

CRACOW UNIVERSITY OF TECHNOLOGY

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Tadeusz Kościuszko

CRACOW
UNIVERSITY
OF TECHNOLOGY



THE ACADEMIC YEAR 2000/2001

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Rector
Professor Kazimierz J. Flaga, PhD, DSc

Past and present of the Cracow University of Technology

In January 1945, just after World War II had ended, a group of prominent scientists and businessmen of Cracow decided to implement a century-long plan to establish a polytechnic in the city. The Mining Academy, which was founded in 1919, educated prospective employees mainly for heavy industry, mining and metallurgy. The group was likely to succeed in their attempts since Cracow was a scientific centre which had not suffered much damage during the war and therefore became home to many prominent professors of Lvov Polytechnic, after Lvov was no longer a Polish city, and to many professors from Warsaw which was completely ruined due to the tragic uprising.

As a result, the Faculties of Architecture, Civil Engineering, Water Engineering and Communication were established as branches of the Mining Academy in the academic year 1945/46. They were fully autonomous. The vice-rector of the Mining Academy took up the duties of the rector.

In 1954, the faculties, which were autonomous both in terms of administration and finance, were transformed into a separate higher education institution called The Cracow Polytechnic. The event was crucial for the future development of the school. In 1976, the Council of Ministers gave the school its present name - Tadeusz Kościuszko University of Technology in Cracow. Tadeusz Kościuszko, the patron of the school, was a Polish and American hero and also an outstanding engineer in the field of fortification construction, water engineering and road building. His particular links with Cracow date back to the 1794 uprising he organised in the city.

During the 54 years of its existence, the number of the school's graduates has totalled 40 000, including 25 000 with MSc Engineer and 15 000 with BSc Eng. degrees. DSc degrees have been obtained by 1512 people while 485 people have been awarded the doctor habilitatus title. A large number of graduates occupy prominent positions in the economic and social life both in Poland and abroad. Their professional and moral standards are very high and they are the pride of the university.

At present, the Cracow University of Technology comprises 7 faculties which run 12 degree courses attended by 13 500 students. 8500 of them have enrolled in regular courses while 5000 have taken up evening or extra-mural courses. The school also runs 15 post-graduate courses (500 participants) and 5 PhD courses (200 participants).

Out of the four interfaculty units, two are unique among the technical universities in Poland. These are: Centre for Urban Education (mainly for the developing countries) where 60 secondary school graduates from all over the world do a preparatory course to take up technical studies (mainly architecture) in Poland and Centre for Pedagogy

and Psychology for the students of the Cracow University of Technology and graduates of other high schools in Cracow as well as post-graduate courses in local government education management.

The employees of the University include 1050 academic teachers (170 with the **doctor habilitatus** title, 70 state-appointed professors, 70 university-appointed professors, 40 assistant professors) and 950 technical staff. The Cracow University of Technology has a fully autonomous status. Its four faculties can award DSc degrees and **doctor habilitatus** titles.

On average, 100 research projects and 400 research tasks (expert opinions) commissioned by various firms are implemented annually.

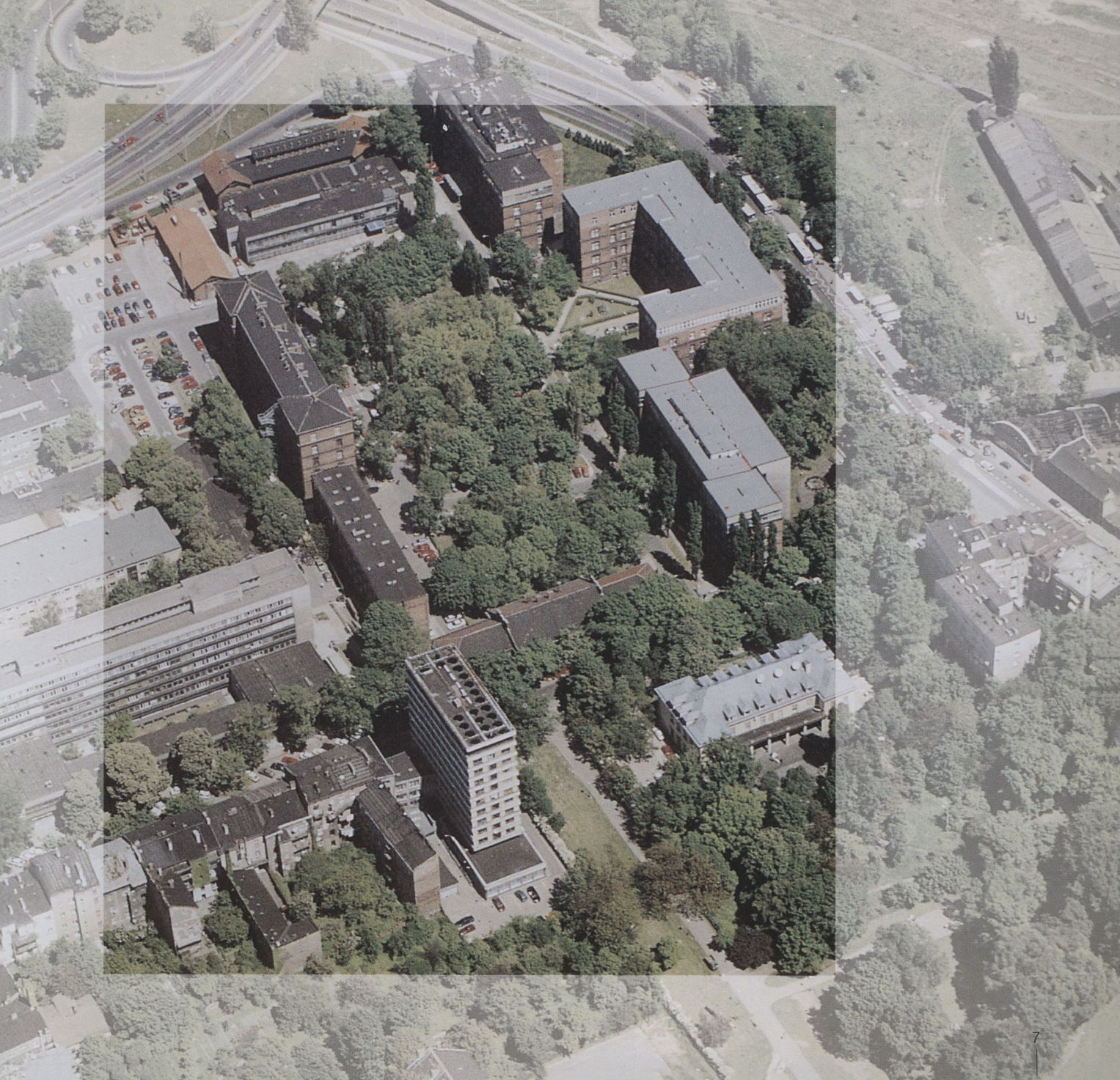
The school has international collaboration within the framework of European projects such as TEMPUS, SOCRATES-ERASMUS, CEEPUS, COPERNICUS, COST, 5, UE SCHEME FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND PRESENTATION as well as bilateral agreements between schools, particular faculties, institutes or chairs.

Apart from the high standard of educational and research activities, the aim of the University is also to actively participate in the life of the region and highly contribute to its growth. That was the reason behind the establishment of The Cracow Park of Technology -The Centre for Advanced Technologies in the so-called Special Economic Zone. A large part of the Zone is situated at the University Campus in Czyżyny (a Cracow district). High-tech research will be developed there mainly to meet the needs of the southern region of Poland. The research will also influence the University syllabus and create jobs for the graduates. To facilitate the collaboration between the University, firms and foreign partners, the University has set up a Centre for Innovations Transfer FEMIRC that covers the whole of southern Poland.

To meet the needs of the economy, the Cracow University of Technology has for some years been running a Careers Counselling Centre for the students and graduates. The Centre tests the applicants' vocational suitability, does research on the graduates' skills demanded by employers and indirectly influences the syllabus. It helps the students and graduates develop their professional career.

All the above mentioned activities help our school maintain its high position both in terms of the quality of education and research and transfer of high technology into industry. It is our ambition to be a modern school which treasures the best of its tradition but also looks into the future ready to face the cultural and civilisational challenge that lies ahead.

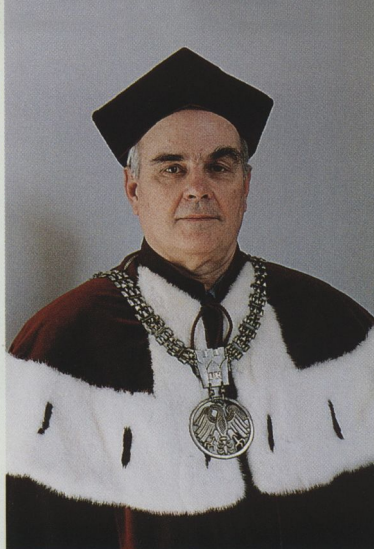
Kazimierz J. Flaga



Vice-Rector

Vice-Rector
for Faculty Development
and International Co-operation

Prof. Marcin Chrzanowski, PhD, DSc



The responsibilities of the Vice-Rector for Faculty Development and International Co-operation include the problems of development of the school in the aspect of both its development as an institution, upgrading the qualifications of the academic teachers and consolidation of its international position. Three administrative units, subordinate to the Vice-Rector, realise these tasks: Office for the University Development, Office for the Faculty Development and Office for Information and International Integration.

The tasks of the Office for the University Development cover creating and updating data bases on the durable and property, research apparatus and teaching facilities, intellectual and financial resources, as well as bases of indices of the condition of the school as an business enterprise. On the basis of civilisation, demographic and economic prognoses, considering the position of CUT in the region and its position in higher education, the Office prepares strategic plans of the school development. It also creates and updates the co-ordinating plan of the development. The Office proposes the basic guidelines of organisation activities, including various forms of financing, to fulfil the school's mission. Another task of the Office is to keep up contacts with local self-government, institutions of state administration and other organisations co-operating with the school. The Office closely co-operates with the Association of CUT Alumni and the Editorial Board of Publications in the field of information publications and promoting the school.

The Office for the Faculty Development deals with matters connected with scientific degrees and title of professor, DSc studies and professional career of the academic

teachers. The Office makes the analysis of teachers' scientific output and co-ordinates periodical evaluation of teachers. Another task of the Office is to co-ordinate the procedures of conferring the titles of honorary professors and doctors honoris causa, as well as organisation of the ceremonies of conferment of these titles and scientific degrees (promotion). The Office is responsible for contacts of the school with the Ministry of National Education. It co-operates with the Editorial Board of Publications in the field of publications connected with doctorates honoris causa.

The Office for Information and International Integration keeps the register of the school's contacts with foreign schools in the field of teaching and research activities. The Office is responsible for arranging the business trips abroad for CUT authorities and staff as well as organising official visits of foreign guests. In the field of information the Office is responsible for those parts of the internet CUT home page which refer to its activities. It also prepares yearly reports of the school's international co-operation for the Editorial Board of Publications.

The Vice-Rector for Faculty Development and International Co-operation co-operates with the following Senate Commissions: School Development, Faculty Development and Commission for International Co-operation; he is the Rector's Plenipotentiary for Computing Facilities and closely co-operates with both the Senate Commission for Computing Facilities and the sector of the Chief Computer Scientist/Operator; he is chairman of the Rector's Commission for Honours Conferment.

The Vice-Rector acts as the Rector's first deputy.



Vice-Rector

Vice-Rector for Research
and Co-operation with Industry

Prof. Józef Gawlik, PhD, DSc

The responsibilities of the Vice-Rector for Research and Co-operation with Industry cover the whole policy of scientific research done at CUT and co-operation with Polish business and industrial enterprises (especially in the Małopolska region) and foreign ones. Co-ordination of scientific research includes working out the school's scientific research projects plans and presenting them to the Committee for Scientific Research and the Ministry of National Education, as well as preparation of yearly reports for the Chief Census Bureau. The Vice-Rector is also responsible for co-operation with business and industrial enterprises, supervision of the implementation of research results in economy as well as guarantee participation of the school in implementation results. There are about 550 contracts with enterprises realised yearly. The Cracow University of Technology actively participates in developing innovatory economic initiative and high technology. The Vice-Rector co-operates with the Centre of Advanced Technologies in organising the "technology park on the area of CUT in Czyżyny district within the Special Economic Zone. In co-operation with the Vice-Rector for Faculty Development and International Co-operation and industrial enterprises the Vice-Rector undertakes activities to develop new teaching and research units, e.g. the Centre for Education and Research in Informatics Systems Application (following an agreement with ComArch company). The Vice-Rector also supervises the Editorial Board of Publications and the Printing House of CUT. The range of tasks of the Editorial Board includes publishing scientific papers, teaching materials, articles in "Czasopismo Techniczne" (Journal of Technology) as well as information publications, such as jubilees, and their distribution. The publishing activities are constantly modernised and extended to keep pace with growing publishing market. The Vice-Rector supervises the Innovation and Technology Relay Centre (FEMIRC), financed by EU, which has recently been transformed into Regional Contact Point for the Fifth Framework Programme. The Centre provides information and runs training in the field of preparation of application forms for European projects. It also actively participates in structural programmes for the development of the Małopolska region. FEMIRC co-operates with the Section of Scientific Information of CUT library and the

Office of Patent Agents, also subject to the Vice-Rector.

Further successful development of scientific and technological co-operation with industry and business depends on accredited research laboratories and certified system of management of the school and teaching. These problems have been undertaken by a special Bureau for Certification and Accreditation created by the Vice-Rector. Courses for "quality assistants" have been organised and further training for "quality manager" will soon start. The Vice-Rector co-operates with the Senate Commission for Economy, Budget and Finances; he is president of the Rector's Commission for Awards for Academic Teachers.

Vice-Rector

Vice-Rector for Education

Prof. Ryszard Henryk Kozłowski, PhD, DSc

The responsibilities of the Vice-Rector for Education cover all the aspects of education treated in a very broad sense; from enrolment, through the whole period of studies (regular daily, evening, external courses) to studies completion diploma.

On the Vice-Rector's initiative candidates to CUT have been given an opportunity to take the entrance examination combined with the final examination from secondary school. This decision is a "forerunner" to the principle of the so-called state final secondary examination, which will allow candidates to be enrolled with no entrance examination. This principle, however, will be introduced in Poland only in a few years time.

The forms of studies are changing. Recently a credit system has been adopted, to be followed by a module-credit system. This will give students an opportunity to choose freely a university (Polish or foreign) where they can study, outside their mother-school, chosen subjects or complete whole parts of studies.

The Vice-Rector supervises post-graduate studies run at the University and a year long preparatory courses at the Urban Educational Centre for foreigners intending to study at schools of technology, especially the Cracow University of Technology. The Vice-Rector also acts as Dean for other inter-faculty units for teaching, i.e. Pedagogy and Psychology Centre, where stu-



dents and graduates of universities of technology can obtain qualifications for teaching.

Recently the Centre has started post-graduate studies in the field of "manager of education" and "education management" receiving for this goal -as one of few in Poland- grants from the Ministry of National Education.

The other inter-faculty units are: Foreign Languages Centre and Physical Education and Recreation Centre.

Foreign Languages Centre teaches languages at both obligatory courses for all the students of CUT and various extra courses, often outside Cracow, where intensive learning process gives successful results.

Physical Education and Recreation Centre, closely co-operates with the University Club of Students' Sports Association and can boast of many successes (individual and team) in various sports disciplines.

Since the student exchange between various scientific centres abroad and the Cracow University of Technology has become more and more intensive and since CUT participates in international education programmes: TEMPUS, SOCRATES, ERASMUS, LEONARDO a new office for students international exchange has been opened under the Vice-Rector's supervision.

The Vice-Rector for Education closely co-operates with, and often initiates activities of the Senate Commission for Education, the Senate Disciplinary Commission for Students, the Rector's Commission for Co-operation with Secondary Schools.

Another important task of the Vice-Rector for Education is close co-operation with CUT students' organisations. Most of the student cultural and sporting events are organised under the auspices of the Vice-Rector. They are also supported financially by funds at his disposal.

