Environmental Sciences	Construction	Low-energy construction and energy efficiency in buildings	Evaluation of the energy, economic and environmental efficiency of retrofit measures that reduce energy consumption.

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12.	Faculty of Building and Environmental Sciences	Construction	Modern technology	Ecological material solutions used in building structures.
13.	Faculty of Building and Environmental Sciences	Construction	Building thermal diagnosis and thermomodernisation	Thermomodernisation - principles for planning and carrying out investments. Economic efficiency of heat sources. Possibilities of subsidising thermomodernisation investments and their economic efficiency.
14.	Faculty of Building and Environmental Sciences	BIM	Building operations in BIM terms	Building life cycle including BIM and FM (Facility Management) techniques. BLM (Building Lifecycle Management). Concepts of sustainability of a building and its components, building wear and tear.
15.	Faculty of Building and Environmental Sciences	BIM	Sustainable construction using BIM	Principles of building design and technical equipment in a sustainable development strategy. Building installations in sustainable construction.
16.	Faculty of Building and Environmental Sciences	Civil Engineering	Special concretes and recycling of concrete structures	Demolition and reacycling of used concrete structures; Recycled aggregate; Recycled aggregate concrete
17.	Faculty of Building and Environmental Sciences	Civil Engineering	Low energy buildings and rational use of energy in buildings	Evaluation of the energy, economic and environmental efficiency of retrofit treatments that reduce energy consumption.
18.	Faculty of Building and Environmental Sciences	Thermal power generation	National environmental policy	State environmental policy in the national development management system. Sustainable management of environmental resources.
19.	Faculty of Building and	Environmental Engineering	National ecological policy	State Environmental Policy - objectives and tasks of a systemic nature. Integration of environmental

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	Environmental Sciences			aspects into sectoral policies, activation of the market for environmental activities, protection of the natural heritage and rational use of natural resources.
20.	Faculty of Building and Environmental Sciences	Spatial management	Valorisation of the natural environment	Methods for valuing the natural environment
21.	Faculty of Building and Environmental Sciences	Spatial management	Environmental effects of LSDP implementation	Procedures for integrating environmental concerns into the land-use planning process
22.	Faculty of Building and Environmental Sciences	Spatial management	Environmental Impact Assessments	Procedures for integrating environmental concerns into the investment process.
23.	Faculty of Building and Environmental Sciences	Spatial management	Environmental management system	EN ISO 14001 Model: Plan-Do-Check-Act. Methods for identifying environmental aspects and methods for selecting significant environmental aspects. Introduction to EMAS (EcoManagement and Audit Scheme). Comparative analysis of EMAS with ISO 14001. Costs and benefits of implementation.
24.	Faculty of Building and Environmental Sciences	Spatial management	Fundamentals of building thermal diagnostics	Programmes to reduce energy consumption. Heat exchange of the building with the environment. Contribution of individual factors to the heat balance of a building.
25.	Faculty of Building and Environmental Sciences	Spatial management	Energy and environmental efficiency of thermal upgrading	Methods for assessing the energy and economic efficiency of thermomodernisation projects. Profitability analysis of thermomodernisation undertakings. Assessment of the ecological effects

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				associated with thermomodernisation.
26.	Faculty of Building and Environmental Sciences	Spatial management	Open space planning	Discussion of the solution of planning problems in areas endangered by natural factors, in areas under legal protection, the shaping of development depending on the limiting factors present. Indication of legal and environmental conditions of selected cases in spatial planning.
27.	Faculty of Building and Environmental Sciences	Agricultural and Food Engineering	Biofuel production	Characteristics of the main types of plant biomass. Quality assessment of biofuels.
28.	Faculty of Building and Environmental Sciences	Agricultural and Food Engineering	Energy use of biomass	Legal conditions for the use of biomass in the energy sector. Environmental impact.
29.	Faculty of Building and Environmental Sciences	Agricultural and Food Engineering	Environmental ecology	To familiarise students with the basic concepts: environmental ecology and its elements, pollution, natural resources, and the issues of degradation and protection of the lithosphere, hydrosphere and atmosphere. Causes, effects and basic methods of environmental pollution prevention.
30.	Faculty of Building and Environmental Sciences	Agricultural and Food Engineering	Waste disposal	Directions necessary for the proper functioning of the agro-food industry waste management system taking into account the legal requirements for environmental protection. Basic issues of waste management, methods and ways of waste disposal. Waste management in Poland in relation to state strategy and policy.

