



A COMMUNITY OF KNOWLEDGE

Eötvös Loránd University, Budapest (Hungary)



DEAR READER,

Welcome to a virtual tour of Eötvös Loránd University. As you may know, ELTE is Hungary's "first university", a true national institution. Its leading role is clear in the areas where it provides instruction. Our teachers have assumed the traditional roles of educating future generations and preserving and expanding the nation's knowledge. Our goal is nothing less than upholding high standards of excellence. Simply put, ELTE's strategy is focused on quality.

In addition to teaching, ELTE is also quite proud of its research activities, which have been given new momentum by the institution's designation as a research university. By obtaining this classification, our university has also officially become one of Hungary's five best institutions. This publication also contains a separate chapter highlighting the important role and diversity of research here. In an introductory document such as this one, it is not possible to describe all of the valuable initiatives taking place. Instead, we have decided to present a small sample of the university's activities in order to give the reader a general overview.

In addition to its research and educational duties, a modern university also helps its students by offering a variety of services. The pages which follow outline our extensive international contacts, our nurturing of talent, and our cultural activities. In this regard, ELTE is the country's leading university.

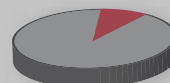
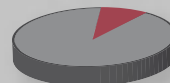
Dr. Barna Mezey

Rector



One of Hungary's largest universities

- 29,952 students
- 9,700 students admitted per academic year
9.8% of all first-year university students in Hungary
- 26,558 applicants,
representing 9.8% of all applicants to higher education institutions
- 15,109 applicants listed ELTE as their university of first choice.
This represents 10.5% of all applicants to higher education institutions.



Hungary's largest centre of scholarship

- 1,098 qualified instructors
- 72 instructors who are members of the Hungarian Academy of Sciences. These represent 20% of all the Hungarian Academy of Sciences members who are instructors.



Hungary's largest selection of educational programmes

- 8 faculties
- 32,238 courses
- 69 bachelor's degree programmes
- 91 master's degree programmes
- 34 master's-level modules for teachers
- 72 post-graduate specialised studies
- 29 foreign language study programmes
- 17 doctoral schools offering 95 doctoral programmes





The Bolyai János Prize is an award given by a foundation established through private donations of Hungarian businessmen and businesswomen. This interdisciplinary recognition, which is not tied to any particular field of study, is given to Hungarian scholars who have made significant contributions by international standards in research, development, and fostering the education of future generations or in using the results of such work in the social and economic sector. An independent, 15-person committee is responsible for selecting the prizewinners.

That three ELTE scholars were deemed worthy of the Bolyai Prize, perhaps the most important, civil recognition in Hungarian academic circles, highlights the leading role of our university. Awarded every two years, the Bolyai Prize was bestowed three times in a row on instructors from ELTE. The prizewinners were László Lovász, mathematician, in 2007; Zsigmond Ritoók, philologist and antiquities researcher, in 2009; and András Perczel, chemist, in 2011.

2007

László Lovász, mathematician

László Lovász was born in Budapest in 1948. He won nearly all the mathematics competitions in which he participated. Some of the competitions he won were "Ki miben tudós?" (Who is a scholar in what field?), KöMaL (Mathematical and Physics Journal for Secondary Schools), OKTV (National Secondary School Competition in Academics), the International Mathematics Olympiad, and the Miklós Schweitzer Competition. He completed his studies in mathematics at ELTE in 1971. As a fourth year university student, he defended his doctoral dissertation on graph factorization. It led to the Perfect Graph Theorem, which became famous the world over. In 1979, he solved one of the most famous problems of information theory, the Shannon problem. His article on this, published in the journal IEEE Transactions on Information Theory, became the publication of the year. At the age of 31, he became a member of the Hungarian Academy of Sciences. He is a pioneer in promoting algorithmic reasoning and is one of the leading figures of theoretical computer science. His area of expertise also includes combinatorics and graph theory. In 1999, he was awarded the Wolf Prize, considered the Nobel Prize of mathematics. In 2010, he won the Kyoto Prize, a Japanese award similar to the Nobel Prize. He served as President of the International Mathematical Union from 2007–2010. He has been Director of the Mathematics Institute of ELTE University's Faculty of Science since 2006.



2009

Zsigmond Ritoók, philologist and antiquities researcher

Zsigmond Ritoók is a professor emeritus of ELTE University and a member of the Hungarian Academy of Sciences. He was born in 1929 in Budapest and was awarded a teaching degree from ELTE University in Latin and Greek. He worked as a teaching assistant at the university from 1952 to 1958. He then taught in a secondary school and later worked in the Antiquities Research Department of the Hungarian Academy of Sciences. It was only in 1986 that he resumed teaching at ELTE. From 1987 to 1993, he headed the Department of Latin Language and Literature. In 1999, professor Ritoók retired from his teaching duties, though he occasionally returns to give lectures. His areas of research were early Greek epics and dramas, the concept of aesthetics in the ancient world, and furthering the study of antiquities in today's world. Professor Ritoók is the only recipient of the Bolyai Prize who has not worked in the field of science. In his acceptance speech, he stated that there are values which may not directly yield profits but which we must not forget. He wrote the following message in the visitors' book for the prize: "It is better to be a beggar than to be uneducated."