Co-operation with foreign countries

- AB Sandvik Steel, Sweden
- ABB Alstom B.B., Materials Technology Baden, Switzerland
- Anglia Polytechnic University, Chelmsford, Great Britain
- Bauhaus-Universität Weimar, Germany
- Budapesti Műszaki Egyetem (Technical University of Budapest), Hungary
- Centro Sviluppo Materiali Roma/Dolmine, Italy
- ELSAM (Technical University of Denmark), Denmark
- European Commission, Joint Research Centre, Institute for Advanced Materials, Brussels, Belgium
- Fachhochschule Münster, Germany
- Institute of Physics of Materials, Czech Academy of Sciences, Brno, Czech Republic
- Iwanowskij Gosudarstwiennyj Chimiko-Technologičeskij Uniwersitet (Ivanovo Institute of Chemical Technology), Russia
- Kitami Institute of Technology, Japan
- Kungliga Tekniska Högskolan, Stockholm (Royal Institute of Technology), Sweden
- Lwivskij Politechnicznyj Institut (Lviv Polytechnic Institute), Ukraine
- Manesmann Forschungs-Institut, Duisburg, Germany
- Miskolci Egyetem (Miskolc University), Hungary
- Moskowskij Gosudarstwiennyj Uniwersitet Inženiernoj Ekologii (Moscow State University of Environmental Engineering), Russia
- Oslo University, Norway
- Purdue University (West Lafayette), USA
- Research Centre Jülich, Germany
- Slovenská Technická Univerzita, Bratislava (Slovak University of Technology), Slovakia
- St. Petersburg State Technical University, Russia
- Tampere University of Technology, Finland
- Technická Univerzita v Košicach (Technical University of Košice), Slovakia
- Technische Universität Berlin, Germany
- Technische Universität Graz, Austria
- Technische Universität Wien, Austria
- Technische Universiteit Delft (Delft University of Technology), Netherlands
- Tomskij Politechničeskij Uniwersitet (Tomsk Polytechnic University), Russia
- Tsinghua University, China
- Universidad de Sevilla (University of Sevilla), Spain
- Universidade da Beira Interior, Covilha (University of Covilha), Portugal
- Università degli Studi di Venezia (University of Venice), Italy
- Universität Stuttgart, (Stuttgart University), Germany
- Université de Clermont-Ferrand II (Université Blaise Pascal), France
- University of Cambridge, Great Britain
- University of Connecticut, USA
- University of Luton, Great Britain
- University of Surrey, Great Britain
- University of Tennessee, Knoxville, USA
- University of Texas at Austin, USA
- Vaasan Yliopisto (University of Vaasa), Finland
- Vítkovice Research of Development, Ostrava, Czech Republic
- Žilinská Univerzita (University of Žilina), Slovakia







Doctors Honoris Causa of the Cracow University of Technology

Prof. Leópolod Escande DSc, professor of University of Toulouse, foreign member of the Polish Academy of Sciences; hydro-engineering and hydro-mechanics; Senate's resolution: 17 09 1965; conferment: 24 11 1965; conferring professor: Bronisław Kopyciński

Prof. Walery Goetel DSc, real member of the Polish Academy of Sciences, professor of the Academy of Mining and Metallurgy; geology, mining, protection of environment and natural resources; Senate's resolution: 30 09 1970; conferment: 5 10 1970; conferring professor: Zbigniew Wzorek

Prof. Marian Kamiński PhD, professor of the Academy of Mining and Metallurgy; petrography and mineralogy; Senate's resolution: 28 04 1972; conferment: 30 06 1972; conferring professor: Bronisław Kopyciński

Prof. Pietro Gazzola DSc Arch., president of ICOMOS, professor of Rome University; monument preservation; Senate's resolution: 28 04 1972; conferment: 18 09 1972; conferring professor: Alfred Majewski

Prof. Waclaw Olszak DSc, real member of the Polish Academy of Sciences, professor emeritus of the Cracow University of Technology; mechanics and theory of concrete structures; Senate's resolution: 28 09 1976; conferment: 26 10 1976; conferring professor: Bronisław Kopyciński

Prof. Jerzy Hryniewiecki DSc, Arch., professor emeritus of the Cracow University of Technology; school of large-space architecture; Senate's resolution: 11 04 1980; conferment: 19 06 1980; conferring professor: Władysław Borusiewicz

Prof. Kazimierz Gamski DSc, professor of Liège University; theory of engineering structures materials; Senate's resolution: 27 03 1985; conferment: 18 06 1985; conferring professor: Roman Ciesielski

Prof. Bronisław Kopyciński, DSc, Eng., professor emeritus of the Cracow University of Technology; concrete structures and technology; Senate's resolution: 12 07 1988; conferment: 07 10 1988; conferring professor: Władysław Muszyński

Prof. Heinz Peter Brauer, PhD, Eng., professor emeritus of the Berlin University of Technology; chemical and process engineering, apparatus construction; Senate's resolution: 12 07 1986; conferment: 14 10 1988; conferring professor: Stanisław Rudnik

Prof. Olgiard Cecyl Zienkiewicz, professor of the Welsh University in Swansea; computer methods of analysis and optimisation, finite elements method; Senate's resolution: 30 06 1989; conferment: 04 10 1989; conferring professor: Janusz Orkisz

Prof. Gerard Duncan Galletly, professor of the Liverpool University; statics, dynamics and stability of metal and composite shells; Senate's resolution: 31 03 1995; conferment: 24 05 1995; conferring professor: Michał Życzkowski

- Prof. Henk C. van der Plas**, professor of the Academy of Agriculture in Wageningen (Holand); chemistry of heterocyclic nitrogen compounds; Senate's resolution: 31 03 1995; conferment: 27 06 1995; conferring professor: Elżbieta Bulewicz
- Prof. Witold Cęckiewicz**, Eng. Arch., real member of the Polish Academy of Sciences, member of the Polish Academy of Arts and Sciences, professor emeritus of the Cracow University of Technology; architecture and urban planning; Senate's resolution: 07 07 1995; conferment: 18 10 1995; conferring professor: J. Tadeusz Gawłowski
- Prof. Roman Ciesielski**, PhD, Eng., real member of the Polish Academy of Sciences, member of the Polish Academy of Arts and Sciences, professor emeritus of the Cracow University of Technology; structural mechanics; Senate's resolution: 07 07 1995; conferment: 18 10 1995; conferring professor: Gwidon Szefer
- Prof. Michał Życzkowski**, PhD, Eng., real member of the Polish Academy of Sciences, member of the Polish Academy of Arts and Sciences, full professor of the Cracow University of Technology; mechanics of solid bodies; Senate's resolution: 07 07 1995; conferment: 18 10 1995; conferring professor: Józef Nizioł
- Prof. Zenon Mróz**, PhD, Eng., corresponding member of the Polish Academy of Sciences, full professor at the Institute of Basic Problems in Engineering of the Polish Academy of Sciences; mechanics; Senate's resolution: 26 09 1997; conferment: 03 12 1997; conferring professor: Jacek Skrzypek
- Prof. Wiktor Zin, PhD**, Eng., Arch., professor emeritus of the Cracow University of Technology; architecture and urban planning, monument preservation, history and theory of architecture; Senate's resolution: 05 12 1997; conferment: 28 01 1998; conferring professor: Andrzej Kadłuczka
- Prof. Władysław Muszyński**, DSc, Eng., professor emeritus of the Cracow University of Technology; civil engineering; Senate's resolution: 09 01 1998; conferment: 06 05 1998; conferring professor: Kazimierz J. Flaga
- Jaime Lerner**, governor of the State of Paraná, Brazil; architecture and urban planning; Senate's resolution: 20 01 1999; conferment: 30 03 1999; conferring professor: Tadeusz Bartkowicz
- Prof. Jan Hult**, professor emeritus of Göteborg University of Technology; mechanics of deformable bodies; Senate's resolution: 26 03 1999; conferment: 09 06 1999; conferring professor: Michał Życzkowski
- Prof. Oscar H. G. Mahrenholtz**, professor emeritus of Hamburg-Harburg University of Technology; applied mechanics; Senate's resolution: 26 03 1999; conferment: 09 06 1999; conferring professor: Józef Nizioł
- Prof. Herbert A. Mang**, professor of Viena University of Technology; structural mechanics; Senate's resolution: 10 03 2000; conferment: 13 04 2000; conferring professor: Zenon Waszczyszyn
- Prof. Jan Kmita**, PhD, Eng., professor emeritus of the Wrocław University of Technology; theory and mechanics of bridge structures; Senate's resolution: 02 06 2000; conferment: 28 06 2000; conferring professor: Kazimierz J. Flaga
- Prof. Mihály Zádor**, professor of Budapest University of Technology (Hungary); architectural and historical buildings preservation; Senate's resolution: 02 06 2000; conferment: 27 10 2000; conferring professor: Andrzej Kadłuczka
- Prof. James C. I. Dooge**, professor of Dublin University (Ireland); hydrology; Senate's resolution: 06 06 2000; conferment: 08 11 2000; conferring professor: Henryk Słota



Honorary Professors of the Cracow University of Technology

Karol Wojtyła, Pope John Paul II, Honorary Senator and Professor of CUT; conferment: 17 06 1999

Marcel Huber van de Voorde, professor of Delft University of Technology; conferment: 04 12 1998

Herbert Bühler, professor of Fachhochschule Münster; conferment: 02 02 1000

Herbert P. Osanna, professor of Viena University of Technology; conferment: 07 05 1999

Gianugo Polesello, professor of Istituto Universitario di Architettura di Venezia; conferment: 30 06 2000

Walerian Nikolajewicz Bliniczew, professor of Ivanowo State University of Chemistry and Technology; conferment: 02 02 2001

Honorary Titles Conferred by up CUT

Prof. **Michał Dyląg**, PhD, DSc, Honorary Professor of Ivanovo Institute of Chemical Technology, Russia (1995)

Prof. **Janusz Murzewski**, PhD, Honorary Professor of University in Tottori, Japan (1987)

Prof. **Władysław Muszyński**, PhD, Honorary Member of the Senate of Berlin University of Technology, Germany (1990)

Prof. **Józef Nizioł**, PhD, DSc, doctor honoris causa of Ivanovo Institute of Chemical Technology, Russia (1994)

Prof. **Tadeusz Jan Sobczyk**, PhD, DSc, doctor honoris causa of the Russian Academy of Sciences, Russia (2000)

Prof. **Zenon Waszczyszyn**, PhD, DSc, doctor honoris causa of Budapest University of Technology and Economics, Hungary (2001)

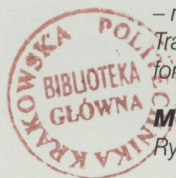
Prof. **Artur Wieczysty**, PhD, DSc, Honorary Citizen of the city of Austin, Texas, USA (1985)

Prof. **Wiktor Zin**, PhD, DSc, doctor honoris causa of Budapest University of Technology, Hungary (1981)

Members of the Polish Academy of Sciences (PAS), Polish Academy of Arts and Sciences (PAAS) and Foreign Academies, Associations, Societies, Committees

Witold Cęckiewicz – real member of PAS, member of PAAS, **Roman Ciesielski** – real member of PAS, member of PAAS, **Michał Życzkowski** – real member of PAS, member of PAAS, foreign member of the Austrian Academy of Sciences, **Zenon Waszczyszyn** – corresponding member of PAS, member of PAAS, **Józef Nizioł** – corresponding member of PAAS, foreign member of The Academy of Engineering Sciences of the Russian Federation, **Gwidon Szefer** corresponding member of PAAS, **Marcin Chrzanowski** – foreign member of The Royal Society of Arts and Sciences in Göteborg, **Michał Dyląg** – foreign member of the Academy of Engineering Sciences of the Russian Federation, **Kazimierz J. Flaga** – foreign member of The Ukrainian Academy of Civil Engineering, **Bronisław Kopyciński** – corresponding member of The French Academy of Sciences (branch in Toulouse), **Wiktor Zin** – foreign member of The Mexican Academy of Sciences, **Janusz Murzewski** – member of The American Mathematical Association, **Jan Harasymowicz** – real member of the Polish Academy of Engineering, **Bolesław Stolarski** – real member of The Ukrainian Academy of Transport; real member of The New York Academy of Sciences, **Edward Szaraniec** – foreign member of The Committee for International Affairs of the Association of Geophysicists – Searchers (SEG); foreign member of EAGE – section Geophysics

Members of The New York Academy of Sciences: Marek Berezowski, Jan Grabacki, Renata Kocwa-Haluch, Ryszard Henryk Kozłowski, Zbigniew Mendera, Tadeusz Michałowski, Janusz Murzewski, Bolesław Stolarski



Post-graduate Studies

run at the Cracow University of Technology in 1999/2000

Post-graduate studies **Industrial Safety**

31-864 Kraków, al. Jana Pawła II 37, tel.: (12) 648 30 29

Post-graduate study **Traffic Accident Investigation and Analysis**

31-864 Kraków, al. Jana Pawła II 37, tel.: (12) 648 13 44,
fax: (12) 648 81 31

Post-graduate study **Management in Urban Public Transport for Development and Operation**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 632 53 60

Post-graduate study **Marketing and Organisation of Railway Transport**

31-155 Kraków, ul. Warszawska 24, tel./fax: (12) 649 59 44,
tel.: 648 05 55 ext. 3290

Post-graduate study **Heat Engineering**

31-155 Kraków, ul. Warszawska 24, tel./fax: (12) 634 45 94

Post-graduate study **Engineering of Devices under Technical Inspection**

31-864 Kraków, al. Jana Pawła II 37, tel./fax: (12) 648 22 83

Post-graduate study **Real Property Assessment**

31-155 Kraków, ul. Warszawska 24, tel./fax: (12) 628 23 19,
fax: (12) 632 09 66

Post-graduate study **Posty Graduate Diploma Study in Architectural and Urban Monument's Conservation**

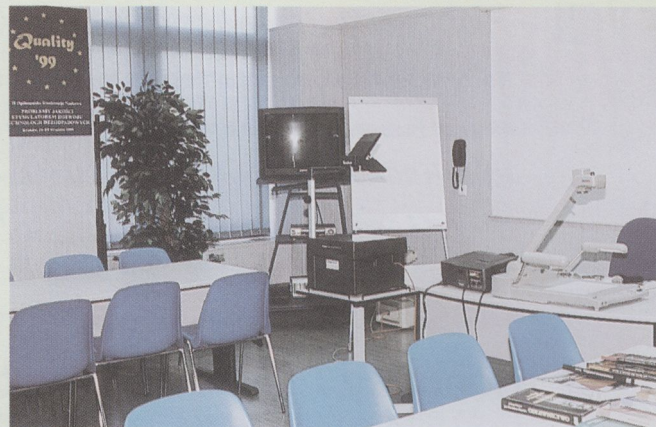
31-002 Kraków, ul. Kanonicza 1, tel.: (12) 421 87 44

Post-graduate studies **International System of Quality Assurance in Industrial Plants After ISO 9000**

31-864 Kraków, al. Jana Pawła II 37, tel.: (12) 648 30 29

Inter-faculty postgraduate study **Environment Protection in Urban Areas**

31-155 Kraków, ul. Warszawska 24, tel./fax: (12) 648 55 35



Post-graduate study **New Trends in Plastics Processing and Application**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 628 21 27,
fax: (12) 634 24 25

Post-graduate study **Chemical and Process Engineering**

31-155 Kraków, ul. Warszawska 24, tel./fax: (12) 633 71 29

Post-graduate study **Local Education Management**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 628 25 17, 628 25 18

Post-graduate study **Manager of Education**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 628 25 17, 628 25 18

Post-graduate study **Local Education Organisation and Management**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 628 25 17, 628 25 18

Post-graduate study **Education in Economics - Initiative**

31-155 Kraków, ul. Warszawska 24, tel.: (12) 628 25 17, 628 25 18

Post-graduate studies **Management and Organisation in Self-government Institutions and Subordinate Units**

31-864 Kraków, al. Jana Pawła II 37, tel./fax: (12) 648 30 29

Post-graduate studies **Environment Management After ISO 14000**

31-864 Kraków, al. Jana Pawła II 37, tel./fax: (12) 648 30 29

Post-graduate study **School of Business - Institute of Business Studies at Cracow University of Technology in Cracow**

31-864 Kraków, al. Jana Pawła II 37, tel.: (12) 648 01 30,
fax: (12) 648 20 10

**FACULTY
OF ARCHITECTURE**



- Institute of History of Architecture and Monument Preservation (A-1)*
- Institute of Architectural Design (A-2)*
- Institute of Urban Design (A-3)*
- Institute of Rural Architecture and Planning (A-4)*
- Institute of City and Regional Design (A-5)*
- Chair of Architectural Design for Industry (A-6)*
- Section of Drawing, Painting and Sculpture (A-7)*
- Institute of Landscape Architecture (A-8)*
- Division of Descriptive Geometry and Engineering Graphics (A-9)*
- Chair of Regional Architecture Design (A-10)*
- Independent Chair of Theory of Landscape Architecture and Garden Composition (A-11)*

Dean

Prof. Wacław SERUGA, PhD, DSc

Vice-Deans

Assoc. Prof. Dariusz KOZŁOWSKI, PhD, DSc

Prof. Kazimierz KUŚNIERZ, PhD, DSc

Assoc. Prof. Ewa WĘCŁAWOWICZ-GYURKOVICH, PhD, DSc



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e-mail: a-0@admin.pk.edu.pl



Degree courses

ARCHITECTURE AND URBAN DESIGN LANDSCAPE ARCHITECTURE

The five-year course of instruction covers a broad range of knowledge in:

- history of culture, architecture, world and Polish art.,
- building design and techniques,
- design of buildings and architectural complexes including interiors and green areas, as well as ways of composing elements into a spatial organism within an integrated urban-planning and architectural unit.

Graduates are qualified to work in design offices, urban-planning bureaus, in construction and maintenance of residential, public, industrial and agricultural buildings as well as reconstruction and preservation of historical monuments, they are prepared to work as interior designers, and co-ordinate construction projects.

Faculty and research staff

250 staff, including 17 professors (one member of the Polish Academy of Sciences and the Polish Academy of Arts and Sciences) 13 associate professors, 6 PhD, DSc and 93 PhD holders.

Number of students

Total number of students: 1495, first year enrolment 358.



INSTITUTE OF HISTORY OF ARCHITECTURE AND MONUMENT PRESERVATION (A-1)

Main teaching and research fields:

History of architecture, history of art, history of urban planning and preservation of historical towns and cities as well as preservation and conservation of



historical architectural monuments including in particular: connection between the modern architecture and respect for historical values; theory and technology of monument preservation; architecture and preservation of wood architectural objects and complexes; the 19th and 20th C architecture.

The Institute is composed of:

Division of History of Architecture and Monument Preservation (A-11)

Division of History of World Architecture, Urbanism and Art (A-12)

Division of History and 19th-20th C Architecture Renewal (A-13)

Division of Preservation Studies and Research (A-14)

INSTITUTE OF ARCHITECTURAL DESIGN (A-2)

Main teaching and research fields

Basics of architectonic design, urban planning and residential building, standards, objects, complexes and model units formation; public utility units design in architectonic and urban-planning aspects; infrastructure facilities.

The Institute is composed of:

Chair of Housing (A-21)

Chair of Public Utility Buildings Design (A-22)

Section of Building Structures (A-24)

INSTITUTE OF URBAN DESIGN (A-3)

Main research fields

Role of urban planning design (in the aspects of programme, composition and ecology); revalorization and development of various urban zones in view of new estate-property laws in Poland; design of low intense forms of housing systems; ecological problems in housing environment design; renewal of existing residential complexes and post-industrial areas; GIS application in urban planning analysis; design and adaptation of urban environment for the disabled persons; theory and design of university education complexes.