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31.	Faculty of Building and Environmental Sciences	Agricultural and Food Engineering	Environmental protection in agriculture	Threats to the environment from agricultural activities: fertilisation, plant protection, animal production, and agri-food processing. Pro-ecological production directions in agriculture. Introduction to environmental protection law. Environmental protection in the investment process. Liability for environmental damage. Public participation in environmental protection procedures.
32.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	Ecological engineering in agricultural production	Modern technologies in agricultural production and their impact on the environment. The ability to prepare action plans to reduce the negative impact of agriculture on the environment. Code of Good Agricultural Practice. Organic farming.
33.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	Alternative energy sources	Organisational issues in alternative energy sources, energy clusters, energy micro-regions. Methods for assessing the energy efficiency of alternative energy sources in food processing and agriculture.
34.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	Precision agriculture and forestry	Organic precision agriculture.
35.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	Agricultural and forestry systems	Sustainable system: ecological and economic objectives, role of crop rotation, conservation tillage, optimal fertilisation, crop protection based on damage thresholds. Sustainable production of agricultural crops. Sustainable production in grassland. Integrated horticultural production. The role of the state in implementing an integrated system. Economic

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				indicators of management in different systems.
36.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	EU rural projects	Impact of the common agricultural policy and cohesion policy on rural development. Funds and programmes supporting cohesion policy. EU and Polish regulations implementing the Common Agricultural Policy. Support instruments of the Rural Development Programme. Principles of financing and type of support for farms and entrepreneurship in rural areas.
37.	Faculty of Building and Environmental Sciences	Agricultural, Food and Forestry Engineering	Ethics in the management of natural resources	Principles of the management of resources and components of animate and inanimate nature in terms of their sustainable use. To teach the administrative procedures for obtaining the legally required permits and decisions in nature resources management. To familiarise students with the basic legal acts regulating the management of environmental resources.
38.	Faculty of Building and Environmental Sciences	Environmental Engineering	Water management and protection	Water resources and water management in Poland and EU countries.
39.	Faculty of Building and Environmental Sciences	Environmental Engineering	Environmental management	National environmental policy, pro-environmental management of the territorial unit and enterprise. Instruments of environmental impact analysis in territorial units and enterprises, environmental management systems - characteristics and requirements.
40.	Faculty of Building and	Environmental Engineering	Economics of water supply and water conservation	Water resources and their use. Environmental and resource costs.

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	Environmental Sciences			Water conservation policy and its instruments.
41.	Faculty of Building and Environmental Sciences	Environmental Engineering	Rationalisation of heat consumption	Legislation on heat efficiency.
42.	Faculty of Building and Environmental Sciences	Environmental Engineering	Alternative energy sources	Legislation on alternative energy sources.
43.	Faculty of Building and Environmental Sciences	Environmental Engineering	Air protection and flue gas cleaning	Legal norms in the protection of the atmosphere. International conventions and protocols limiting emissions. Distribution and transformation of pollutants in the atmosphere. Mechanisms of environmental impact of selected air pollutants. Energetics of the atmosphere.
44.	Faculty of Building and Environmental Sciences	Environmental Engineering	Disposal of water and sewage sludge	Discussion of the basic technological processes of sludge treatment used in wastewater treatment plants. Presentation of legal aspects in relation to Polish, US and EU law. Analysis of the existing state of sludge management in a selected European country and in Poland and the Podlaskie Voivodeship. Ways of final disposal of sludge. Sewage sludge management plans. Discussion of issues related to sludge management arising during water treatment.
45.	Faculty of Building and Environmental Sciences	Forestry	Reclamation of forest areas	Principles and guidelines for the design of reclamation and development.

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46.	Faculty of Building and Environmental Sciences	Forestry	Shaping the forest environment	Sustainable forest management
47.	Faculty of Building and Environmental Sciences	Forestry	Environmental management	Environmental management in the light of the concepts of sustainable and balanced development.
48.	Faculty of Building and Environmental Sciences	Forestry	Nature and forestry education	Different methods of nature and forestry education, with particular emphasis on active education methods
49.	Faculty of Building and Environmental Sciences	Forestry	Renewable energy sources	Investment feasibility and profitability analysis and studies. Environmental analysis.
50.	Faculty of Building and Environmental Sciences	Forestry	Contemporary trends in forestry	Modern silvicultural and forest management technological systems
51.	Faculty of Building and Environmental Sciences	Forestry	Forest education for sustainable development	Sustainable development measures for forest education
52.	Faculty of Building and Environmental Sciences	Forestry	Social conflicts in nature conservation	Principles of nature conservation legislation. Opportunities related to legislation on social conflicts in nature conservation.
53.	Faculty of Management Engineering	tourism and recreation	Protection of the natural environment	Essence of sustainable development, documents and commitments (in particular relating to the environment), environmental protection as an objective of the EU's sustainable development strategy, monitoring of the implementation of sustainable development by order (mainly environmental), by area and