2011

András Perczel, chemist

Born in 1959 in Budapest, András Perczel graduated from ELTE University in 1985. He has been teaching at ELTE University's Faculty of Science since 1987 and oversees student laboratory exercises. He conducts lectures on organic chemistry and specialised ones related to structural research. From the very beginning his area of interest was peptides, small polymers and protein fragments composed of amino acids. Professor Perczel has also studied the diversity of protein structures related to this area and the manner in which they move. In 1995, he spearheaded research on biomolecules at ELTE University, which first began with solution-phase structural research of proteins. In addition, he was instrumental in founding a nuclear magnetic resonance centre (NMR) for biology research in Hungary. In the interview he gave after receiving the award, he stated that, "In addition to persistence and a sense of vocation, it is essential to be curious. This curiosity helps the researcher experience joy when delving into his subject. If one can become absorbed in one's work like a painter creating a masterpiece, then one can truly blossom."

6 INTERNATIONAL RELATIONS



ELTE is one of the Hungarian universities having extensive links with organisations abroad.

In addition to the 370 European universities participating in the Erasmus programme, we cultivate ties with 120 institutions of higher education around the world. Thanks to such cooperation, there is not a part of the world today where we

are not able to engage in common projects. Despite these large numbers, it is not quantity but quality that counts. Among our partners are universities placed at the top of international rankings, such as University College London, the University of California, Berkeley, Kyoto University, Utrecht University, Humboldt University of Berlin, Heidelberg University, Lomonosov Moscow State University, Sapienza University of Rome, Complutense University of Madrid, and the Sorbonne in Paris. Every day ELTE receives official visitors—diplomatic delegations, ambassadors, and university representatives—from every corner of the globe.

MOBILITY



ELTE University coordinates a number of mobility programmes. Our institution's most important grant programme is the Erasmus programme, which offers university students, instructors, and administrative staff opportunities for exchanging ideas and experience on an international level. The annual budget of this programme exceeds 1 million euros. Of all Hungarian institutions, ELTE University sends the most scholarship students abroad. Cooperation with other mobility programmes such as CEEPUS (Central European Exchange Program for University Studies), the Norwegian State Education Loan Fund, and other bilateral student mobility schemes, allows our university to send abroad and receive more than 1,000 students each year. In addition to the different international and national mobility programmes, ELTE is the only university in Hungary to receive and send abroad visiting instructors and researchers via the so-called "Foreign Competition" framework, the goal of which is to strengthen the university's international character.



UNIVERSITY NETWORKS

ELTE is a member of major university networks such as the Coimbra Group (CG), the Utrecht Network (UN), the Universities from the Capitals of Europe (UNICA), the European University Association (EUA), the Danube Rectors' Conference (DRC), and the Central European Initiative University Network (CEI UniNet). Through these networks, ELTE is in contact as an indirect partner institution with organisations such as the University of Cambridge, the University of Oxford, and the University of Bologna. On the one hand, these networks offer universities possibilities for representing their interests on an international level. On the other hand, they also offer opportunities to participate in programmes such as the ExchangeAbility Project of the UNICA, the goal of which is to involve students with disabilities in mobility programmes and to improve the quality of such programmes.

JOINT STUDIES

In conformity with the latest directives of the European Higher Education Area, ELTE is placing a greater emphasis on expanding its offering of joint study programmes. One of the primary areas of this is creating elite study programmes to draw the most talented students from leading scholarship schemes of the European Union. Among our featured joint degree courses are our Erasmus Mundus programmes ensuring mobility and closer ties among higher education institutions: the master's programme of the Atelier Department of the Faculty of Humanities and the doctoral programme of the Criminology Department of the Faculty of Law. The former is the first Erasmus Mundus programme coordinated by a Hungarian university. The latter is the first doctoral-level Erasmus Mundus course of study in Hungary. In addition to the above, our university offers a wide range of interesting joint courses of study such as the Faculty of Humanities' cooperation with the University of Florence and the Faculty of Science's multidisciplinary Forensic Science course of study.



Eötvös Loránd University offers degree programmes at undergraduate (BA/BSc), graduate (MA/MSc) as well as postgraduate (PhD) levels. A wide range of programmes and courses – either full-time or part time – are available in English and other foreign languages. Some programmes offer special preparatory courses. A successfully completed preparatory programme is acknowledged with a certificate, and automatically ensures admission to the BA/BSc programmes. Please visit the website of the relevant programme.