Main teaching fields

Basic architectonic and urban planning design principles; design of single and multi-family residential complexes; design of city centre units; design of city transportation systems; design for the disabled persons (optional); design of sports and recreation areas (optional); composition of urban environment (optional); urban planning analysis (optional) student training in inventory, specialist design and design with "foreigners" (students' choice).

The Institute is composed of:

Section of Urban Composition (A-31)

Section of Residential Environment (A-32)

Section of Urban Renewal and Development (A-33)

INSTITUTE OF RURAL ARCHITECTURE AND PLANNING (A-4)

Main teaching and research fields

Development of construction and settlements in rural areas; architectural design in rural areas: residential and farm buildings, facilities and rural industry complexes; physical planning of settlement systems and agricultural areas; design of local government and facility centres; influence of industry and recreation on rural settlements transformation; energy-saving and ecological construction systems, traditional and modern building technologies design of architectural details; building materials in architecture.

The Institute is composed of:

Section of Rural Architecture and Planning (A-41)

Section of Building Systems and Materials (A-42)



INSTITUTE

OF CITY AND REGIONAL DESIGN (A-5)

Main teaching and research fields

Physical planning of towns and urbanized areas following the constitutional rule of balanced development according to new economic conditions and tasks to be met on joining the European integration process, environment protection, transportation, municipal engineering and sociology, evaluation of investment projects on the natural habitat as well as prognosis of effects of physical planning decisions on the environment and human condition, design of city areas and facility centres; re-evaluation and re-development of physical planning structures to reconstruct the historical composition of towns, local problems of southern Poland, regions of large towns and metropolises and resort areas.

The Institute is composed of:

Section of City and Municipal Areas Design (A-51)

Section of Physical Planning and Environment Protection (A-52)

Section of Regional Planning (A-53)



CHAIR OF ARCHITECTURAL DESIGN FOR INDUSTRY (A-6)

Main teaching and research fields

architectural design including: industrial building design, offices, store houses, transportation facilities, health care facilities; theory of architecture covering: aesthetics, systematics and axiology of modern architecture, integration of art and skills, functional elasticity, ergonomics; psychology of architecture.

Workshop for Industrial Architecture (A-61)

Workshop for Special Objects Architecture (A-62)

SECTION OF DRAWING, PAINTING AND SCULPTURE (A-7)

Main research fields

plastic arts in architecture; theory of drawing, painting, sculpture, fine arts in architecture, design of industrial forms, history and design of stained glass, interior architecture.

Main teaching fields

study of nature in studio and plein-air, development of sensitivity to painting and composition.

The Institute is composed of:

Unit for Drawing and Painting (A-71)

Unit for Sculpture (A-72)



INSTITUTE

OF LANDSCAPE ARCHITECTURE (A-8)

Main teaching and research fields

National parks, natural landscape parks, landscape of protected areas, protection schemes, townscape and suburban areas; urban green areas, art of gardening, revalorization of historical gardens; pilgrimage parks; recultivation of degraded areas; engineering objects in landscape; spatial regional planning in legal, economic and social aspects; landscape and dendrological expertise, expert reports on investment project effects on landscape; terminology of landscape architecture and art of gardening; modern trends in landscape architecture, perception of landscape, participation of local communities in landscape planning, identity of towns and villages.

The Institute is composed of:

Section of Natural Landscape and Engineering Structures (A-81)

Section of Townscape and Suburban Zones (A-82)

Section of Garden Composition and Greenery Areas (A-83)

Section of Cultural Background of Landscape Architecture (A-84)

DIVISION OF DESCRIPTIVE GEOMETRY AND ENGINEERING GRAPHICS (A-9)

Main research fields

Virtual computer models, projective geometry (cones theory, 3D-2D projections, perspective projection), geometric design in engineering practice (civil engineering, architecture, transportation - road-view research, dynamic space simulation), visualisation, 3D perception, CAD and computer graphics, CaD for descriptive geometry problems.

Main teaching fields:

Descriptive geometry, engineering graphics.

CHAIR OF REGIONAL ARCHITECTURE DESIGN (A-10)

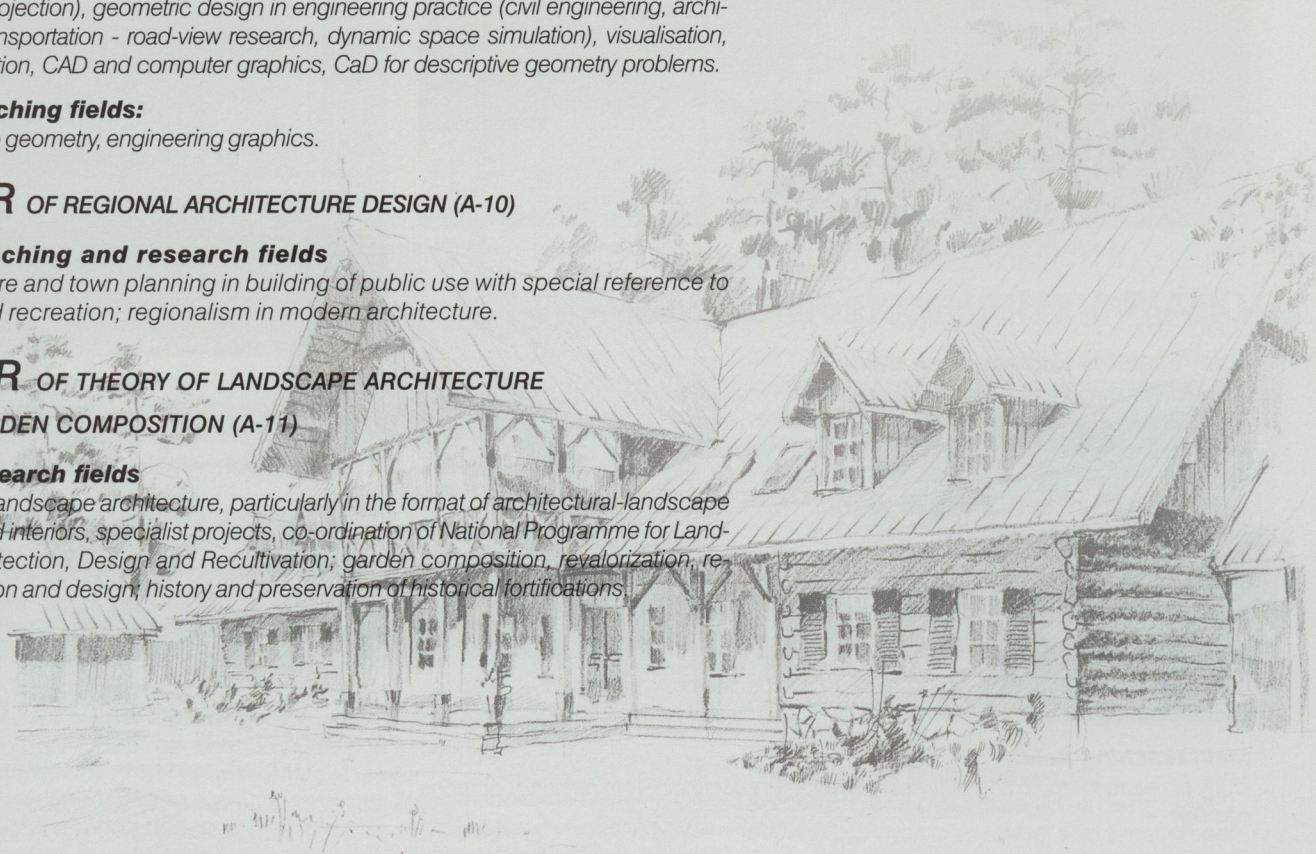
Main teaching and research fields

Architecture and town planning in building of public use with special reference to sports and recreation; regionalism in modern architecture.

CHAIR OF THEORY OF LANDSCAPE ARCHITECTURE AND GARDEN COMPOSITION (A-11)

Main research fields

Theory of landscape architecture, particularly in the format of architectural-landscape entities and interiors, specialist projects, co-ordination of National Programme for Landscape Protection, Design and Recultivation; garden composition, revalorization, re-composition and design; history and preservation of historical fortifications.



FACULTY
OF APPLIED PHYSICS
AND COMPUTER MODELLING



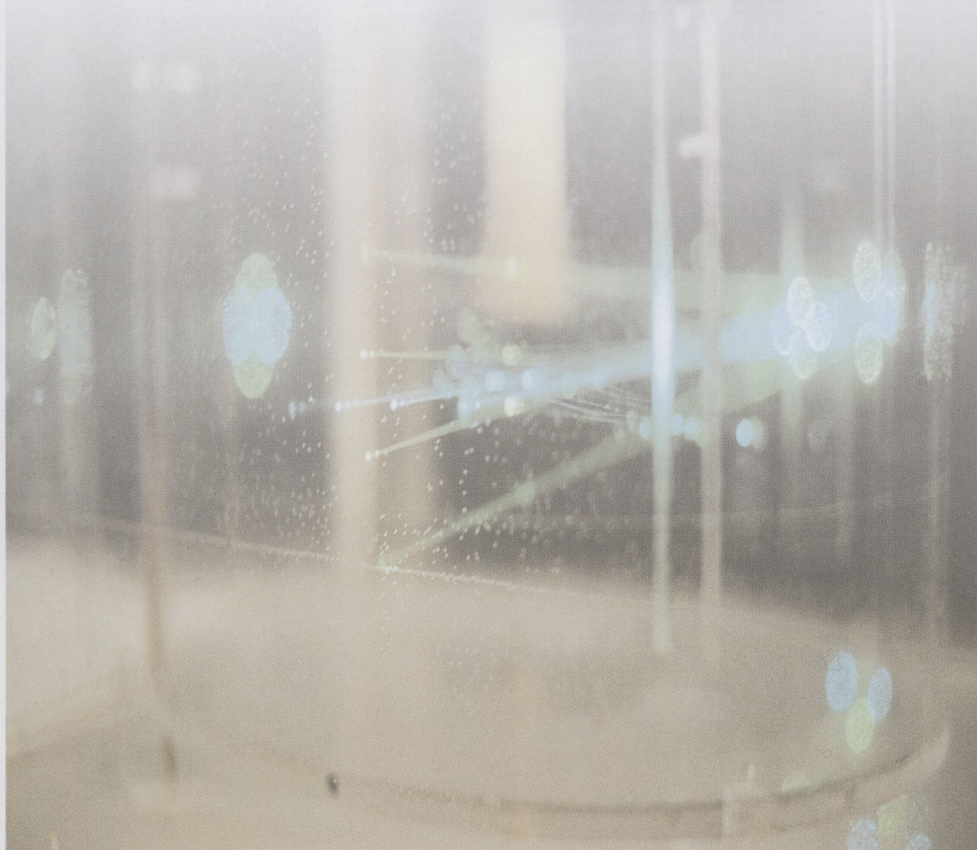
Institute of Physics (F-1)
Institute of Mathematics (F-2)
Institute of Computer Modelling (F-3)
Institute of Economics, Sociology and Philosophy (F-4)

Dean
Prof. Bohdan KOZARZEWSKI, PhD, DSc

Vice-deans
Eugeniusz SZUMAKOWICZ, PhD, DSc
Marek STANUSZEK, PhD



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fax: (+48 12) 638 07 28
e-mail: f-0@admin.pk.edu.pl



Degree courses and specialisations

Graduate study in **Applied Physics** with two courses available: Condensed Matter Physics for students who are interested in the theoretical background of material science, and Computer Modelling which is designed for those intending to work as professionals in software engineering and information systems of industry, business and government administration. Courses content includes extensive training in calculus, the fundamentals of material science, methods of mathematical modelling, advanced computing.

Undergraduate and graduate study in **Applied Mathematics** with two programmes available: Mathematics in Finances and Economy as well as Mathematical Modelling. The undergraduate study provides an opportunity for people with some experience in industry, commerce or public sector organisations to improve their career prospects. The graduate study is designed for students intending to be experts in mathematical foundation of engineering, economy and business, and/or those who want to understand and implement mathematical modelling of a variety of processes. Courses content includes analysis, ordinary and partial differential equations, stochastic processes, introduction to economy and finances, mathematical modelling of economical and financial processes.

Main research fields

Magnetic properties of solids, many-body theory of non-linear vibrations in physical systems, differential equations, differential geometry, analytic spaces, development of CAD systems, application of adaptive methods in mechanics, neural network and genetic algorithms, microeconomics, market analysis, sociological theories of the city.

Faculty and research staff

159 staff, including 11 professors, 9 PhD, DSc, 79 PhD holders.

Number of students

Total number of students: 470, first year enrolment: 391.

INSTITUTE OF PHYSICS (F-1)

Main research fields

Solid state physics; many-body theory of strongly correlated fermion systems; electronic structure and magnetic properties of intermetallic compounds; optimal structural design under stability and vibration constraints; liquid crystal physics; physical properties of synthetic polymers, biopolymers and their charge-transfer complexes; photoluminescence and electroluminescence of polymer diodes; surface physics.

The Institute is composed of:

Section of Solid State Physics (F-11)

Section of Applied Physics (F-12)

Section of Magnetic Properties of Solids (F-13)

Section of Theory and Condensed Phase (F-14)

INSTITUTE OF MATHEMATICS (F-2)

Main research fields

Linear and non-linear differential equations, spectral theory and eigenvalue problems, linear and non-linear evolution equations in abstract space, equations with parameter, integral equations; functional analysis, several complex variables and analytic spaces; functions of complex variable; global differential geometry, algebraic geometry, linear and multi-linear algebra; matrix theory; semi-analytic and sub-analytic sets; probability theory and stochastic processes; mathematical logic; fluid mechanics, mechanics of particles and systems.

The Institute is composed of:

Section of Mathematical Analysis (F-21)

Section of Complex Analysis (F-22)

Section of Differential Equations and Functional Analysis (F-23)



INSTITUTE

OF COMPUTER MODELLING (F-3)

Main teaching and research fields

Computer science; networking; programming languages; Cad; operating systems; advanced computer methods; artificial intelligence, modelling and discrete processes simulation, application of computer science in industry, computer simulation of technological processes; training in computer science, computer programming and graphics.

The Institute is composed of:

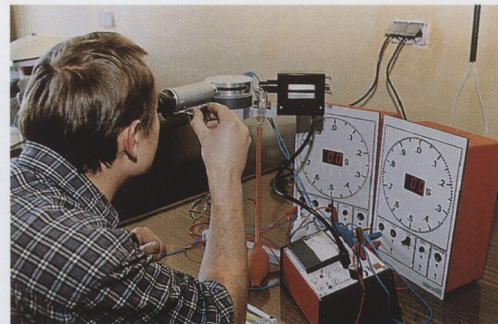
Section of Applied Mathematics (F-31)

Section of Artificial Intelligence Methods (F-32)

Workshop for Programming Engineering (F-33)

Workshop for Computer Aided Design (F-34)

Unit of Technical Services (F-35)



INSTITUTE OF ECONOMICS, SOCIOLOGY AND PHILOSOPHY (F-4)

Main teaching and research fields

Economics, management, banking, marketing and its strategies, rationale in business; ecology, sociology, social psychology; social communication; the Polish Diaspora, the Polish in exile, migrations; philosophy, ethics, ethics in business; philosophy of mathematics; epistemology, artificial intelligence.