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				by objective - system of sustainable development indicators.
54.	Faculty of Management Engineering	management, 1 st.	Integrated management systems	Environmental management system according to the requirements of the ISO 14000 series of standards.
55.	Faculty of Management Engineering	management, 2 st.	Green economy	Sustainability as the basis of the green economy. The concept, objectives and principles of the green economy. Green economy in international, EU and Polish environmental policy. Main areas of green economy: sustainable energy and renewable energy sources, waste recycling, sustainable production and consumption, sustainable transport, sustainable agriculture. Green economy indicators. Financing of green economy activities.
56.	Faculty of Management Engineering	management, 2 st.	Low-emission economy	Links between sustainable development, the green economy and the low carbon economy. The problem of climate change as a cause of low-carbon economy development. Low-carbon economy in international, EU and Polish environmental policy. Renewable energy sources and energy efficiency in various sectors of the economy. Financing low-emission economy measures.
57.	Faculty of Management Engineering	logistics, 1 st.	Commodities	The environmental impact of overproduction.
58.	Faculty of Management Engineering	production management and engineering, 1 st.	Ecology of natural resources and environmental protection	Relationships between the environment and the economy. The environment as an object of use and protection: basic terms and problems. A systemic approach to environmental issues. The problem of the limitation

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				of natural resources. Economic activity and the functioning of ecosystems. The essence, features and causes of the contemporary environmental crisis. The state of the global environment. Motives and concepts of environmental protection. Main directions of counteracting the ecological crisis (economics, politics, technology).
59.	Faculty of Management Engineering	production management and engineering, 1 st.	Technology basics	Energy efficiency. Consideration of environmental values in the use of specific technological solutions in business operations.
60.	Faculty of Management Engineering	production management and engineering, 1 st.	Industrial site management	Planning of industrial activities - environmental impact assessments of projects. Monitoring of the impact of industrial activities on the anthroposphere and the natural environment. Greenery on industrial sites. Degraded areas: legal basis, classification, qualification systems for restoring degraded land to socio-economic circulation. Revitalisation of post-industrial areas.
61.	Faculty of Management Engineering	production management and engineering, 1 st.	Technologies for producing energy from renewable sources	Threats from the use of fossil fuels: depletion - oil peak problem and similar, global warming possible causes and attempts to reduce the impact. Hydrogen as a motor fuel. Use of solar energy. Conversion to thermal energy - low power solar collectors (distributed sources), high power high temperature collectors. Photovoltaic converters. Biomass utilisation. Types of biomass: organic waste (plant and animal origin), purpose-grown plants. Biomass conversion technologies: direct combustion, gasification,

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				gasification with chemical synthesis, fermentation, other biotechnological methods. Types of biomass-derived fuels: solid fuels with different conversion rates, liquid fuels, gaseous fuels. Wind energy, water fall, tidal energy. Geothermal sources
62.	Faculty of Information Technology	Informatics	Security of computer networks	Methods for securing computer systems and networks and testing them for security. Cryptographic methods to ensure the confidentiality and trustworthiness of digital data.
63.	Faculty of Information Technology	Computer Science (specialisation: Software Engineering; Intelligent Internet Systems)	Internet of things	The Internet of Things concept. Applied IoT platforms and environments. Standards. Testing and self-testing. Wired interfaces. Wireless interfaces. Low power design.
64.	Faculty of Information Technology	Computer Science (specialisation: Software Engineering; Intelligent Internet Systems)	IT project management	The importance of certification and ethics and showcasing the development of project management software.
65.	Faculty of Information Technology	Computer Science (specialisation: Software Engineering; Intelligent Internet Systems)	Selected distributed systems	Information storage in distributed systems: distributed file systems, databases. Security in distributed systems.