Degree programmes in English (* available)

<http://www.elte.hu/en/degree-programmes>

Name of the Programme	Preparatory year	Bachelor level	Master level
Biology	*	*	*
Chemistry	*	*	*
English and American Studies	*	*	
English and American Studies (American Studies)			*
English and American Studies (English Studies)			*
Ethnic and Minority Studies			*
TEMA Erasmus Mundus Master Course (JOINT PROGRAMME)			
European Territories (Civilisation, Nation, Region, City): Identity and Development			*
French (major of Romance Studies)*		*	*
German (major of Germanic studies)*		*	*
German as a minority language and literature (major of Germanic studies)*		*	*
History			*
Hungarian Studies			*
Italian (major of Romance Studies)*		*	
Logic and Theory of Science			*
Mathematics			*
Physics	*	*	*
Polish Language and Literature*			*
Portuguese (major of Romance Studies)*		*	*
Postgraduate Master's Course in Forensic Science (JOINT PROGRAMME)			*
Psychology		*	*
Romanian (major of Romance Studies)*		*	*
Russian Language and Literature*			*
Software Information Technology (Computer Science)	*	*	
Spanish (major of Romance Studies)*		*	*

*Linguistic programmes (French, German, Italian, Polish, Portuguese, Romanian and Russian are taught in the relevant language)

Ph.D. level

DCGC Erasmus Mundus Doctoral Programme
(JOINT PROGRAMME) Doctorate in Cultural and Global
Criminology (from 2012)

Doctoral School of Literary Studies
German literary and linguistic studies

Doctoral school of Linguistics
Doctoral School of History
Doctoral School of Philosophy
Doctoral School of Ethnography
Doctoral School of Art History
Doctoral School of Biology

Doctoral School of Chemistry
Doctoral School of Earth Sciences
Doctoral School of Environmental Sciences
Doctoral School of Mathematics
Doctoral School of Physics



http://www.elte.hu/en/summer_university

ELTE Carpathian Basin Hungarian Summer University

1-week course, 2 ECTS (planned)

2-8 July 2012

The one-week-long summer university programme is the only summer university programme which is taught in Hungarian. Participating students can select from 4 scientific areas: law; humanities; science and IT, the afternoon cultural programmes are held together. The programme is open especially to the Hungarian young people living in foreign (neighbouring) countries.

ELTE HLCCP

Hungarian Language Course and Cultural Programme

4-week language course, 6 ECTS (planned)

5-31 August 2012

This 4-week programme offers an intensive Hungarian Language Course with many cultural components. The intensive language course is designed for students with various Hungarian

language background. Students can select from 4 levels according to their knowledge: beginner, elementary, intermediate and advanced. In the afternoon students can participate in various cultural programmes, classes, folk dance, visits to museums etc. The HLCCP Hungarian language course is designed for individual development of students and their learning performance is tracked during the programme.

ELTE EILC

Erasmus Intensive Language Course for incoming Erasmus Students

3-week language course, 5 ECTS (planned)

12-31 August 2012

This 3-week intensive Hungarian language course has been designed for incoming Erasmus students who want to start learning the Hungarian language and to know more about the Hungarian culture. Incoming Erasmus students can apply for EILC grant at the HOME university Institutional Erasmus Co-ordinator, but it is also possible to join the programme as an exchange student, or an individual (without student status).

ELTE – Ruprecht Karls University Heidelberg

2-week course; 3 ECTS (planned)

2-14 September 2012

In 2009 ELTE and Ruprecht-Karls-University Heidelberg signed an agreement on a joint summer university programme. Since then several students of ELTE and Heidelberg have attended the two week long interdisciplinary course. This summer university programme is open only to students of ELTE and students of Heidelberg University.

10 “ATELIER” FRANCO-HUNGARIAN SOCIAL SCIENCES CENTRE



FACULTY OF HUMANITIES



The Atelier has been active in fostering international cooperation between ELTE, the Hungarian Academy of Sciences, the French Institute of Budapest, and the School for Advanced Studies in the Social Sciences (EHESS) in Paris since 1988. In 2000, the doctoral programme was expanded to include the Social Sciences Centre, whose primary focus is scholarly research, networking, and publications linked to the Atelier. Today the Atelier is a department of ELTE's Faculty of Humanities. Its goal is to support dissertations analysing topics related to Hungary which use the approach of the French Annales School. The Atelier Department of European Social Studies and Historiography of ELTE's Faculty of Humanities is coordinating the first Hungarian Erasmus Mundus project, which has been a great success. The title of this programme is "Building Blocks of European Territories: Civilisation, Nation, Region, and City." The competition entry entitled "Identity and Development" won funding worth €150,000 for the period 2011–2016. Within this framework, ELTE has launched a joint European master's programme with the School for Advanced Studies in the Social Sciences (EHESS) in Paris, the University of Catania in Italy, and Charles University in Prague.