The Institute is composed of:

Section of Economics, Management and Marketing (F-41)

Section of Philosophy and Ethics (F-42)

Section of Sociology and Contemporary Culture (F-43)

**FACULTY
OF ELECTRICAL
AND COMPUTER ENGINEERING**



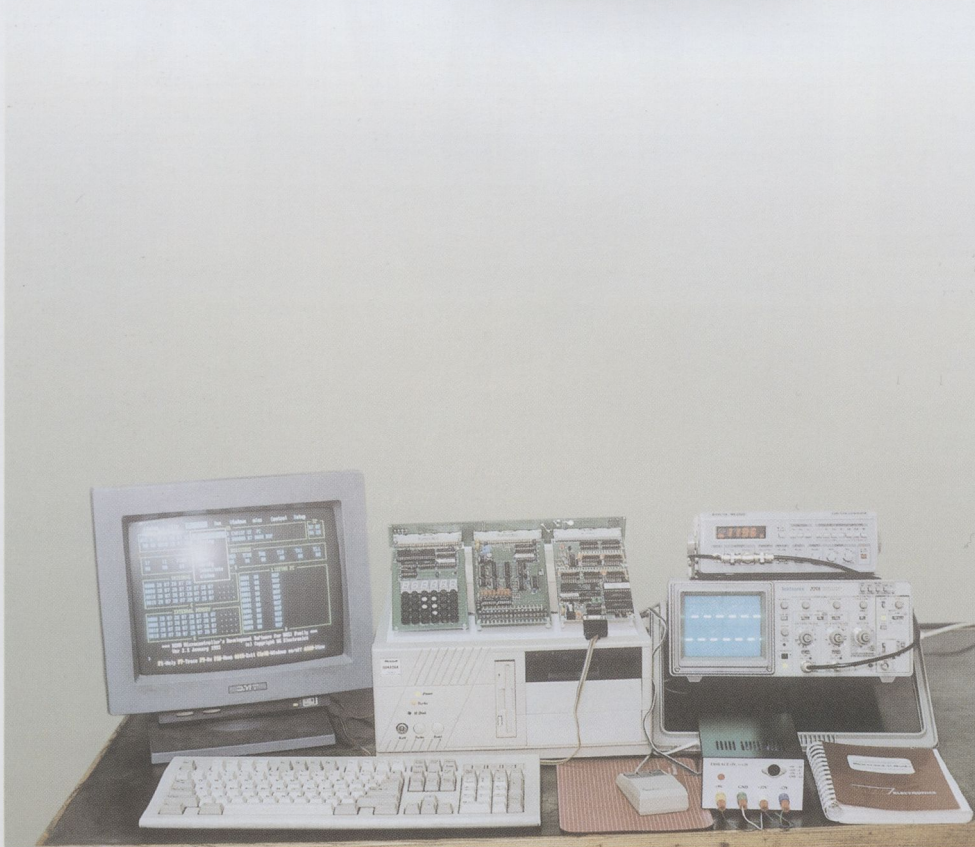
Institute of Electrical Metrology (E-1)
Institute of Electromechanical Energy Conversion (E-2)
Institute of Control Engineering (E-3)
Institute of Industrial Electrotechnics and Electronics (E-4)
Chair of Computer Engineering (E-5)

Dean
Assoc. Prof. Stanisław JAGIEŁŁO, PhD, DSc

Vice-Deans
Tadeusz PIWOWARCZYK, PhD
Waldemar ZAJĄC, PhD



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Degree course and specialisations

The Faculty of Electrical and Computer Engineering offers:

full-time degree course leading to the degree of MSc in Electrical engineering with specialisations:

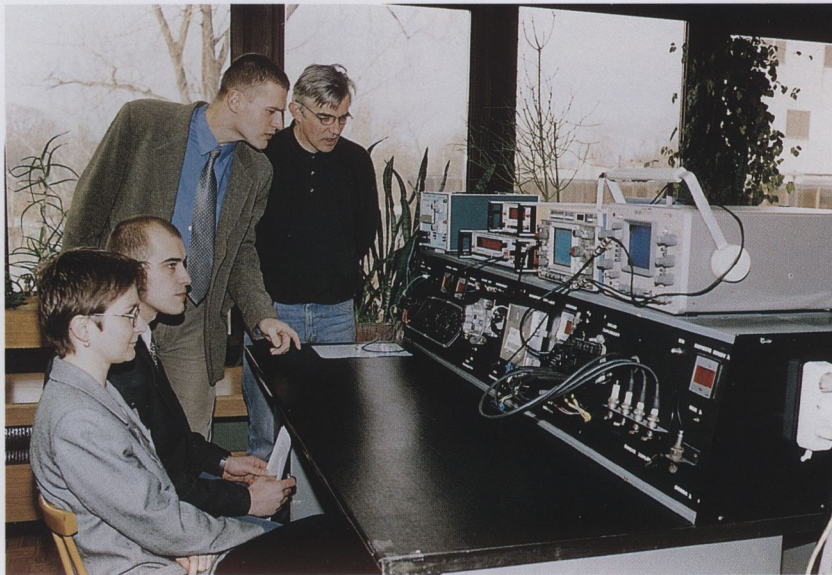
- engineering of electrical systems
- automatics
- electrical engineering in railway
- computer engineering

part-time course leading to the degree of BSc in electrical engineering with specialisations:

- automatics
- electrical engineering in railway
- electronic control systems

Specialisation in engineering of electrical systems is geared towards the following problems: power electronics and drives, engineering of electromechanical systems, quality and reliability of electrical energy electrical measurement systems.

Specialisation in automatics concerns the following problems: automatic control of industrial processes, engineering of computer systems, electromechanical instrumentation.



Specialisation in electrical engineering in railway is dedicated to the following: power railway systems, traction drives, railway traffic control, electronic and telecommunications equipment for railway, municipal traction.

Specialisation in computer engineering covers the following: computer architectures and digital systems design, software engineering, computer systems.

Specialisation in electronic control systems concerns the design, modelling and application of electronic circuits and units in automatics and control systems for electrical drives.

Main research fields

In the scope of electrical engineering: circuit theory, electrical machines and drives, electromechanical systems, theory of dynamic errors, electric traction. In the scope of automatics: systems engineering, time-optimal control systems, railway traffic control. In the scope of computer engineering: hardware/software co-design, fast prototyping of digital systems, digital systems testing and diagnostics.

Faculty and research staff

67 employees, including 7 professors, 6 associate professors, 4 PhD, DSc and 33 PhD holders.

Number of students

Total number of students: 1025, first year enrolment 237. Number of students enrolled in the full time MSc courses 680. Number of students enrolled in the evening part-time courses 345.

Institute

OF ELECTRICAL METROLOGY (E-1)

Main research fields

Computer aided multiparameter measuring systems for measurements of non electrical dynamic quantities, mathematical models and calibration of measuring systems, inverse scattering theory, aggregation and decomposition.

The Institute is composed of:

Division of Electrical Measurement (E-11)

Division of Impedance Tomography (E-12)

INSTITUTE OF ELECTROMECHANICAL ENERGY CONVERSION (E-2)

Main research fields

Electromechanical energy conversion, electrical machines, electromechanical systems, power electronic drives, power electronic in traction, traction power apparatus and systems, electromagnetic compatibility in electric traction, railway traffic control systems.

The Institute is composed of

Chair of Machines and Electrical Drives (E-21)

Division of Traction and Traffic Control (E-22)

INSTITUTE OF CONTROL ENGINEERING (E-3)

Main research fields

Time-optimal control with non-linear and discontinuous objects, optimal control of objects with random perturbations, architecture of microcontrollers, design of control systems and their modelling, reliability and dependability analysis of control systems, neural network theory applied in control engineering.



The Institute is composed of:

Chair of Intelligent Control Systems (E-31)

Chair of Control Theory (E-32)

Division of Automatics Integrated Systems (E-33)

INSTITUTE OF INDUSTRIAL ELECTROTECHNICS AND ELECTRONICS (E-4)

Main research fields

Optimisation and synthesis of digital filters and electrical networks. Signals theory-analysis and synthesis. Analog and digital electronic networks and microprocessor systems. Systems and elements of optoelectronics thin film. Quality of electrical energy.

The Institute is composed of:

Division of Electronics (E-41)

Division of Circuit Theory and Signal Processing (E-42)

Unit of Power Apparatus and Systems (E-43)

Division of Vehicle Mechatronics (E-44)

CHAIR OF COMPUTER ENGINEERING (E-5)

Main research fields

Rapid system prototyping, fault tolerant computing, database architecture.

FACULTY
OF CHEMICAL ENGINEERING
AND TECHNOLOGY



Institute of Inorganic Chemistry and Technology (C-1)
Institute of Organic Chemistry and Technology (C-2)
Institute of Chemical Engineering and Physical Chemistry (C-3)
Chair of Chemistry and Technology of Polymers (C-4)

Dean

Prof. Andrzej STOKŁOSA, PhD, DSc

Vice-Deans

Jan RAKOCZY, PhD, DSc

Assoc. Prof. Barbara TAL-FIGIEL, PhD, DSc



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Degree courses and specialisations

The teaching covers two basic fields:

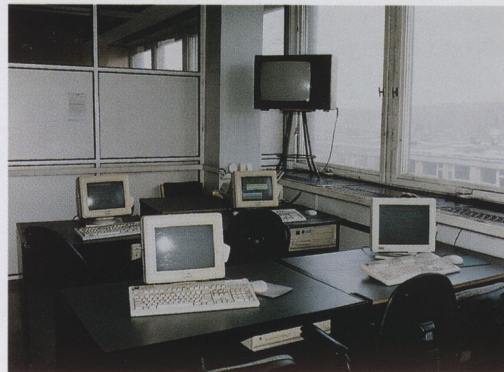
Chemical technology with specialisations: inorganic and organic chemical technology, polymer technology and petrochemistry computer chemistry, chemistry and technology of environment, and **chemical engineering** with specialisations: chemical and process engineering, chemical and bioprocess reactors engineering, bioengineering, analysis and development of industrial process.

Main research fields

Technologies associated with rare earth elements, the recovery of metallic elements from industrial wastes, utilisation of phosphogypsum, sulfidation of alloys in H_2/H_2S atmospheres; determination of trace concentrations of highly toxic pollutants-dioxins; combustion chemistry, fluidised bed combustion of coal and waste materials. Technologies associated with special polymer materials obtained by synthesis and polymer modification (polyurethane);

- Synthesis and structure of new organic compounds, particularly heterocyclic ones.
- Mass production industrial technologies leading to receiving mass raw materials for organic chemistry.
- Heterogeneous catalysis (oxide catalysts zeolites) reactions of alkylaromatic hydrocarbons, olefin metathesis, synthesis of ethers and oxidative conversion of hydrocarbons.
- Special purpose lubricants. Refining process optimisation.
- Degasification of coal. Studies of liquid coal derivatives.

Theory and engineering of chemical and biochemical reactors, mass and heat trans-



fer processes, multiphase systems hydrodynamics, heterogeneous catalysis, flue and effluent gas desulphurization.

Faculty and research staff

88 employees, including 15 professors, 6 PhD, DSc, 56 PhD holders.

Number of students

Total number of students: 856, first year enrolment 225.

INSTITUTE OF INORGANIC CHEMISTRY AND TECHNOLOGY (C-1)

Main research fields

Inorganic technology and in particular: chemistry of rare earth elements and technology processes of their recovery and extraction from industrial waste materials; solid state chemistry; utilisation of inorganic industrial wastes, especially from phosphoric acid and chromate production; chemistry and technology of gypsum based construction materials; corrosion, particularly of non-ferrous metals caused by sulphur compounds, anti-corrosion protection, highly reinforced surfaces, chemistry of combustion processes, chemical reactions in flames, fluidised bed combustion of coal and low grade fuels with simultaneous flue gas desulphurisation, chemical flame extinguishants and flame retardants; analytical chemistry with special reference to environmental pollution control and environmental protection,

passive sampling and determination of inorganic substances in air (nitrogen oxides, sulphur dioxide, ozone), determination of persistent organic pollutants (POP) in air, water, wastewaters, soil and industrial wastes, particularly polychlorinated dibenzodioxins (PCDDs) and dibenzofurans (PCDFs), chlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs) and chlorinated pesticides and herbicides, determination of metals in waste materials, soil and wastewaters, measurements of hazardous chemical substances in stack gases from incineration of hazardous wastes.

The Institute is composed of:

Section of Analytical Chemistry (C-11)

Section of Inorganic Chemistry (C-12)

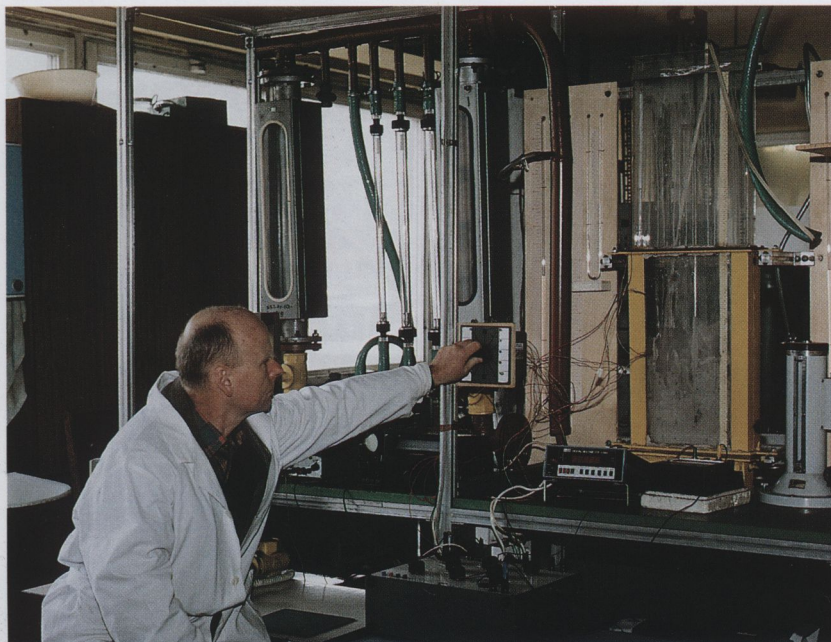
Section of Inorganic Chemistry and Technology (C-13)

Workshop for Air Inspection (C-14)

INSTITUTE OF ORGANIC CHEMISTRY AND TECHNOLOGY (C-2)

Main research fields

Organic chemistry, especially synthesis of new heterocyclic compounds, oxidative amination of aromatic compounds, benzylation of pyridine derivatives, quantum-chemical computation of the reactivity of heterocyclic compounds; cycloaddition reaction, technology of bulk organics intermediates, modification of zeolites, catalytic dehydrogenation and oxidative processes, transformation of alkylaromatic compounds,



methatesis of olefins, synthesis of oxygenates for reformulated gasoline, thermal modification of coal liquids; chemistry and technology of oil and gas processing, refining processes, lubricants technology, synthesis and modification of lubricant additives, environment protection in HPI (Hydrocarbon Processing Industry), calculation of simultaneous chemical and phase equilibria in crude oil processing, thermodynamics of hydrocarbons, mathematical modelling of petroleum processes.

The Institute is composed of:

Section of Organic Chemistry (C-21)

Section of Organic Technology (C-22)

Section of Petroleum and Gas Technology (C-23)

INSTITUTE OF CHEMICAL ENGINEERING AND PHYSICAL CHEMISTRY (C-3)

Main research fields

Experimental research on hydrodynamics, mass and heat transfer in multi-phase systems; theoretical and experimental work on non-conventional methods of liquid-liquid extraction; design and development guidelines for economic exploitation of devices for separating the components in heterogeneous systems; research on new methods and technologies of gas desulphurisation, development of flue gas desulphurisation methods; mathematical modelling of chemical homo- and heterogenic processes; theoretical studies on multiple steady states of autothermal systems; heterogeneous and homogeneous catalysis; theoretical and experimental studies on photoelectron transfer.

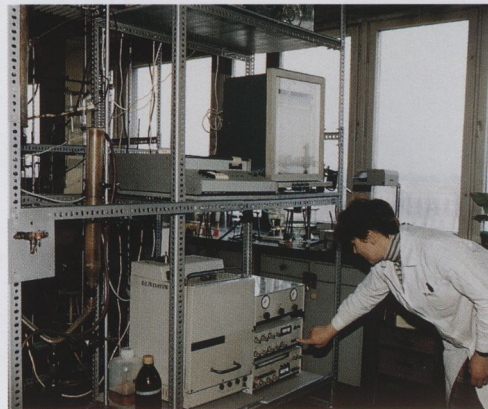
The Institute of composed of:

Section of Chemical Reactors and Mass Motion Kinetics (C-31)

Section of Physical Chemistry (C-32)

Section of Fundamental Processes and Equipment for Environment Protection (C-33)

Section of Mixture Separation and Process Thermodynamics (C-34)



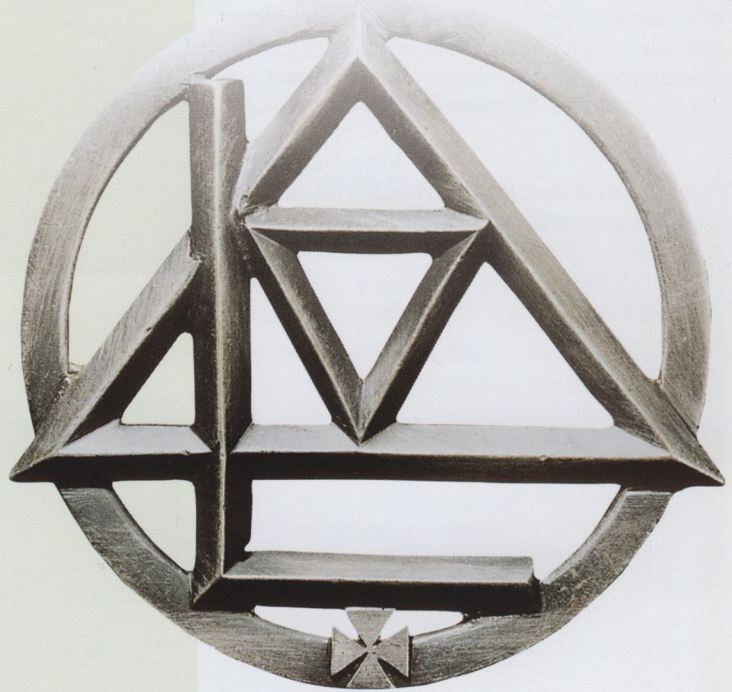
CHAIR OF CHEMISTRY AND TECHNOLOGY OF POLYMERS (C-4)

Main research fields

Polymer chemistry and technology, especially modification of polyvinyl carbazoles, flexible polyurethane foams, co-polymerisation of novel vinyl monomers obtained under Phase Transfer Catalysis, thermal stabilisation of polyvinyl chloride and its blends, thermal characteristics/flammability of polyurethanes, novel polyurethane-based composites, conducting blends of polyaniline, utilisation and recycling of plastic wastes (pyrolysis, gasification).