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66.	Faculty of Electrical Engineering	Electrical engineering	New trends in AEiE technologies (ES1F1008)	Presentation in relation to the field of automation, electronics and electrical engineering: state of the art, opportunities for innovative technology development, national and international market potential, innovative companies and start-ups. Energy transition and new energy networks: reasons, directions, assessment of staffing needs.
67.	Faculty of Electrical Engineering	Electrical engineering	Materials Engineering (ES1F2015)	Modern materials used in electrotechnical structures and systems. Presentation of the current state of development and research in the field of materials engineering in electrical engineering, including lighting technology.
68.	Faculty of Electrical Engineering	Electrical engineering	Renewable Energy Systems 1 (ES1E6209)	Environmental, energy efficiency and RES legislation and regulations. Basic technologies for the use of renewable energy. Basic technologies for the use of renewable energy resources.
69.	Faculty of Electrical Engineering	Electrical engineering	Intelligent electrical installations (ES1E6210)	Education of knowledge of energy efficiency of Faculty of Electrical Engineering installations equipped with automation and control.
70.	Faculty of Electrical Engineering	Electrical engineering	Renewable Energy Systems 2 (ES1E7218)	To familiarise students with the basic technologies of renewable energy sources. To teach the principles of selection and calculation of RES resources and energy yield in RES systems.
71.	Faculty of Electrical Engineering	Electrical engineering	Economics (ES1E7951)	Sustainable development. Principles of sustainable development in energy. Indicators of sustainable development.

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72.	Faculty of Electrical Engineering	Electrical engineering	Selected topics in lighting technology 1 (ES2E100007)	Photobiological safety of light sources. Light pollution.
73.	Faculty of Electrical Engineering	Ecoenergetics	Economics of investment in eco-energy (EKS1C1802)	Legal environment for investing in renewable energy sources. Governance of the energy sector in Poland. Legal and economic constraints on the location of RES.
74.	Faculty of Electrical Engineering	Ecoenergetics	Renewable energy sources (EKS1C2013)	Methods of estimating renewable energy resources. Effects of meteorological conditions on the operation of renewable energy resources.
75.	Faculty of Electrical Engineering	Ecoenergetics	Methods of electricity generation (EKS1C3021)	The role of different types of power plants in the electricity system. Development trends of fossil fuel power plants.
76.	Faculty of Electrical Engineering	Ecoenergetics	Fundamentals of Electrical Networks (EKS1C3022)	Impact of electric power transmission systems on the human body and the environment.
77.	Faculty of Electrical Engineering	Ecoenergetics	Biofuel production technologies (EKS1C4024)	Familiarisation with issues relating to the environmental effects of biofuel use.
78.	Faculty of Electrical Engineering	Ecoenergetics	Fuels and combustion (EKS1C4029)	Characteristics of solid, liquid and gaseous fuel combustion. Emissions of pollutants and methods to reduce them.
79.	Faculty of Electrical Engineering	Ecoenergetics	Environmental protection in the energy industry (EKS1C4030)	Types of pollution produced by different energy sources. Impact of pollutants on human health and plants.
80.	Faculty of Electrical Engineering	Ecoenergetics	Legal and economic problems of investing in RES (EKS1C6110)	Current status of the use of renewable energy sources and characteristics of the legal and financial environment. Legislation governing the use of energy from renewable

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				sources, administrative procedures and support mechanisms, including EU funds.
81.	Faculty of Electrical Engineering	Ecoenergetics	Energy efficiency and intelligent lighting systems (EKS1C7055)	Low-energy installations and systems. Improving the energy balance of the system using modern installation solutions.
82.	Faculty of Electrical Engineering	Electrical engineering	Selected issues in lighting technology (EZ2E100007)	Photobiological safety of light sources and the effect of ambient light pollution.
83.	Faculty of Electrical Engineering	Electronics and telecommunications	Innovations in the electronics industry (TZ2E300083)	Presentation of modern technological and scientific solutions used in the electronics industry in relation to the production process and their impact on economic development.
84.	Faculty of Electrical Engineering	Electronics and telecommunications	Design of professional electronic apparatus (TZ2E300103)	Electronic systems for the early detection of environmental hazards.
85.	Faculty of Electrical Engineering	Electrical engineering - studies with a practical profile	Fundamentals of Electrical Power Engineering 1 (EDS1B4022)	Electricity generation. Energy transformations in different types of power plants. Renewable energy sources.
86.	Faculty of Electrical Engineering	Electrical engineering - studies with a practical profile	Power electronics (EDS1B4025)	AC/DC converter working with a wind generator and photovoltaic panels, AC/DC converter working with photovoltaic panels and energy storage.
87.	Faculty of Electrical Engineering	Electrical engineering - studies with a practical profile	Vehicle electronics systems (EDS1B5034)	Hybrid and electric drive systems.