THE CONFUCIUS INSTITUTE AT ELTE UNIVERSITY

II



FACULTY OF HUMANITIES

The Confucius Institute at ELTE University is China's only official cultural institute in Hungary. Its mission is to allow as many people as possible to learn Chinese and to discover Chinese culture through various classes, scholarly programmes, and publication of books and study materials. By doing so, it aims to foster ties between Hungary and China. The Chinese government decides where to establish Confucius Institutes around the world. In this manner, in 2004 a number of Confucius Institutes were set up all over the world. In December of 2006, the Confucius Institute at ELTE University was inaugurated through the cooperation of our university and the Beijing Language and Culture University and the support of the Chinese National Office for Teaching Chinese as a Foreign Language (Hanban). In 2011, the directors of the Confucius Institutes in Europe gathered at ELTE to discuss current issues affecting their Institutes. The fact that the meeting was held at ELTE highlights the importance of our Confucius Institute.

RUSSIAN STUDIES CENTRE AND LIBRARY

In 2008, the different organisational units at ELTE which dealt with Russian studies merged under the name of the Russian Studies Research and Methodology Centre. With financial support from the Russkiy Mir (Russian World) Foundation, the Russian Studies Centre and Library opened in February of 2009. While this state foundation had previously inaugurated 18 such institutes around the world, ELTE's Russian Studies Institute was the first to be opened in Central Europe. The Russian Studies Centre and Library aim to promote education at the university, but it is also open to all those interested in Russian language and culture. The Russian Studies Centre organises national and international conferences and round table discussions, and it takes part in the bachelor's, master's, and doctoral level instruction of history majors. In 2010, a master's programme in Russian Studies was launched.



FACULTY OF HUMANITIES

12 UTILIZING THE RESULTS OF RESEARCH



In a modern, knowledge-based society, higher education plays a crucial role in making use of knowledge. The role of knowledge and technology transfer and the need to create organisational units at the university to nurture this have become increasingly important over the last decade. Following this line of reasoning, ELTE has set itself the goal of introducing a new business-scholarly culture in its knowledge and technology transfer plan. In operation since 2006, the main task of the Office of Knowledge and Technology Transfer is to bridge the gap between the university and industry, thus helping to make the university's research results useful to businesses. In order to do this, it maintains and cultivates strategic partnerships with large corporations, small and medium-sized enterprises, and state and other non-profit organisations. The role of technology transfer is not primarily to generate income. It is instead to catalyse the process by which a discovery leads to a product.

PRIZE FOR INNOVATIVE RESEARCHERS AT ELTE

The basis of successful technology transfer is of course researchers and innovations they bring about. To recognise such excellent research results, ELTE established the Prize for Innovative Researchers at ELTE in 2009. Every year on ELTE's Day of Innovation, this award is bestowed on the researcher who has contributed the most to having scholarship which began here used for the benefit of the university. The first person to win the prize was András Lőrincz, a physicist and information technology specialist, for his work on human-computer interactions (e.g. facial expression recognition and monitoring of eye movement) to help children with special needs. In 2010, Imre Kacsóvics, an immunologist, was awarded this recognition. He and his colleagues developed a new procedure through which it was possible to significantly increase both the quantity of antibodies produced and their effectiveness in genetically modified animals. Biophysicist Gábor Horváth and biologist György Kriska were given the prize in 2011 for their research on polarisation patterns in nature. Their studies have, for example, lead to the development of cloud detectors and traps for horseflies.



ERICSSON SOFTWARE TECHNOLOGY LABORATORY AT THE FACULTY OF INFORMATICS

With the creation of this software laboratory, the university has become an international competency centre for Ericsson where undergraduate and graduate students work together with the company's researchers on current software development problems. This partnership is an excellent opportunity for students to apply their skills to projects based on market needs. Furthermore, it allows them to contribute to world-class software development solutions with their creative work.

COOPERATION WITH MAGYAR TELECOM

In this partnership, Magyar Telecom and ELTE both play an active role in bringing about knowledge transfer. Actual business experience and practice-oriented instruction can complement the theoretical knowledge of ELTE graduates and the company. In this manner, professional competencies necessary in the business environment are nurtured and developed.

STRATEGIC FRAMEWORK AGREEMENT WITH SANOFI-AVENTIS/CHINOIN

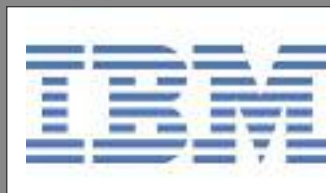
Experts from sanofi-aventis/Chinoïn support the university's programmes in pharmaceutical production and research through meetings held with university personnel, professional consulting, and special courses. In addition, they help university students by providing advice on preparing reports, theses, and doctoral dissertations and offer internships to young people in the summer and during the school year.

SPECIAL LANGUAGE LABORATORIES PROVIDED BY IBM

With financial support from IBM, ELTE has purchased special furniture, computers and peripherals, and equipment and software to assist the visually impaired. For example, computers were equipped with programmes for screen readers and screen magnifiers. Refreshable Braille displays were purchased to help blind students. Web cameras were set up for people who are hearing impaired. Those having dyslexia or dysgraphia can use programmes that help in reading and writing. Using such tools allows students with disabilities to study foreign languages independently. By acquiring such competencies, they will have an easier time finding employment.