**FACULTY
OF CIVIL ENGINEERING**



Institute of Building Materials and Structures (L-1)
Institute of Road and Railway Engineering (L-2)
Institute of Building and Transport Management (L-3)
Institute of Structural Mechanics (L-4)
Institute of Computer Methods in Civil Engineering (L-5)
Division of Computational Mechanics (L-6)



Dean

Prof. Kazimierz FURTAK, PhD, DSc

Vice-Deans

Assoc. prof. Marian GWÓŹDŹ, PhD, DSc

Assoc. prof. Leszek MIKULSKI, PhD, DSc

Teresa ZAJĄCZKOWSKA, PhD, DSc

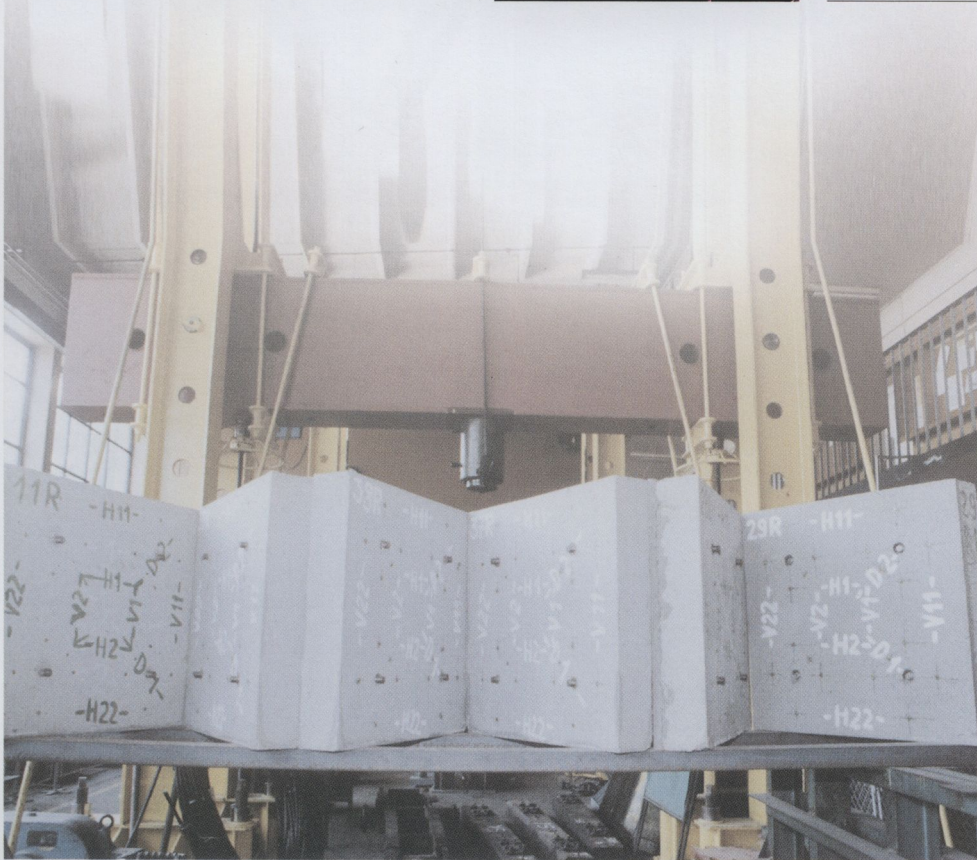
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Degree courses and specialisations

MSc full time courses (5 years)

CIVIL ENGINEERING

Specialisations: building structures, building technology and organisation, streets, roads and highways, railway lines, computational mechanics, theory of structural mechanics, building management, engineering of transport systems and management, hydro- and municipal engineering.

Vocational full-time (3,5 years) and external (4,5 years) courses

Supplementary MSc courses (2 years)

CIVIL ENGINEERING

Specialisations: general engineering, municipal engineering, building and engineering constructions, building technology and organisation, roads, streets and highways.

MANAGEMENT AND MARKETING

Specialisation: management and marketing in building engineering.

TRANSPORT

Specialisation: management and marketing in transport.

Post-graduate studies (1 or 2 semesters)

Specialisations: development management and exploitation in municipal public communication; organisation and marketing in railway transport; real property management and assessment (inter-faculty).

DSc studies (4 years)

Specialisations: structural mechanics (including computational mechanics), building materials and structures, organisation and management in civil engineering, railway and road construction.

Main research fields

Solid mechanics: theory of structures (statics, dynamics, stability), experimental methods, numerical analysis and optimisation; design theories and structural reliability; reinforced concrete and pre-stressed structures; steel structures; bridges; industrial structures; building materials technology, building physics; traffic engineering; building technology and management.

Faculty and research staff

306 employees, including 21 professors (two members of the Polish Academy of Sciences, three members of the Polish Academy of Arts and Sciences), 5 associate professors, 4 PhD, DSc, 91 PhD holders.

Number of students

Total number of students: 3928, first year enrolment 1411.



INSTITUTE OF BUILDING MATERIALS AND STRUCTURES (L-1)

Main research fields

Concrete and other building materials, service life of engineering materials and structures, environment protection, reinforcement and reconstruction of existing structures and buildings, prefabrication technology, technology of reinforced pre-stressed concrete structures, composite structures, probabilistic design methods, steel structures, theory of design of bridges and tunnels, energy-saving buildings design, non-conventional energy sources for building heating.

The Institute is composed of:

Section of Building Materials and Structure Protection (L-11)

Section of Concrete Technology (L-12)

Section of Reliability and Design of Metal Structures (L-13)

Section of Pre-stressed Structures (L-14)

Section of Reinforced Concrete Structures (L-15)

Chair of Bridges and Tunnels (L-16)

Chair of Steel Structures and Welding (L-17)

Section of Civil and Industrial Structures (L-18)



INSTITUTE OF ROAD AND RAILWAY ENGINEERING (L-2)



Main research fields

Road and intersection design; pavement technology and design; transport system planning; traffic and municipal transport modelling, simulation and management; highway and railway computer design; effects of roads and traffic on environment; railway track reliability; railway modernisation, maintenance and renewal; railway optimisation and technology.

The Institute is composed of:

Chair of Road and Traffic Engineering (L-21)

Section of Railway Track Engineering (L-22)

Section of Transport Systems (L-24)

INSTITUTE OF BUILDING AND TRANSPORT MANAGEMENT (L-3)

Main research fields

Systems of new building technologies; project planning; building economics and organisation; construction management; cost estimation and control; ergonomics; mechanisation of building works; technology and organisation of repair and modernisation works.

The Institute is composed of:

Section of Building Organisation and Economics (L-31)

Section of Building Technology (L-32)

Section of Building Management (L-33)

Section of Transport Management and Control (L-34)

INSTITUTE OF STRUCTURAL MECHANICS (L-4)

Main research fields

Bases of determination and evaluation of seismic and paraseismic influences on structures, dynamic identification of tower structures and multi-story buildings, investigation of dynamic properties and dynamic diagnostics of buildings, engineering structures and machine foundations, methods and calculations of strength in analysis of boundary states of structures and their elements made from elastic, plastic and rheological materials, methods of optimal control in mechanics of elastic systems, mechanics of contact.

The Institute is composed of:

Chair of Building Statics and Dynamics (L-41)

Chair of Strength of Materials (L-42)

Chair of Mechanics of Continuous Media (L-43)

Laboratory of Structure Mechanics (L-44)

INSTITUTE OF COMPUTER METHODS IN CIVIL ENGINEERING (L-5)

Main research fields

Computational methods in structural mechanics and theory of structures, finite elements methods; numerical methods, analysis of non-linear algebraic equations and integration of ordinary differential equations; optimum design of structures, optimum design under vibration and buckling constraints; analysis of inelastic structures, especially concrete structures; stability analysis of structures, plates and shells; application of artificial neural networks to the analysis and optimum design of theory of structures.

The Institute is composed of:

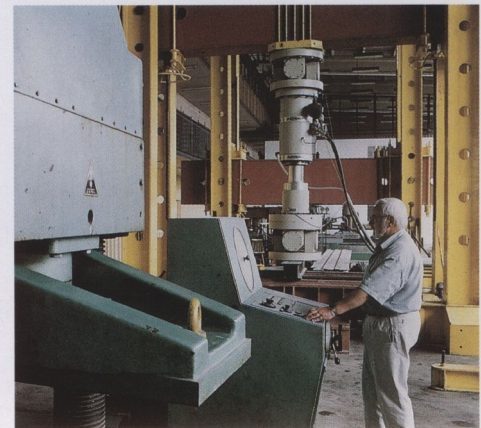
Chair of Computational Mechanics of Structures (L-51)

Division of Computational Methods (L-52)

DIVISION OF COMPUTATIONAL MECHANICS (L-6)

Main research fields

Computer methods of analysis and synthesis of structures as well as various boundary value problems in mechanics; research on: methods of physically based; approximation of experimental data; generalised finite difference method at arbitrary irregular grids and combined FEM/FDM system of analysis; methods of residual stress and strain analysis especially referred to railroad rails and vehicle wheels, methods of analysis of pneumatic membranes and cables.





FACULTY
OF ENVIRONMENT ENGINEERING



Institute of Water Engineering and Management (Ś-1)
Institute of Geotechnics (Ś-2)
Institute of Water Supply and Environment Protection (Ś-3)
Section of Hydro-Structures Mechanics (Ś-4)
Institute of Heat Engineering and Air Protection (Ś-5)

Dean
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Vice-Deans
Prof. Henryk BRYŚ, PhD, DSc
Piotr GRYGLASZEWSKI, PhD, DSc
Andrzej POTOCKI, PhD, DSc
Assoc. Prof. Andrzej PRYSTAJ, PhD, DSc



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Degree courses and specialisations

The teaching covers the following

Hydro-engineering; computer mechanics in environmental engineering; water supply; sewage and wastewater treatment, heating, air conditioning and air protection; earth surface protection; water management and hydrology; water system monitoring.

Main research fields

Methodology of mathematical modelling of flow and run-off in river catchments; flood protection studies; macro-scale models of water exchange dynamics in natural environment; short term hydraulic ground water management; hydro-meteorological data collection and processing, structural data bases using satellite data; investigation of biogenic and chemically detrimental substances in water habitat; hydraulics in municipal water facilities design; designing of complex hydrotechnical mountain catchments; numerical modelling of the effect of shrinkage and thermal changes on concrete of hydro-technical objects; designing of hydrotechnical structures; reliability of water supply, sewage disposal and environment protection systems; engineering hydro-geology; foundations and mechanics of soils; municipal wastewater recovery for industrial purposes; removal of biogenic compounds from sewage; small highly efficient biological wastewater treatment plants; mathematical modelling of heat and mass transfer processes in thermal systems; heating systems design; waste heat recovery in industrial and



municipal buildings; renewable energy sources in household; appliances for heat and power co-generation; solid waste disposal; desulphurisation of flue gases; compressor and absorption heat pumps.

Faculty and research staff

247 employees, including 9 professors, 19 associate professors, 4 PhD, DSc and 73 PhD holders.

Number of students

Total number of students enrolled: 2031; including regular daily courses 1216, first year enrolment 363; evening courses 791, first year enrolment 314.

INSTITUTE OF WATER

ENGINEERING AND MANAGEMENT (Ś-1)

Main research fields

Transport of water, pollution sediment; dynamics of river channels; flood control; hydraulics of water structures and municipal installations; water cycle; hydrology of mountainous and agricultural catchments; hydrologic operational systems; automatic systems of hydrometric data collection and management; stability of river channels; rivers and streams training; waterways; modelling of hydrotechnical systems; design of weirs and spillways; strength and stability of water structures; water management systems; informatic systems in water management; protection and exploitation of water resources; technological processes at water treatment plants.

The Institute is composed of:

Section of Hydraulics and Hydromechanics (Ś-11)

Section of Hydrology (Ś-12)

Section of Water Management (Ś-13)

Section of Hydro-Structures Engineering (Ś-14)

Hydrological Research Station in Stróża

Research Station in Catchment of Wielka Puszca

INSTITUTE OF GEOTECHNICS (Š-2)

Main research fields

Theoretical and experimental problems in soil and rock mechanics; new technologies in ground foundation works and construction; geotechnic problems in historical monument revalorization; industrial waste materials utilisation in geotechnics; petrographic, geological and hydro-geological problems in hydro-engineering; geodesic measurement of structure deformation.

The Institute is composed of:

Section of Engineering Geodesy (Š-21)

Section of Engineering Geology and Hydro-geology (Š-22)

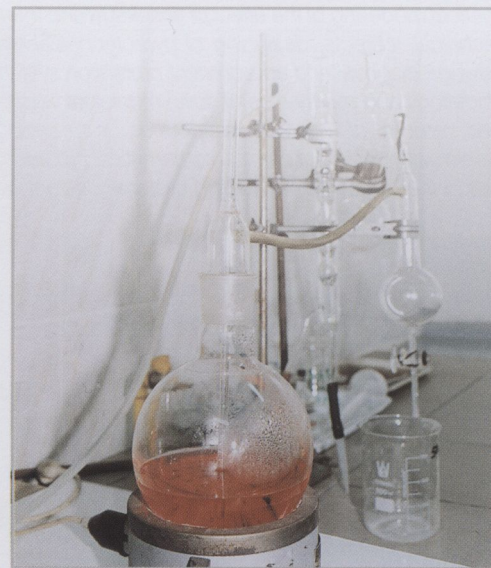
Section of Soils Mechanics and Foundation (Š-23)



INSTITUTE OF WATER SUPPLY AND ENVIRONMENT PROTECTION (Š-3)

Main research fields

Water supply of municipal and rural areas and industrial plants including water treatment, transportation, storage reservoirs and distribution networks; application of reliability theory in water and sewage systems; protection of impoundment reservoirs from negative impact of river damming; water and sewage system analysis; balneo-technical facilities; municipal, rural and housing



areas sewage collection; objects and units for wastewater transportation and storage; wastewater treatment and reclamation; sludge treatment and disposal; water and wastewater analysis; technological tests of drinking, industrial and special purposes water, municipal and industrial wastewater and storm water; utilisation and disposal of sludge from water and wastewater treatment plants; efficiency and energy consumption at wastewater treatment plants; advanced

anaerobic treatment plants; nutrient removal processes including biological removal of nitrogen and phosphorous; sanitary biology with emphasis on hydro-biology and epidemiology.

The Institute is composed of:

Chair of Water Supply and Sewage Removal (Š-31)

Chair of Water and Wastewater Treatment (Š-32)

Section of Environment Protection Principles and Systems (Š-33)

Section of Sanitary Biology (Š-34)

SECTION OF HYDRO-STRUCTURES MECHANICS (Š-4)

Main research fields

Numerical methods for the analysis of concrete and massive structures including rheological, thermal and dampness phenomena; mechanics of embankments subject to seismic loads - with computer science application.



**INSTITUTE OF HEAT ENGINEERING
AND AIR PROTECTION (Š-5)**

Main research fields

Mathematical modelling of heat and mass transfer processes; optimisation of thermal and refrigeration processes and systems; heating, ventilation and air conditioning systems in municipal and industrial complexes; evaluation of gas emission caused damage; combustion of gas, liquid and solid fuels in municipal appliances; coolants and their ecology friendly mixtures; heat management and technology; waste energy recovery by heat pumps; ecocybernetics in urban areas; municipal and industrial

solid waste disposal; cleaner technologies; fluidised bed reactors for solid waste incineration; hazardous hospital waste treatment; flue gases purification and desulphurisation.

The Institute is composed of:

Section of Thermal Processes, Metrology and Air Protection (Š-51)

Section of Heating, Thermal Systems and Waste Utilisation (Š-52)

Section of Ventilation, Air Conditioning and Refrigeration Systems (Š-53)





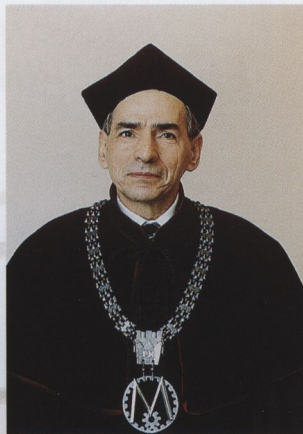
**FACULTY
OF MECHANICAL
ENGINEERING**



- Institute of Mechanics and Machine Design (M-1)*
- Institute of Materials Science and Metal Technology (M-2)*
- Institute of Heavy Duty Machines (M-3)*
- Institute of Automobiles and Internal Combustion Engines (M-4)*
- Institute of Industrial Apparatus and Power Engineering (M-5)*
- Institute of Production Engineering (M-6)*
- Section of Computer Science Application (M-7)*
- Institute of Railway Vehicles (M-8)*

Dean
Assoc. Prof. Stanisław MICHAŁOWSKI, PhD, DSc

Vice-Deans
Assoc. Prof. Jan KAZIOR, PhD, DSc
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Assoc. Prof. Wojciech ZALEWSKI, PhD, DSc



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e-mail: m-0@mech.pk.edu.pl

Degree courses and specialisations

Types of courses given at present:

MSc regular courses, evening (engineering and MSc) post-graduate, PhD courses. Within five major fields of education following specialisations are run:

MECHANICS AND MECHANICAL ENGINEERING

- medical engineering
- computational mechanics
- modelling and monitoring of machines
- automobiles and tractors
- automotive vehicles performance
- internal combustion engine
- power engineering systems and equipment
- refrigeration and air conditioning systems
- advanced technologies in mechanical engineering
- computer application in mechanical engineering
- railway vehicles

AUTOMATIC CONTROL ENGINEERING AND ROBOTICS

- multimedia in industrial systems
- automation of production processes

MATERIAL ENGINEERING

- construction materials
- management of quality

MANAGEMENT AND MARKETING

- management and reconstruction of plants
- management and marketing in transport

TRANSPORT

- systems and transport equipment
- operating of rail vehicles transport means

Main research fields

Inelastic bodies and structures; structural optimisation; gear dynamics; power mechanical systems; vibroinsulation systems; biomechanic plastics and composites; non-metallic inclusion in steels; properties of metallic materials; sintered and cast materials; powder metallurgy technology; pulsatory pressing; weldability assessment, CAD of experiments; design, analysis and testing of cranes, earthmoving and mechanical handling machines; design and testing of mechanical and hydraulic systems; design and investigation of vehicle chassis assemblies and IC engines; effect of in - service conditions on vehicle life and reliability; fuel and energy economy in transportation; application of substitute fuels; chemical and food industry apparatus; refrigeration and air conditioning; thermal energy systems; automation of manufacturing; mechanic design optimisation; industrial robots; simulation; machine tools and



machining; measurement processes and means; power hydraulics; railway vehicle dynamics and design; rail vehicle and rolling stock technology; rail vehicle technical operation processes and systems; technical infrastructure of rail vehicles.

Faculty and research staff

220 employees, including 19 professors (one member of the Polish Academy of Sciences, three members of the Russian Academy of Science, one member of the Austrian Academy of Science), 34 associate professors, 129 PhD holders.

Number of students

Total number of students: 3748, including regular daily courses 1759, evening courses 1989. First year enrolment 1201.