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88.	Faculty of Electrical Engineering	Automation and robotics	Intelligent automation systems (MYARS26001)	Smart Grid electricity system. Smart "metering". Smart Metering. Internet of Things (IoT). Smart city. Smart building systems. Smart building control technologies.
89.	Faculty of Electrical Engineering	Automatic Control and Robotics (studies conducted in English)	Environmental management and ecology (MYARS01013)	The concept of sustainable development as the basis for environmental management. Environmental management system in Poland. Selected areas of environmental management (e.g. waste management, water and sewage management, climate protection, protection of biodiversity).
90.	Faculty of Electrical Engineering	Automatic Control and Robotics (studies conducted in English)	Automation systems (MYAR2S22006)	Advantages of introducing automation of service, production, industrial processes and automation of buildings. The use of internet technologies in the automation of homes, cities, enterprises, energy systems, measurement systems, environmental monitoring processes and risk monitoring.
91.	Faculty of Electrical Engineering	Erasmus	Grid Integration of Renewable Energy (IS-FEE-10060W)	The students (...) learn integration of renewable energy into the grid and its challenges and opportunities. This module will also discuss fundamentals of smart grid system, smart metering, real-time pricing, modelling, and control of renewable and green energy
92.	Faculty of Electrical Engineering	Erasmus	Renewable Energy Technologies (IS-FEE-10062W)	This module will introduce students to various renewable energy resources and technologies used for harnessing them. Students will also be able to understand introductory concepts of economics surrounding renewable energy system.

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93.	Department of Architecture	Architecture	Design theory and landscape protection	<p>Basic concepts of landscape design and conservation. Natural and cultural landscapes; their development and transformation.</p> <p>Landscape studies. Nature and landscape units. Elements of landscape architecture composition. Types and forms in landscape architecture. Landscape interiors and their elements. Historical and contemporary landscapes. Landscape diversity. Threats and principles of protection. Main threats and causes of landscape degradation.</p> <p>Protection and shaping of contemporary landscapes. System of protected areas. Landscape parks.</p> <p>Shaping the city's green space system, creating ecological tracts, airing strips.</p> <p>Green areas forming spatial urban and architectural arrangements</p>
94.	Department of Architecture	Architecture	Landscaping and green areas	Development of the design of the landscaping facility preceded by a greenery inventory and the necessary analyses resulting from the findings of studies and development plans.
95.	Department of Architecture	Architecture	Architectural design 4 - Energy efficient architecture	<p>Design of a climate-smart building with energy-saving technologies and solutions: insulation, collectors, photovoltaics, turbines, heat pumps, recuperators, lighting systems, heliostats, ventilated double facades, heat accumulators, control systems.</p> <p>Issues of comfort and hygiene of building interiors, environmental relationships, energy loss and gain balance, energy zoning. Basic</p>

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				economics of energy efficient solutions.
96.	Department of Architecture	Architecture	Studies and plans spatial development: 1a - areas of intensive development	Spatial design principles areas with intensive spatial development, an understanding of the environmental conditions and forms of protection of valuable areas, as well as the possibilities and extent of necessary transformations.
97.	Department of Architecture	Architecture	Thesis	Studies and analyses of structural relationships, natural or urban context, 'case studies', solving architectural, urban, functional, technical and construction problems.
98.	Faculty of Mechanical Engineering	Mechanics and mechanical engineering	Operation of thermal power systems	Environmental impact of refrigerants and relevant environmental regulations, Environmentally friendly handling of the system and refrigerant during installation, maintenance, servicing or recovery of the refrigerant, National system for the marketing of COCs and F-gases, registration of equipment, responsibilities of the operator and personnel operating HVACR equipment.
99.	Faculty of Mechanical Engineering	mechanics and mechanical engineering	Polygeneration systems and renewable energy sources	Technologies to improve the efficiency of steam power plants: cycle carnation, interstage superheating. Engine room efficiency. Apparatus equipment of steam power plants. Elementary calculations of the Rankine cycle including turbine efficiency. Calculation of power plant cycle with interstage superheat. Gas engine room Brayton cycle calculation. Calculation of

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				components of a steam power plant regeneration system.