JOINT PROGRAMMES WITH MOL

This cooperation serves to forecast the company's needs for experts, to develop course materials, and to strengthen a practice-oriented course of study. ELTE and MOL are launching various joint professional training programmes and are elaborating research and development projects which are both innovative and results-oriented. With MOL's financial support, infrastructure is being upgraded, and educational and international master's programmes are being developed.



ELTE'S SPECIALISED, SUPPLEMENTARY PROGRAMMES FOR STUDENTS TO DEEPEN THEIR KNOWLEDGE IN THEIR FIELD OF STUDY



ELTE is not just one of Hungary's largest universities, but it is also a citadel for training the best and the brightest. One of its primary missions is to nurture talent through specialised, supplementary programmes, called *kollégium* in Hungarian, which are themselves steeped in tradition. The oldest of our institutions for fostering academic excellence is Eötvös Collegium. Using the École Normale Supérieure in Paris as his model, Loránd Eötvös founded the secondary school teacher training college in 1895. Though Eötvös Collegium now bears scant resemblance to its pre-war predecessor, its goal has remained unchanged: to train well educated experts who have above average knowledge of their field, who are capable of independent research, and for whom the cultivation of scholarship is not just for one's profession but also for a teaching vocation. Two-thirds of the university students in Eötvös Collegium are in the Faculty of Humanities, and the rest are in the Faculty of Science, the Faculty of Informatics, and the Faculty of Social Sciences.



Today ELTE has a network of these *kollégiumok* covering all areas of scholarship taught at the university. Based on the English college system, ELTE's *kollégium* for students of law and political science was founded in 1983 and is now called the ELTE Bibó István Kollégium. In 1992, the institution for fostering excellence in natural sciences and informatics, Bolyai Kollégium, was founded. The social sciences *kollégium*, founded in 2004, schools its members to become well prepared, educated, informed social science experts with a broad perspective in their field. For those interested in psychology, pedagogy, and health science, we offer the Illyés Sándor Kollégium, where students have been honing their scholarly and professional skills since 2007.

UNIVERSITY RESEARCH PROJECT ENTITLED “FOR KNOWLEDGE ON A EUROPEAN SCALE, ELTE”

Our university succeeded in winning a tender of Hungary's National Development Agency which sought to raise the quality of higher education institutions through research and development, innovation, and improvement of teaching. With funding of 3 billion forints from the European Union and the Hungarian government, the project will run from 01 June 2010 to 31 May 2012. Its goal is to build up ELTE's international competitiveness by improving the quality of teaching and research and by reinforcing the conditions necessary for personal and organisational excellence. ELTE's eight faculties will participate in the five sub-projects. The project will be completed under the direction of our internationally recognised researchers. These scholars come from very diverse areas of study—natural sciences, humanities, law, social sciences, education, and psychology—and will work together in an interdisciplinary manner. Professional Director of the competition: András Patkós.

1. LARGE SYSTEMS IN THE NATURAL SCIENCES AND COMPUTER SIMULATIONS (FACULTY OF SCIENCE, FACULTY OF SOCIAL SCIENCES)

Director: András Málnási-Csizmadia

Professional Director: László Lovász

2. SUBMICROSCOPIC RESEARCH IN MATERIALS SCIENCE AND LIFE SCIENCES (FACULTY OF SCIENCE)

Director: János Lendvai

Deputy Director: Károly Havancsák

3. SOFTWARE TECHNOLOGY QUESTIONS OF DISTRIBUTED AND MULTI-CORE SYSTEMS (FACULTY OF INFORMATICS)

Director: Tamás Kozsik

Deputy Director: Zoltán Horváth

4. CROSS-CULTURAL DIALOGUE (FACULTY OF HUMANITIES, FACULTY OF LAW)

Director: Ernő Kulcsár-Szabó

Professional Director: Gábor Sonkoly

5. SOCIAL PROCESSES OF LIFELONG LEARNING AND ITS BIOPSYCHOSOCIAL BACKGROUND (FACULTY OF EDUCATION AND PSYCHOLOGY, FACULTY OF PRIMARY AND PRE-SCHOOL TEACHER TRAINING, BÁRCZI GUSZTÁV FACULTY OF SPECIAL EDUCATION)

Director: György Bárdos

Deputy Director: Mária Szokoly Kraiciné



The project is being realised thanks to the support of the European Union and co-financing of the European Social Fund. TÁMOP 4.2.1/B-09/1/KMR-2010-0003).