INSTITUTE OF MECHANICS AND MACHINE DESIGN (M-1)

Main research fields

Mechanics of inelastic bodies and structures under constant and variable loads, structural stability, optimal structural design under stability constraints and in creep conditions, toroidal shells, elbows and bellows, helical springs, decohesive carrying capacity, investigation of shape of bodies subject to full plastification at the stage of collapse, dynamics and design of gear systems, design and optimisation of pressure vessels, mini-wind power plants, numerical analysis of structures, vibration of continuous and discrete - continuous systems, dynamic analysis of pneumatic - mechanical vibroinsulation systems, analysis and optimisation of active vibroinsulation systems, experimental stress and strain analysis, experiment and design methodology in biomechanics, biomaterials, implants and surgical instruments, mechanical properties of plastics and composites and their application in pressure vessels and refrigeration, fatigue and tribology of plastics.

The Institute is composed of:

- Section of Mechanics of Deformable Bodies (M-11)
- Section of Machine Design (M-12)
- Section of Dynamics of Mechanical Systems (M-13)
- Chair of Experimental Mechanics and Biomechanics (M-14)



INSTITUTE OF MATERIALS SCIENCE AND METAL TECHNOLOGY (M-2)

Main research fields

Physical metallurgy of metals and alloys, steels for low and high temperatures, micro-alloyed structural steels, materials for powder industry, corrosion resistant materials, effect of non-metallic inclusions on steel properties, fracture properties and decohesion mechanisms in metals; quantitative metallography and fractography, heat and thermochemical treatment, thermomechanical treatment, theoretical and experimental foundations of plastic working, workability, welding of metallic materials, weldability and selection of materials for welded structures, welded joints properties; foundry: alloy crystallization, modern foundry technologies, serviceable properties of casts; powder metallurgy, sintering tools, methodology of experiments: CADEX programming, computer applications in steel materials engineering.

The Institute is composed of:

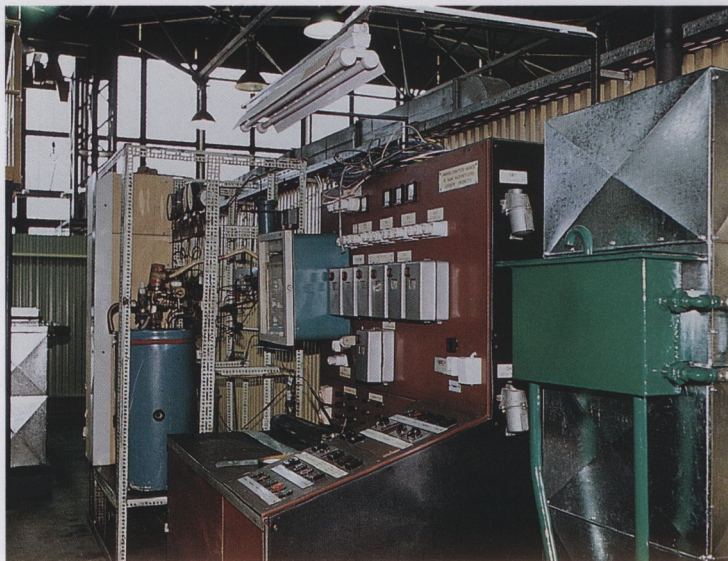
- Section of Physical Metallurgy (M-21)
- Chair of Plastic Working (M-22)
- Section of Heat Treatment (M-23)
- Section of Welding Technology (M-24)
- Unit of Foundry Engineering (M-25)
- Section of Powder Metallurgy (M-26)

INSTITUTE OF HEAVY DUTY MACHINES (M-3)

Main research fields

Computation methods and optimisation of cranes and conveyors constructions, dynamics of hydro-mechanical and electrical drives, transportation systems analysis, diagnostic and testing of heavy duty machines, including thermal and sound insulation, adaptation of heavy duty machines for extreme climatic and environmental conditions;

modelling and design of hydraulic drives and control equipment, diagnostics and testing of dynamical properties of power systems, research on automation of heavy duty motion; development of methods for structural, kinematic and dynamic analysis of mechanisms and manipulators, bases of synthesis and design of mechanisms of heavy duty machines, application of methods of the theory of mechanisms to testing and development of mechanisms used in heavy duty machines and vehicles, parametric optimisation of earth-moving machinery and equipment, dynamics of mobile heavy duty machines, in particular the influence of chassis type on kinematic excitation, methods of synthesis and design of optimum active systems for reduction of low-frequency vibration in heavy duty machines with hydraulic effectors; preparation of technical documentation for mechanical engineering, using various computer software such as (AutoCAD, InterCAD, WellCAM); CAD/CAM systems, specialised engineering software (CAE) and computer simulation software such as ACSL, NISA, Working Model, VisSim.



The Institute is composed of:

- Section of Crane and Transport Machinery Design (M-31)
- Section of Power Systems and Automation of Heavy Duty Machines (M-32)
- Section of Theory of Mechanisms and Manipulators (M-33)
- Unit of Engineering Graphics (M-34)

INSTITUTE OF AUTOMOBILES

AND INTERNAL COMBUSTION ENGINES (M-4)

Main research fields

Vehicle dynamics: effects of wheel guiding mechanisms parameters on vehicle handling; modelling of a passenger car using multibody dynamics; vehicle handling; measurement, recording and evaluation methods of vehicle dynamics (steady state circular test, transient response test); transfer of interaction forces between tyres and roadway; characteristics of tyres; methodology of estimation of parameters of vehicle stability and steerability; ABS and ASR systems for 4 WD vehicles – computer simulation and experimental research; transmission and drive systems optimisation for low emissions and fuel economy; hybrid and electrical drive systems; reduction of exhaust emissions; application of alternative and renewable fuels in engines (e.g. natural gas, alcoholic fuels, vegetable oils); noise and vibration in engines; turbo-charging processes; methods improving engine efficiency and fuel economy; low heat rejection engines; utilisation of waste energy of engines; computer simulation of engine processes; CAD of engine combustion; optimisation of inlet ports and air motion

in combustion chambers; fuel injection processes and spray characteristics; design of fuel injection equipment; cold starting of diesel and spark ignition engines; fuel systems for spark ignition engines; development of pneumatic fuel injection systems; development of two-stroke engines; automobile and engine diagnostics; automobile tribology; automobile production automation; energy and material saving methods and environment friendly technologies in automobile and engine production; application of plastics in automobiles; durability and reliability improvement methods in automobile production.

The Institute is composed of:

- Chair of Automobile Design (M-41)
- Section of Automobile Dynamics and Testing (M-42)
- Section of Automobile Exploitation (M-44)
- Section of Automobile Production and Safety Engineering (M-45)
- Section of Spark Ignition Engines (M-46)
- Section of Diesel Engines (M-47)
- Section of Special Engines (M-48)

INSTITUTE OF INDUSTRIAL APPARATUS AND POWER ENGINEERING (M-5)

Main research fields

Research on and design of apparatus and equipment for production and distribution of dispersed systems; heat and mass transfer processes, air pollution control and equipment; optimisation of thermodynamic and flow processes; non-Newtonian fluids dynamics and rheometry; measurements of thermal properties of fluids and solid bodies; improvement of balance methods and thermal systems measurement; computer simulation of reciprocating compressors, research on pressure pulsation in compressed gas pipelines, dynamics of steam boilers and power generating blocks; inverse heat conduction problems, remnant life prediction of pressure components; refrigeration and air conditioning; heat pumps and waste heat utilisation equipment.

The Institute is composed of:

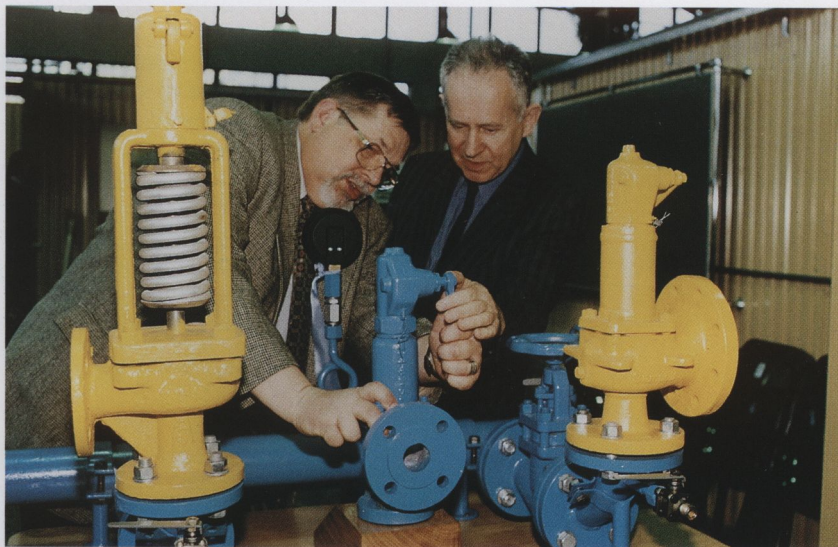
Chair of Industrial Equipment (M-51)

Section of Fluid Mechanics (M-52)

Section of Thermodynamics and Heat Machines Measurements (M-53)

Chair of Power Engineering Machines and Installations (M-54)

Section of Refrigeration and Air Conditioning (M-55)



INSTITUTE OF PRODUCTION ENGINEERING (M-6)

Main research fields

Automation and robotics of production processes in engineering industry; machining methods and computer control led systems; complex automation of machining, CAD/CAM design in technology, machining tools and elements; flexible manufacturing systems, automated machine tools, special technologies – e.g. wear resistant coating for tools and machine elements, methods and means of electromachining, tests on measurement and multicoordinate machines, application of laser in testing machines and equipment accuracy; design and diagnostic tests of machines, simulation and optimisation of production systems, theoretical and experimental research on hydraulic control elements.



The Institute is composed of:

Chair of Manufacturing Systems (M-61)

Section of Manufacturing Processes and Quality Systems (M-62)

Section of Machining and Cutting Tools Systems (M-63)

Section of Hydraulic Drive and Control of Technological Machines (M-64)

SECTION OF COMPUTER SCIENCE APPLICATION (M-7)

Main research fields

Computer methods for engineers in machine design (in co-operation with Institute M-2); research in computer aided design and experimental analysis, advanced approximation methods (neural networks, genetic algorithms).

INSTITUTE OF RAILWAY VEHICLES (M-8)

Main research fields

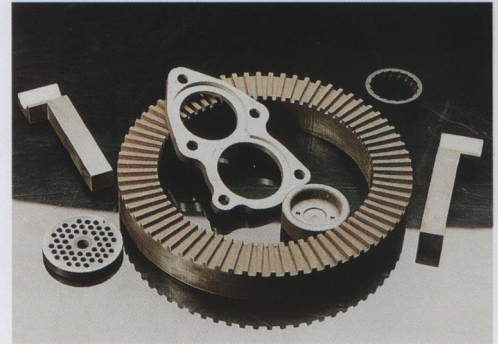
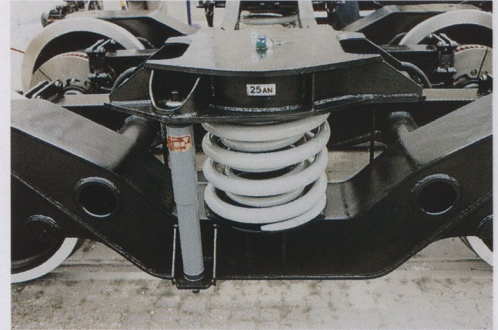
Tractive vehicle and rail car construction and design; drive and brake computation; braking system of rapid passenger trains and long freight trains experimental research; rail vehicle dynamics; dynamics of vehicle suspensions and drives; vibro-insulation systems; active and passive suspension; computational simulation of vehicle-track interaction on complex continuous models; rolling stock new technology of production and repair; new construction materials for rail vehicle elements; transport means' selection for modern transport markets; logistics in rail transport; technical infrastructure of rail vehicles; diesel locomotive diagnostics; rail vehicles and rolling stock reliability optimisation; basic types of wear of rail vehicles in relation to their reliability; investigation of technical operation processes; computer aided technical operation system; technical condition diagnostics of rail vehicles; ecology and environment protection in rail transport; computer simulation of technical operation processes; data bases of rail vehicle technical operation systems.

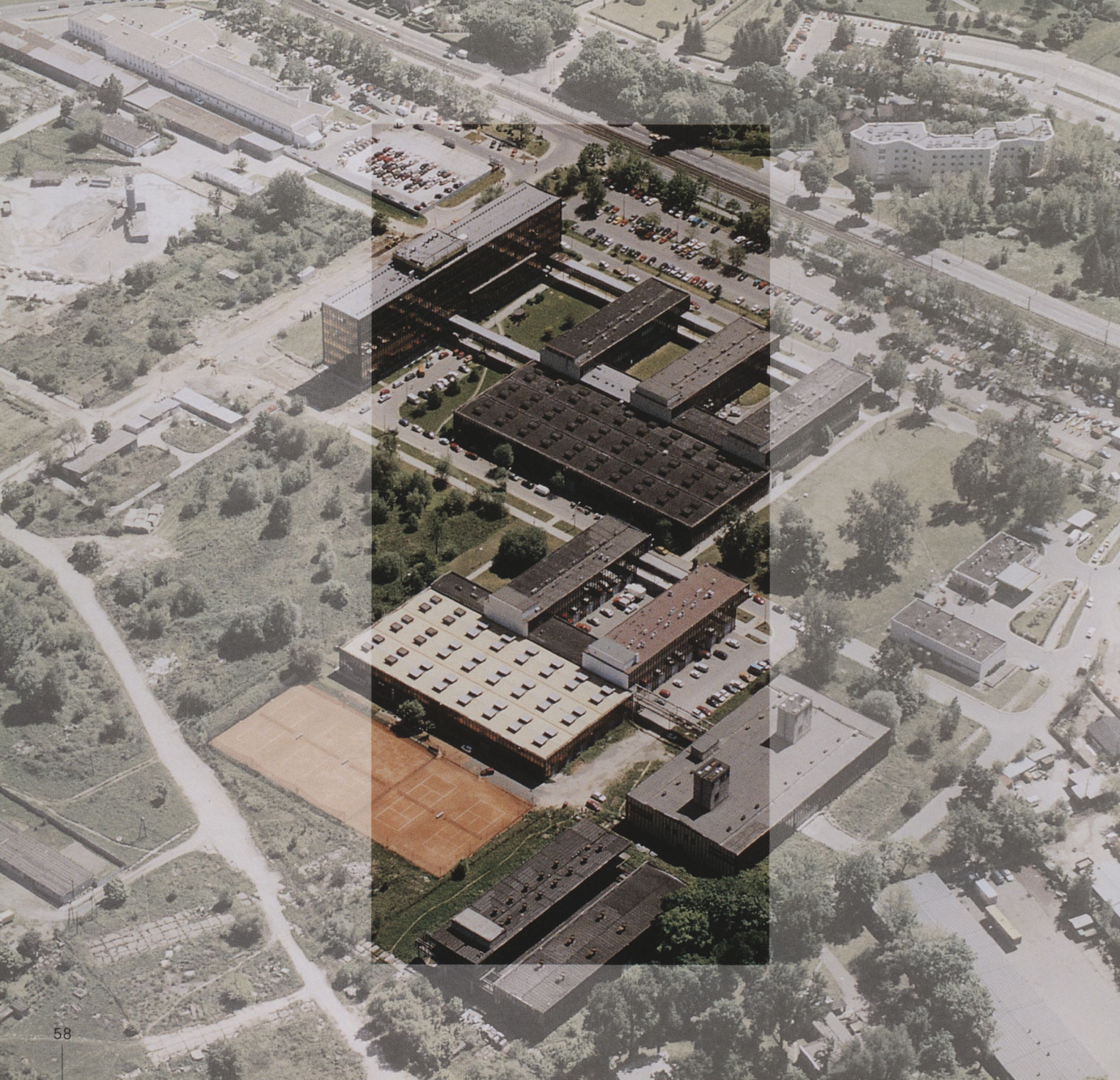
The Institute is composed of:

Section of Rail Vehicle Dynamics and Design (M-81)

Chair of Reliability and Technical Operation of Vehicles (M-82)

Unit for Technology and Infrastructure of Rail Vehicles (M-83)





INTER-FACULTY UNITS FOR TEACHING

Urban Educational Centre (O-2)

Foreign Languages Centre (O-3)

Physical Education and Recreation Centre (O-4)

Pedagogy and Psychology Centre (O-5)



Acting Dean

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URBAN EDUCATIONAL CENTRE (O-2)

The Urban Educational Centre was created at CUT in 1985 as an interdepartmental unit following a decision of the Minister of Science and Higher Education. The aim of the Centre is to train urban planners, especially from developing countries, as well as to undertake consulting and professional development activities in the urban and regional planning fields.

The Centre also runs yearly preparatory courses for foreign students intending to study architecture or other technical subjects in Poland.

ACADEMIC COURSES

Preparatory courses for PhD studies

The syllabus covers topics related to doctoral dissertations, Polish culture, and other topics related to candidates' interests.

The courses are run in English, but can be combined with the study of the Polish language.

PhD COURSES

The Urban Educational Centre offers PhD courses in the fields of urban and regional planning. Depending on the candidates' previous experience, the courses take between two and four years to complete.

Courses are offered in English, but can be combined with the study of the Polish language.

EXPERTS' OFFER

The Centre offers professional expertise and training in urban planning, architectural design and site planning, concerning also the developing countries. A great opportunity to undertake practical interdisciplinary projects is provided. PhD candidates can participate in actual projects, thus improving their professional experience and expertise. The course aims to prepare foreign students to undertake studies in architecture in Poland. The course comprises two semesters. The topics include the Polish language, history of art and architecture, free hand drawing and mathematics.

PREPARATORY COURSE FOR TECHNICAL STUDIES

The course is aimed for foreign students interested in technical studies other than architecture, as well as those interested in architecture studies but who do not have sufficient competence in drawing skills. The course comprises two semesters and includes the Polish language, mathematics and physics.

POLISH LANGUAGE COURSE FOR DSc AND POST-GRADUATE CANDIDATES

Vocabulary is adapted to the needs of the candidates.