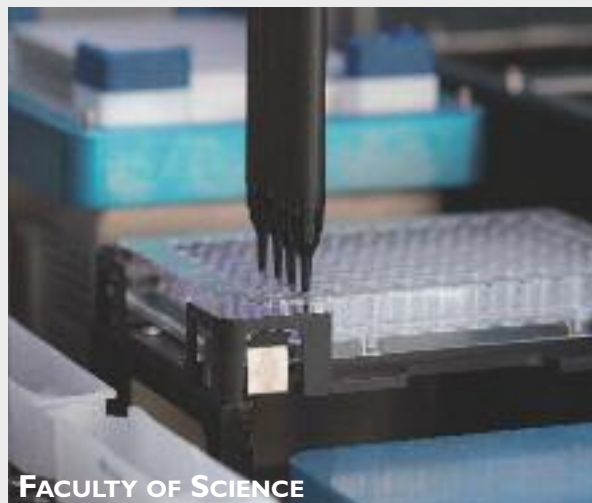


CLIMATE MODELING

FACULTY OF SCIENCE

Judit Bartholy's team is performing regional weather simulations using ENSEMBLE-type climate models. The essence of this methodology is to run many simulations differing slightly from each other at the same time. In this manner, probability predictions can be given where uncertainty can be quantified. The models provide information on how Hungary's climate may change in the coming century. Such data are necessary in order to prepare for such changes and to formulate strategies allowing sub-regions to adapt. Naturally, the results of this research have practical applications for those making decisions in government, society, business, agriculture, and disaster management.

UNIVERSITY RESEARCH PROJECT I



FACULTY OF SCIENCE

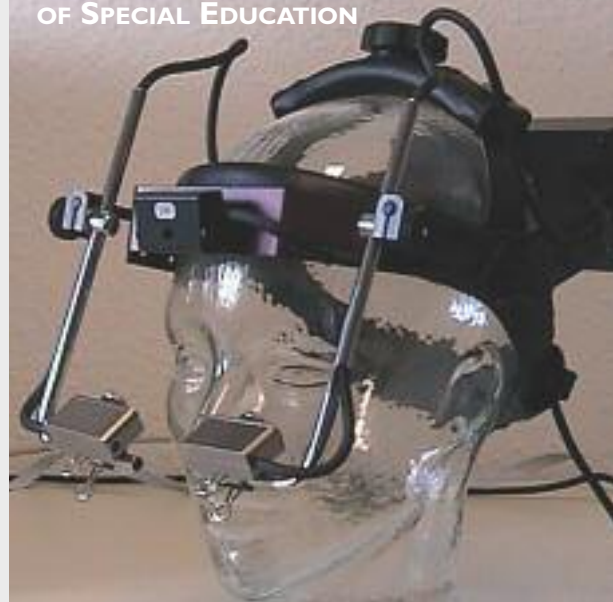
MOLECULAR INTERACTION FINGERPRINTING

András Málnási-Csizmádia's team of researchers has developed a bioinformatic method called the Molecular Interaction Fingerprint (MIF). This exciting tool offers new ways to systematically screen potential medications and to identify new effects of current ones. This approach works in a fundamentally different manner than earlier ones, whereby the effects and side effects of such molecules were predicted based on how they bound to target proteins. Instead, this method works by comparing docking poses of a given molecule along a sequence of proteins and comparing that to docking poses of drugs whose effects are already known. By defining profiles typical of drugs having a particular effect, researchers can in the long-run contribute to more effective development of drugs and to finding new uses of current ones. The results of their work are verified by a robotised system.

RESEARCH IN ATYPICAL COGNITIVE DEVELOPMENT

Under the direction of Miklós Győri, the Workshop of Supporting Technology and Eye-Tracking was recently formed. This workshop, which is part of the Institute of Special Education and Psychology, primarily employs innovative eye-tracking. The main goals of its research and development efforts are to better understand the different phenomena of atypical cognitive development and to find new diagnostic and supportive solutions in the field of infocommunications. Its areas of investigation are autism spectrum disorder, a wide range of intellectual disabilities, and cortex-based visual perception disorders. Advances in infocommunications are being achieved by both Hungarian and international teams. Their most important partner in this area is the Information Processing Team of ELTE's Faculty of Informatics.

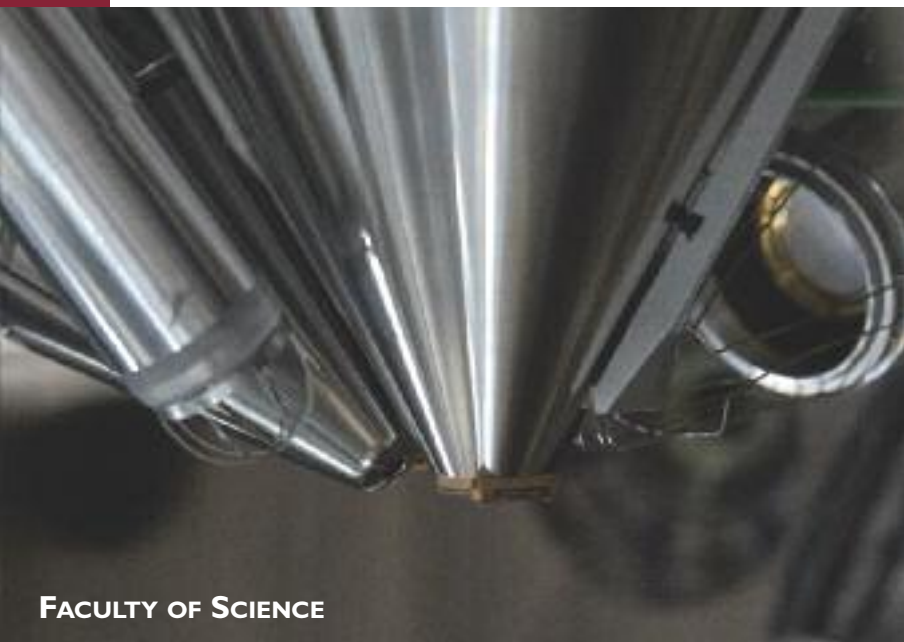
GUSZÁV BÁRCZI FACULTY OF SPECIAL EDUCATION



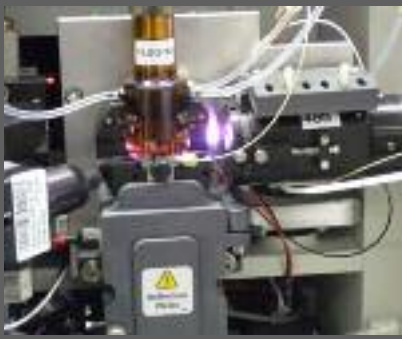
FACULTY OF EDUCATION AND PSYCHOLOGY

NEW EEG LABORATORY

Thanks to the university research project, ELTE now boasts a new EEG laboratory outfitted with IT infrastructure and equipped with 128-channel EEG devices optimised for small children. The high-density recording net can be placed on the head of each subject easily and with great precision. The device is comfortable to wear and records surface signals of the subject's brain activity with great accuracy. This world-class system will form the basis for a long-term research programme led by Ildikó Király. Electrophysiological experiments will take place at the famous behaviour analysis laboratory. In addition to examining the development of memory in newborn children, experiments focusing on speech development and categorisation are taking place here. Experimental results and processes become immediately available for use in university instruction. Students have the possibility to take part in the research process. Because direct evidence can only be obtained using such a device, this new EEG equipment marks a significant, qualitative advance in research that the university is able to perform.



FACULTY OF SCIENCE



The unique equipment of this centre, which is part of the research university project, will lead to significant advances in both teaching and networking with industry and international organisations. The Centre supports interdisciplinary research requiring use of its world-class equipment and cooperates with all university faculties.

The **dual beam scanning electron microscope** (SEM/FIB) uses both electron and ion beams to make high resolution images, and it is also suitable for working with samples. The this system has opened up new horizons in interdisciplinary research—nanotechnology-oriented materials physics, chemical and materials science, and biology—that could not be explored before.

One of the most important characteristics of the **transmission electron microscope** (TEM) is that in addition to providing high speed and contrast, it also offers good resolution. The CCD camera in the system makes it possible to do automatic exposures and handle pictures electronically. In terms of the types of experiments it can perform, this transmission electron microscope represents a significant improvement in both quantity and quality.

The **nuclear magnetic resonance spectrometer** (NMR) is a state-of-the-art, 700 MHz device using an electronic, superconducting magnet. It is used to analyse the shape of protein molecules and the chemical structure of active ingredients in drugs and of smaller molecules. The equipment is also suitable for research in materials science.

The **fluorescence-activated cell sorter** is currently the very latest equipment suitable for particle and cell analysis and sorting. The device is able to register individual cells according to 18 independent parameters, and this represents an enormous improvement for researchers in cell biology and immunology.

TEACHING IN THREE DIMENSIONS

19

Márta Turcsányi-Szabó is studying the topic of virtual reality in a project entitled "Adaptive Educational Technology: Cooperation Using Distributed Intelligent Systems." Its goal is to integrate virtual and real environments for educational purposes, to explore the possibilities of Augmented Reality (AR), and to develop "mashup" web applications based on locative activities connected to diverse, simple tools. The researchers have taken on the task of putting together a creative media studio for a new course of studies currently being designed in Media Informatics. Throughout this course of study, a wide range of models technologies will be available for the students to work with, spanning the gamut from interactive museum displays of outdated technology all the way to creative design. The focus of this project is not just on teaching. Instead, it highlights a virtual world which in the long-term may become part of the students' everyday lives.

UNIVERSITY RESEARCH PROJECT 3



FACULTY OF INFORMATICS

TEACHING IN THE VIRTUAL WORLD

FACULTY OF EDUCATION AND PSYCHOLOGY



Current research being conducted by János Ollé aims to integrate virtual and real worlds, and its primary goal is to develop a special teaching environment. So far nobody has studied the possibilities and limitations of merging real spaces with those created by computers. Within this subject, the team is examining how users in this virtual environment cooperate and work together in groups with three-dimensional beings under their control (avatars). They are looking for answers to how people cooperate when organising their studies in this environment, what skills are required of instructors, and what group dynamics play out. In addition, they are also investigating how the virtual world can help students requiring individualized instruction.