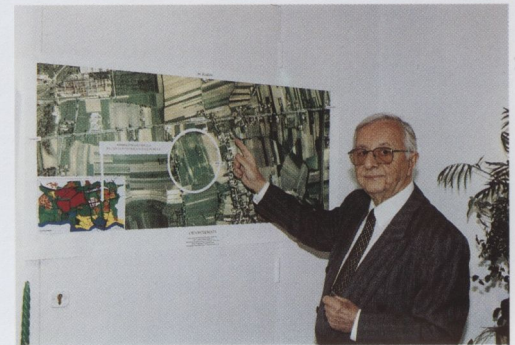
FOREIGN LANGUAGES

CENTRE (O-3)

Areas of activities

Six languages are taught : English, French, German, Italian, Russian and Ukrainian at different levels. The courses are offered for beginners, intermediate and advanced students. The aim is to prepare students to use specialist texts in a foreign language and be able to communicate in everyday situations. Specialist textbooks meeting the needs of the students of particular faculties have been worked out by the teachers of the Centre. The Centre is equipped with modern teaching devices: video, cassette recorders, satellite dishes that make programmes from all over Europe available and a library of over 10 000 volumes plus monthly and quarterly magazines both foreign and published in Poland. The Centre keeps up useful contacts with foreign institutions – the British Council, International House, Teacher Training College GamaBell, the Goethe Institute, Institut Français, Società Dante Alighieri Cimitato di Firenze, which co-operation helps in upgrading the teachers' qualifications and obtaining the latest teaching materials.

The Centre provides services in translation, interpretation and language consultancy.



PHYSICAL EDUCATION AND RECREATION CENTRE (O-4)

The Physical Education and Recreation Centre at the Cracow University of Technology has existed since 1951. At the moment, there are sixteen professional instructors employed at the Centre. The instructors are highly specialised coaches of various sport disciplines. The Centre has its own sports facilities: two gyms (one of them is situated at 17 Kamienna Street and was opened in 1996), three body building clubs, an aerobics room, sports fields and tennis courts. Besides, the Centre has access to a skating rink and a swimming pool.

Physical education is obligatory for all the students at all faculties for three or four terms. A wide selection of various sport disciplines, such as team games, swimming, skating, aerobics, athletics, tennis, skiing, rehabilitation gives the students an opportunity of a varied physical development.

The instructors at the Physical Education and Recreation Centre also work as coaches for various sports sections of the Academic Sports Club. The sections focus on professional sport disciplines.

The Centre, together with the Academic Sports Association, organises many national sporting events, such as: the Kościuszko Street Relay Race, Sailing Regattas, the Basketball Tournament, the Fiesta and the "Czyżynalia". The inter-faculty sailing courses held in the Centre Sailing Club in Żywiec and skiing courses give a possibility to encourage a large number of both students and professors to participate in the idea of "Healthy Lifestyle".



PEDAGOGY AND PSYCHOLOGY CENTRE (O-5)

The Centre runs courses for young university staff and graduates to improve their teaching skills. The participants obtain qualifications to work at various schooling systems. The Centre closely co-operates with vocational schools. It provides a wide offer of conferences and seminars on various aspects of education. The Centre also runs post-graduate courses for local education management.





Femirc Innovation Relay Centre and Regional Contact Point for the Fifth Framework Programme at Cracow University of Technology

Centre for Education and Research in Computation Science Systems Application

Centre for Education and Organisation of Quality Management

The University Library

Editorial Board of Publications

Printing House

Careers Counselling Office for Promotion of Students and Graduates

FEMIRC INNOVATION RELAY CENTRE AND REGIONAL CONTACT POINT FOR THE FIFTH FRAMEWORK PROGRAMME AT CRACOW UNIVERSITY OF TECHNOLOGY

Innovation Relay Centre was created at Cracow University of Technology under the EU Fourth Framework Programme. IRC is a member of FEMIRC network in Poland. The main role of FEMIRC is to help small and medium size enterprises in applying for resources available from the European Union under the Fifth Framework Programme, mainly for technology transfer and development of industry-academic co-operation. The activities of the FEMIRC branch at CUT started on Jan. 1, 1997, following the result of EU competition in 1996. These activities are co-funded by KE. The CUT Centre is one of five associate partners and covers the districts of southern Poland.

Main aims of FEMIRC:

- to establish an infrastructure for information and consultancy of EU R&D activities;
- to facilitate the participation of Polish institutions in technology transfer (sector of small and medium-sized enterprises);
- to assist promotion of Polish innovation supporting services using European network of IRC, to pilot implementation of innovative processes, access to specialised data bases, sharing experience with twin partners, participation in RTD Framework Programmes.

Three Innovation Relay Centres are to be established. At present the information can be obtained at Tel. (+48 12) 632 47 95, 628 28 45;

E-mail: femirc@lajkonik.vis.pk.edu.pl

rpk.pk@lajkonik.vis.pk.edu.pl

CENTRE FOR EDUCATION AND RESEARCH IN COMPUTATION SCIENCE SYSTEMS APPLICATION

The aim of the Centre is to find financial funds from research run together with firms related to the Special Economic Zone. The chief goal is to co-operate commercially with software producing companies to assist in management and control of social welfare institutions, computer aided integration of production and decision taking processes.

Main tasks of the Centre:

- co-operation in research undertakings with firms located in the "Kraków" Economic Zone;
- training for selected students of CUT Faculties in the field of computation science systems application;
- post-graduate courses (on commercial bases), including consultancy; courses for managerial staff of companies, local government institutions in the field of implementation and use of computation systems.

The Centre for Education and Research in Computation Science Systems Applica-

tion is an institution which helps co-operate marketing and computer software agencies and CUT. The graduates have a chance of participating in Information Society Technology development.

CENTRE FOR EDUCATION AND ORGANISATION OF QUALITY MANAGEMENT

The aims of the Centre are:

- courses and training periods in industrial safety, ISO standards on quality management for managerial and production staff;
- preparation of research and teaching laboratories for accreditation;
- preparation for introducing quality management in teaching process, research and school management;
- measurement and assessment of labour posts in view of professional risk, lightening, microclimate and other industrial safety risks.

THE UNIVERSITY LIBRARY

The Library is located on three sites (the Central Library in Warszawska Street and in two Students Residential Halls DS-2 and DS-4 in Czyżyny Campus). It has a total bookstock of 310.000 volumes and subscribes to 1020 periodical titles. The Library houses collections connected with the teaching and research of the University: architecture, civil and water engineering, sanitary engineering, mechanics and machine design, vehicle and railway transport, electronics, chemistry and chemical technology, computer science, scientific information. The books, periodicals and special collections (standards, patents, business reference materials, graphics, audio-visual aids etc.) are available in the reading rooms and in a loan service system. The system covers mainly technical publications but also fiction. The loan facilities can be used to obtain materials (Polish and foreign) not on the shelves. The reading room in DS-4 is equipped with reading apparatus and microforms are also available to students and staff.

There are reprographic facilities available: photocopies, xerox, microfilms and slides can be obtained. The Section of Scientific Information provides catalogues, documentation, factographic resources, texts translations. It also runs teaching of librarianship and summer practical trainings for students of librarianship. Also every University student is trained at the beginning of academic year. Library works out Bibliography of publications of the University Research Staff and Selected Lists of Recent Foreign Acquisitions. Both are available databases on WWW home page of the Library.

The British computer programme TINLIB for every library task (acquisition, cataloguing, circulation, serials) was implemented. It is possible to obtain access to the Library OPAC via telnet (bib.biblos.pk.edu.pl, ID: tinlib, Passw.: tinlib) or via World Wide Web (WWW) (<http://www.biblos.pk.edu.pl>).

The Library co-operates with technical libraries from Great Britain, Germany, USA, the Netherlands, Spain and Greece among others in the scope of TEMPUS PHARE projects.



EDITORIAL BOARD

OF PUBLICATIONS

The editorial activities cover three types of publications:

Scientific publications, such as: *Scientific Papers of Cracow University of Technology*, (Series: *Architecture, Civil Engineering, Environment Engineering, Mechanics, Chemical Engineering and Technology, Electrical and Computer Engineering, Basic Sciences, Humanities, Social and Economics Sciences*), conference proceedings, *Technical Bulletin* (its tradition dates back to the beginning of the 20th century, as an affiliation of the Polish Polytechnic Association in Lwow). It is published in series: *Architecture, Civil Engineering, Chemistry, Mechanics and Electrical Engineering*.

Teaching materials, i.e. academic books, manuals and other teaching aids.

Reference materials, such as catalogues, illustrated folders and leaflets on the activities of the school or particular faculties.



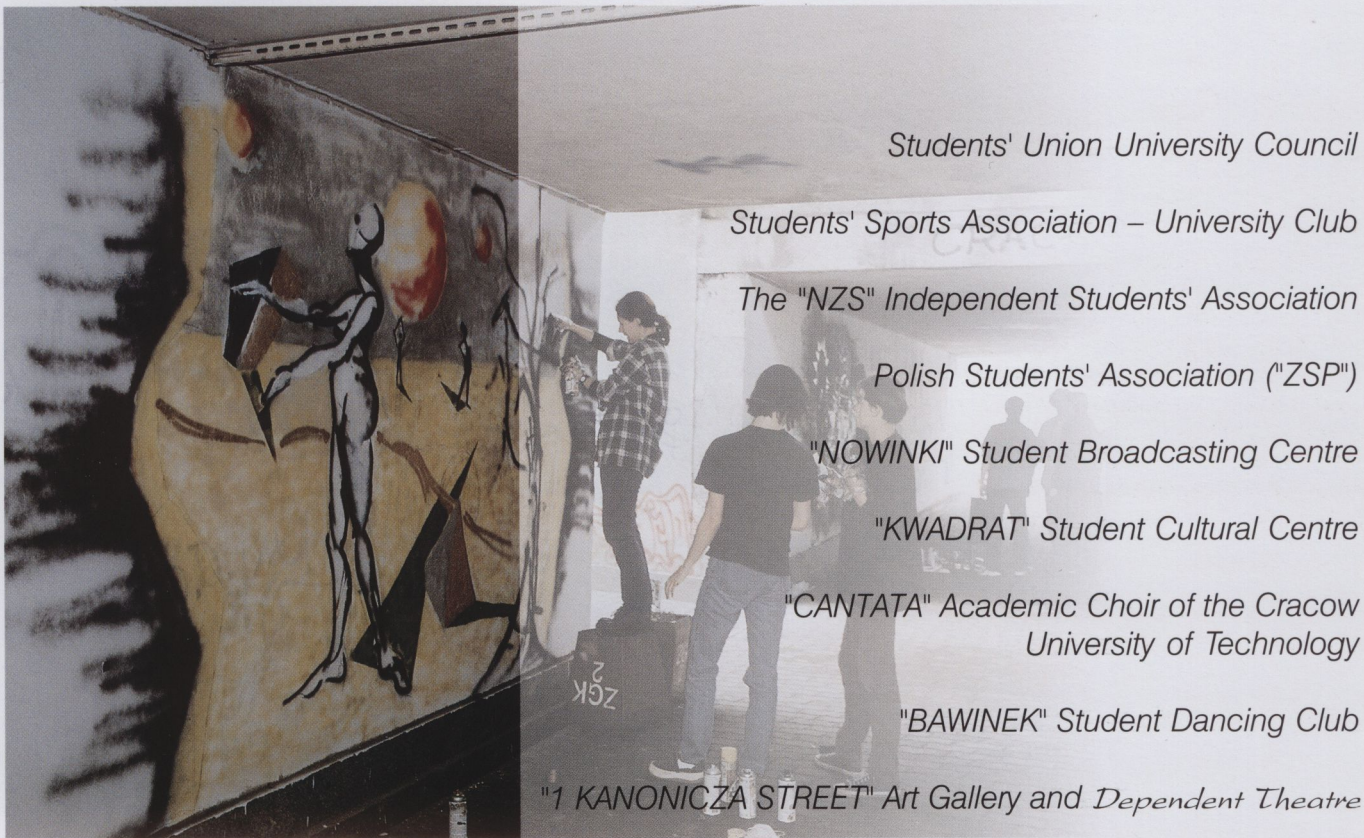
PRINTING HOUSE

Area of activities:

Printing of Scientific Papers, manuals and other teaching aids, books of reference, conference proceedings as well as forms for the needs of the school administration for the needs of the school.

CAREERS COUNSELLING OFFICE FOR PROMOTION OF STUDENTS AND GRADUATES

The aim of the Careers Counselling Office is to help graduates in their attempt to find employment. Students' counsellors are well qualified to give professional advice and organise courses to help students to take decisions concerning their future career. Another important role of the Careers Office is to establish contacts with future employers, organise employers' presentations at the University and provide information about various offers of occupation (permanent, half-time) as well as employers' requirements. The Office offers free distribution of guidebooks for graduates and gives access to a comprehensive register of firms/companies. Twice a year INTRO workshops are arranged (Introduction to Labour Market and Engineering Employment Market). The CUT Careers Counselling Office is a member of the Polish Careers Counselling Offices Net and co-operates with similar institutions in Great Britain and Holland.



Students' Union University Council

Students' Sports Association – University Club

The "NZS" Independent Students' Association

Polish Students' Association ("ZSP")

"NOWINKI" Student Broadcasting Centre

"KWADRAT" Student Cultural Centre

*"CANTATA" Academic Choir of the Cracow
University of Technology*

"BAWINEK" Student Dancing Club

*"1 KANONICZA STREET" Art Gallery and *Dependent Theatre**

Cracow University of Technology Staff Club and the "GIL" Gallery

Association of Alumni of Cracow University of Technology

"NASZA POLITECHNIKA" Bulletin



STUDENTS' UNION UNIVERSITY COUNCIL

All students become members of the Union automatically. Its task is to represent students before the School authorities, participation in governing the School via its representatives in collective bodies and organization of students' living conditions.

There are following permanent commissions of the Union:

- for social affairs, which deals with the distribution of places in student hostels, scholarships, grants and benefits,
- for teaching affairs, which participates in all works connected with current teaching activities and changes of the teaching process at particular faculties.

The union does not represent opinions or postulates of any political party or other student organization.



STUDENTS' SPORTS

ASSOCIATION – UNIVERSITY CLUB

The Academic Sports Association has been actively operating at the Cracow University of Technology for forty-nine years now. The Association co-operates with the Physical Education and Recreation Centre. Nowadays there are 34 sports sections with 650 student sportsmen and sportswomen taking part in the College League competitions and in the National College Championships. For years the members of the Academic Sports Association have been leaders in the College League rankings and gold winners in the National College Championships.

Various sports events such as the Kościuszko Street Relay Race, the Strzelec Basketball Game, Sailing Regattas, and other championships give the students, professors and university staff a great opportunity to live active lives.

THE "NZS" INDEPENDENT STUDENTS' ASSOCIATION

The "NZS" Independent Students' Association is a socio-political student organisation which has developed its activities at the Cracow University of Technology for twenty years now. "NZS" was established owing to the students' protests in 1980-1981. The present "NZS" is the so-called third generation at our University. The Association was reactivated by the end of 1996. Its principle objectives are to awaken the awareness of the young generation, to form proper citizens' and patriotic attitudes (for example by political meetings and disputes, demonstrations, pickets, various campaigns against, for instance, sects), to organise such activities as mountaineering rallies, bonfires, etc. Towards the end of 1997 the first issue of the students' newsletter called "Lobby" was published.

POLISH STUDENTS' ASSOCIATION ("ZSP")

This is an All-Polish Association uniting academic youth for the purpose of joint defence of rights and demands of the university milieu and developing students' interests and personalities. This Association organizes camps and "Freshers" events for the 1st year students, also walks and rambles, as well as cultural performances. It is a legal entity and, so, it offers employment seeking services and student accommodation facilities services.

"NOWINKI" STUDENT BROADCASTING CENTRE

Student broadcasting began at the university in 1951, but became established in 1959 when the "Nowinki" Student Broadcasting Studio was opened. The title derived from the name of the students' hostel (the Bydgoska Street in Cracow) in which it was based (although it was commonly known as the "Radio behind the Wardrobe"). In 1976 a new hostel was opened and the broadcasts were transmitted via a new broadcasting studio at the Czyżyny settlement.

The move into another hostel provided the facilities to make and broadcast programmes. However, in 1979 the two stations were connected by Cable and, in 1980, it became known as the "NOWINKI" BROADCASTING CENTRE. Since 1988, the programmes have been broadcast from the Skarżyńskiego Street.

The radio station broadcasts news services, current and important University concerns and issues, along with information about cultural events and attractions of Cracow (theatre, cinema, music, student cabarets, other events).

"KWADRAT" STUDENT CULTURAL CENTRE

This student Cultural Centre at CUT was established in 1992, under the auspices of the University Board of the Academic Sporting Association, as well as CUT Hostels Council. During those 9 years, the "Kwadrat" Centre has developed very successful activities and, thus, has become an important element of the CUT students' cultural life. Cultural events organised by "Kwadrat" include: discos,



traditional CUT balls ("The Freshers' Ball", the "Andrew's Day Ball", the "New Year's Eve Ball"), election of "The Nicest CUT Student", cabaret and/or rock-group performances. The "Kwadrat" also offers TV programs, music, etc.; all events enjoy great popularity and attract great attention. The managers of the Centre are very pleased that usually the most interesting and engaging happenings and performances are those organised and run by students.

The major features of the events are: naturalness, typical "CUT students-like" aura, spontaneity and interesting, vibrant contents. The history of the Centre is rich and fascinating, so is its present day. Soon, our students will amuse themselves at the "The 2000 Freshers Ball" during which our 1st year students will be finally accepted as "full rights" students of the Cracow University of Technology.

"CANTATA" ACADEMIC CHOIR OF THE CRACOW UNIVERSITY OF TECHNOLOGY

"Cantata" – Academic Choir of the Cracow University of Technology was established in 1990. Students (male and female) of all Cracow colleges and universities can be members of this Choir.

The Choir ensemble focuses its main interest on ancient religious and secular music, both Polish and European. With regard to the performance potential and, for the purpose of gaining new experiences, the Choir's repertoire is constantly improved and enriched by adding to it masterpieces originating from various historic epochs, including Polish folk music, carols, patriotic songs, and Church Slavonic music. "Cantata" Choir successfully took part in All-Polish Festivals and Reviews of Academic Choirs that were held in such music centres as Wrocław, Gliwice, Warszawa, and our home City of Cracow.



The Choir performed concerts in the Czech Republic, Germany, Finland, Austria, and Hungary, and enjoyed great acclaim.

"BAWINEK" STUDENT DANCING CLUB

The "Bawinek" Student Dancing Club has been developing its activities for 37 years. The Club's dancing partners took part in all most important dancing events in Poland and abroad and were successful in various Competitions and Championships. For example, in November 1997, several major prizes were awarded to the pairs of this Club during the Cracow Region Championship.

Now, there are 20 dancing pairs improving their skills in classes from E to S.

"1 KANONICZA STREET" ART GALLERY AND *Dependent Theatre*

Art Gallery "1 Kanonicza Street" and The *Dependent Theatre* are housed in the cellars of a renovated 16th C building in 1, Kanonicza street. Since 1979 the Gallery has been an integral part of the Cracow University of Technology and its cultural ambassador. People who meet here are all art lovers, amateurs and professionals, artists and art lovers. The exhibitions are a kaleidoscope of painting, drawing, photography and sometimes sculpture by the staff, students and graduates of



both CUT and other Cracow universities (Fine Arts Academy, Jagiellonian University, Academy of Pedagogy). Also graduates of arts schools all over Poland are invited, also foreigners, disabled persons united in the Foundation of Arts for Disabled and the Polish Association of the Deaf.

The Dependent Theatre took under its roof non-institutional theatres. The professional actors performing in small theatrical troupes can realise their dreams impossible to realise in state run theatres. The Dependent Theatre is a symbiosis – the artists, the stage and the audience are mutually dependent. The variety and richness of the repertoire attract various audience, including pre-school children, primary school pupils and secondary school students.

Theatre companies constantly co-operating with the Dependent Theatre include the Theatrical Association Dialog, Theatrical Society MISZUNG, the PROSCENIUM Theatre, the AKNE Theatre, the MIST Theatre.

A cycle of "Tournaments Read Your Own Poem" are regularly organised. Together with the Institute of English Philology, Jagiellonian University, and the Rotunda Club the Theatre participates in yearly celebrations of "Bloomsday" devoted to James Joyce.



THE CRACOW UNIVERSITY OF TECHNOLOGY STAFF CLUB AND THE "GIL" GALLERY

The Cracow University of Technology Staff Club was established in 1973 by the Rector of the University - Professor Władysław Muszyński. Together with the Club, a new "GIL" Art Gallery was founded as a part of it. The Gallery developed its activities in the Club's premises; its name "GIL" was invented by Mr. Stefan Papp. From the beginning the Gallery enjoyed great popularity, and its exhibitions attracted real attention.

Under the "martial state" in Poland in the early eighties, the Gallery suspended its activities, and started them again in October 1986. For twenty years, the Gallery was housed in the building of the Faculty of Chemistry and, in 1993, it was moved to the first floor in the building housing the University canteen. During all those years from 1973 until today many creators and artists have exhibited their works in the Gallery, among them people and organisations as famous as Krystyna Wróblewska, Janina Kraupe-Świdowska, Adam Hoffmann, Ludomir Śleńdziński, Stanisław Rodziński, Jan Świdorski, Wiktor Zin, "Wprost" Group (Jacek Waltoś, Zbylut Grzywacz, Leszek Sobocki, Maciej Bieniasz, Barbara Skąpska), Roman Skowron, Sławomir Lewczuk, Stefan Dousa, Ewa Golo-górska-Kucia, Irena Popiołek, Leszek Dutka, Adam Brincken, Andrzej Kapusta, Grzegorz Bednarski, Tadeusz Boruta, Jarosław Kawiorski, Teresa Zabzeska, Ewa Ławrusiewicz, Wojciech Cwierniewicz, Edward Dwurnik, Stanisław Kuskowski, Stanisław Tabisz, Jan Zych, Paweł Zechenter, Jadwiga Kaim-Otręba, Kazimierz J. Flaga and many, many others.



Of course, the Gallery has to invited and promoted many less known artists, thus creating an opportunity for them to introduce their works and to enter the artistic world, existing not only in Cracow.

The recent jubilee exhibition, held to honour the 25th anniversary of the Gallery, was a great event in the University's history. The works of more than 80 artists who had already exhibited their works here, were shown this time, too.

ASSOCIATION OF ALUMNI OF CRACOW UNIVERSITY OF TECHNOLOGY

The Association of Alumni was founded in 1958 on the ground of General Assembly resolution. The aim of the Association is to encourage former students to maintain links with the University, to keep up the traditions of the School and provide the opportunity to stay in touch with colleagues as well as to keep up and develop the principles of ethics of the profession. The Association assists its members in scientific and qualifications upgrading and exchange of experience; it takes care of the young people starting their professional career; it organises financial assistance to the members and their families.

The main aims of the Association are defined in the Statute and carried out by the Board by organising scientific sessions and meetings and publishing the proceedings; arranging conventions for graduates of particular years, constant co-operation with the School authorities; creating a fund for the assistance to the members and their families; organising branch affiliations in the country; allocating grants; publication of bulletins on the activities of the Association and School.

The members of the Association are holders of the Association badge. The Association awards honorary membership and a Golden Badge to persons of particular merit. To celebrate the 40th anniversary of the Association "A Roll of Honours" was initiated. The

inscription in the Roll is a special distinction conferred on persons who by their work and personal commitment have achieved outstanding success in their professional, organisational or political activities and thus promote the Cracow University of Technology both in Poland and in the world. The prerequisites are – studies at CUT, scientific degree or title and many years' links with our School as well as unimpeachable reputation.



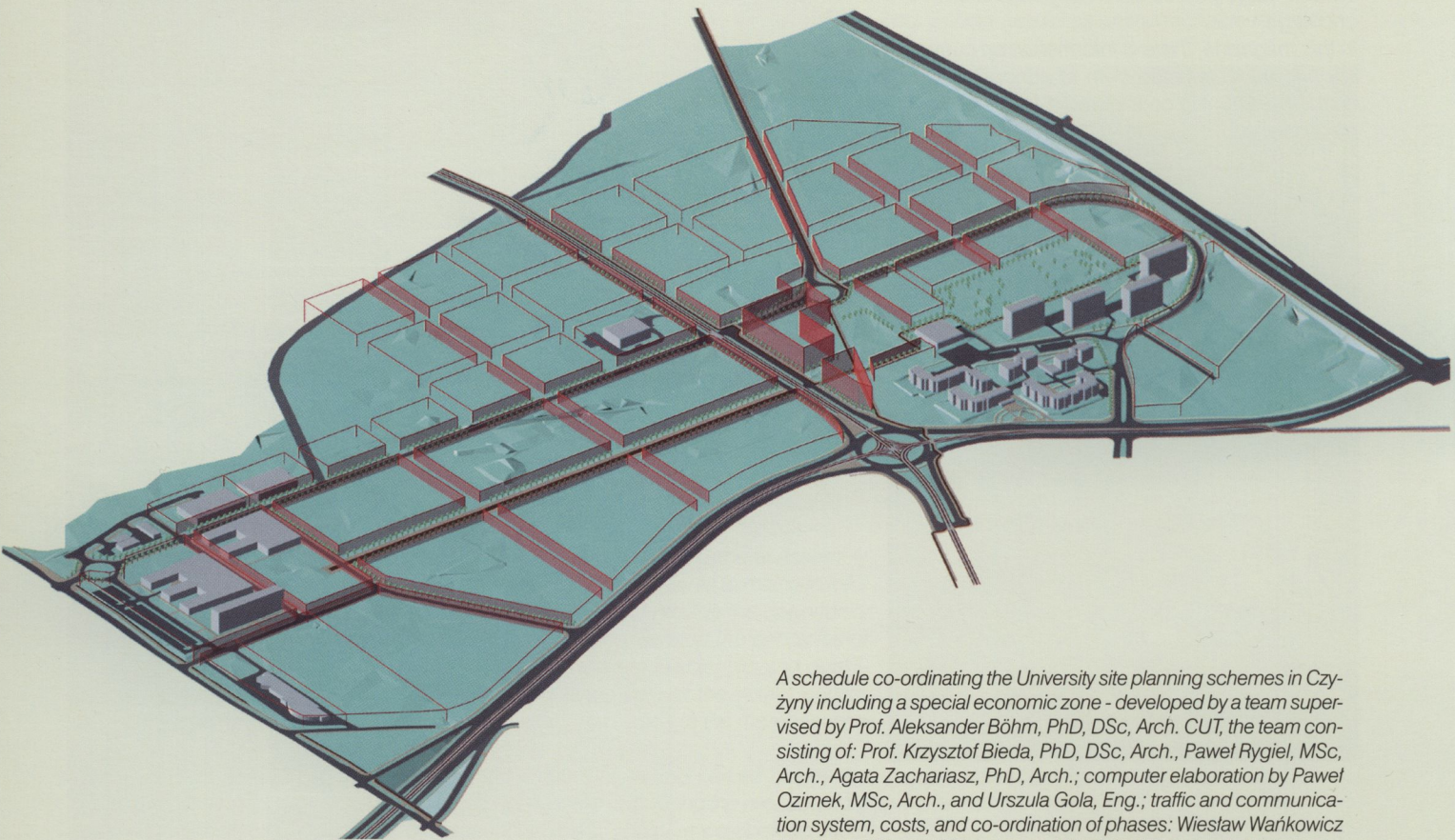
"NASZA POLITECHNIKA" BULLETIN

"Nasza Politechnika" Bulletin is a magazine issued every two months since it appeared in 1997. It is addressed to the community of the Cracow University of Technology, and each edition has a hundred 36-page copies with many illustrations, and is distributed free of charge.


In this magazine, there is information on current events at the University and news referring both to education and students' social and cultural affairs; it is considered a forum of exchanging opinions and discussions.



special
Economic Zone Kraków



A schedule co-ordinating the University site planning schemes in Czyżyny including a special economic zone - developed by a team supervised by Prof. Aleksander Böhm, PhD, DSc, Arch. CUT, the team consisting of: Prof. Krzysztof Bieda, PhD, DSc, Arch., Paweł Rygiel, MSc, Arch., Agata Zachariasz, PhD, Arch.; computer elaboration by Paweł Ozimek, MSc, Arch., and Urszula Gola, Eng.; traffic and communication system, costs, and co-ordination of phases: Wiesław Wańkowicz (Institute of Physical Planning and Municipal Economy); infrastructure: Andrzej Trzos, MSc (Intersystem Project Group)



Special Economic Zone – CRACOW TECHNOLOGY PARK OF CRACOW UNIVERSITY OF TECHNOLOGY – CZYŻYNY CAMPUS

Following the voivode's application the Council of Ministers in October '97 made the decision to establish a Special Economic Zone in Cracow. The Zone is located on three plots in Cracow: in Pychowice (19,34 ha - the owners: the Municipality of Cracow and Jagiellonian University), on the grounds of the Sendzimir Steelworks in Branice (17,6 ha – owned by the Steelworks) and on the grounds owned by the Cracow University of Technology (29,53 ha on CUT's Czyżyny Campus). The status of the Special Economic Zone has been defined as Cracow Technological Park and at the same time this is the name adopted for the SEZ. In this way the main function of the zone has been determined as the development of high technologies in the area.

According to the definition used by the European Union (Directoriat XIII) "a science park" called sometimes "a technological park" is a development project located close to one or more institutions of higher education and research centres or which has good working links with such institutions. The objectives of starting a science park are as follows:

- creation of and support for companies that are knowledge-based firms,
- facilitation of technology transfer from the local academic and research centres to companies and organisations active in the park or outside.

The Special Economic Zone - Cracow Technology Park is aimed at:

- development of the high technologies sector using the scientific and research potential of Cracow scientific community,
- creation of favourable economic, infra-structural and organisational conditions for Polish and foreign investors who declare the readiness to use and to develop the existing scientific and research potential in Cracow in the domain of high technologies,
- assistance in development and restructuring of the existing companies, mainly small and medium ones,
- support for teaching and curricula development in Cracow universities.

In accordance with the legal regulations the owners of the grounds together with the State Treasury created the unit which manages the SEZ: the Cracow Centre for Advanced Technologies Ltd. CUT signed an agreement with the Centre authorising it to conduct negotiations with the potential investors and to carry out the investment projects in the zone on behalf of the University.

One should remember that the idea of a science park encompasses much larger scope and contents than the Special Economic Zone. What is important is that the project should be carried out and developed with the participation of the whole scientific community in Cracow. Only then the basic aim of the whole undertaking can be achieved and that is: increasing the national and international competitiveness of our region. To secure this aim, the Minister of Economics called into being the Zone's Programme Council which will evaluate the planned investments. The universities which own the grounds of the developed Science Park are represented by the members of the Supervisory Board.

Granting the status of the Special Economic Zone to the Cracow Technology Park will facilitate and accelerate:

- restructuring of heavy industry and development of the Cracow region;*
- development of Cracow as an academic and scientific centre;*
- development of the region in line with the ecological policy of the State.*

CUT has been for a long time well prepared to act in this field. Planning, design and organization works connected with the Technology Park within the Special Economic Zone on CUT's campus are at present in full progress.

Development conditions: area of the Technology Park is qualified as a "public services area". It constitutes a part of the concept of development of the Czyżyny area in the framework of which, among other things, the following facilities are being put into existence: the Aviation Museum (a former airstrip used by ambulance aviation is localised on the territory of Czyżyny), scientific and didactic facilities belonging to the Cracow University of Technology, recreation and sports facilities of the Academy of Physical Education and others. No additional conservator's or ecological preservation conditions have been made in respect to the area of the Technology Park. Zone for municipal development.

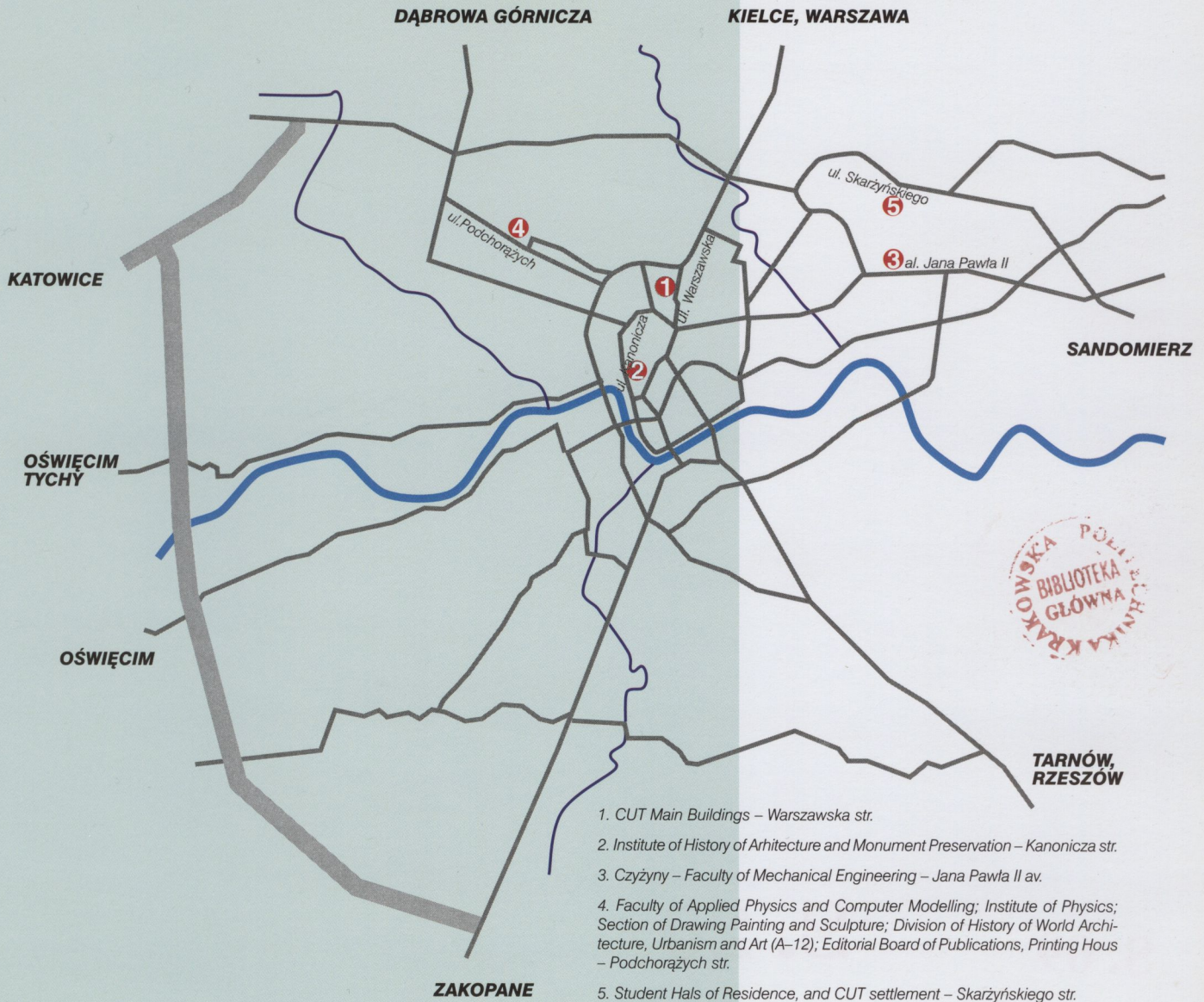




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Situational Plan – Special Economic Zone – Cracow Technology Park of CUT – Czyżyny Campus

Situational **Plan** CUT



S. 09

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