UNIVERSITY RESEARCH PROJECT 5



During this project, wide-ranging research areas will be mapped out based on the historical and spatial diversity of cultures meeting one another. The types of intercultural interactions covered differences in thinking patterns, simple translation, and intercultural achievements. Financial support from the mobility programme has allowed

faculties involved (Faculty of Law, Faculty of Humanities) to take part in international research projects and the latest developments in this field. For example, our doctoral students can in this manner visit the best workshops in their field and learn from world-class scholars. One of the main goals of this project is the creation of a Centre for Excellence in Doctoral Studies. This centre is to contain offices for researchers and visiting professors, lecture halls, and conference rooms and provide conditions necessary for visitors and doctoral students to complete their work. This centre has recently come to life: last spring it welcomed many foreign researchers and organised a number of conferences.

FACULTY OF HUMANITIES, FACULTY OF LAW



FACULTY OF INFORMATICS

DIGITIZED GLOBES

UNIVERSITY RESEARCH PROJECT 3

The Virtual Globes Museum opened its doors in 2007. Its website allows the visitor to see three-dimensional, digital globes that can be enlarged and rotated. The purpose of this virtual gallery is to present different terrestrial and celestial globes created by Hungarians and foreigners. The models were created by photographing impressions of globes and original globes. Given the interactive nature of the exhibition, this excellent educational tool was presented in the National Széchényi Library. Its web page also contains an excellent interface in English and German. This project, entitled "Geoinformatics and Cartography," currently contains 99 different items, and researchers are constantly adding to it. They are developing new technology to display globes with the most complicated structures.



UNIVERSITY RESEARCH PROJECT 4

NEVER TOO LATE TO LEARN

In the three pedagogy faculties, research is currently being conducted on how to maintain quality of life as one ages. While a longer life expectancy and a rise in the number of elderly in the developed world are welcome developments, they pose new social, economic, and cultural challenges. According to Sándor Striker's team, which is working on the project entitled "Maintaining quality of life as one ages, lifelong learning," the situation requires new approaches and solutions. The goal of this research is to collect examples from Hungary and other European countries in the area of education among the elderly. Based on the information gathered, course materials will be developed to help them to learn better. Researchers acknowledge that it is important to encourage the elderly to actively participate in learning and help them strengthen their ability to care for themselves. In order to achieve this, specially designed teaching and learning processes must be created.



FACULTY OF INFOFACULTY OF EDUCATION AND PSYCHOLOGY



**FACULTY OF PRIMARY AND
PRE-SCHOOL TEACHER TRAINING**

TRAINING THE TRAINERS

Judit Podráczky's project on "Training the Trainers" aims to change the approach of educators teaching at the bachelor's and continuing education level and to shape the culture of pedagogy. By using international experience gained from results-based teaching and school development in the area of learning research, the project leaders hope to make these innovative teaching methods and learning techniques an integral part of teacher training practice. These can later be instrumental in improving public education. The workshop and the project week served these goals in the department. During the project week, teachers and student teachers could experience for themselves how these project methodologies could be put to use in the classroom. The day-long training session and workshop acquainted them with new methodologies for guiding studies.

UNIVERSITY RESEARCH PROJECT 5



Thanks to ELTE's Faculty of Informatics and Faculty of Humanities joining forces, course materials for eleven courses of studies have been created which are modern, digitized, and designed in a manner to foster learning. This programme has been made possible with funding which ELTE won from a government tender. It focuses on development of courses of study and course materials with special regard to new professions and to those professions for which there is a shortage of trained workers. There is a wide range of subjects related to this area. Among them are training in informatics, developing educational models that are interactive and self-paced, creating interdisciplinary courses to develop competencies needed in today's world, and providing instruction in conflict management. These interactive, digital course materials and new, continuing education programmes have expanded the range of ELTE's educational offerings.

Market participants have been instrumental in helping ELTE to design these materials in a way which responds to market needs, especially in areas of information technology. We believe that such advances will greatly contribute to providing a solid education for professionals and help to increase their chances of finding employment after graduation. At the same time, the new, professional course of study in informatics ("informatics professional with a specialisation in developing e-learning course tools") also helps e-learning to gain ground. Research in conflict management, its digital course materials, and its website aim to help governments, defence organisations, and service providers to prepare for and manage new, potential sources of conflict.

Instructors at ELTE strive to engage students, Ph.D. candidates, and newly minted post-doctoral researchers in research. Let's have a look at what some of them are doing.



MULTIDISCIPLINARY RESEARCH IN NANOTECHNOLOGY

Kitti Ratter, currently a master's student in physics, operates one of the new tools of the Structural Research Centre for Materials and Life Sciences, a SEM/FIB scanning electron microscope. She works in close cooperation with researchers in specialised areas of physics. Based on her experience utilising this equipment, she is preparing to write her master's thesis. She is currently working on how to prepare a smooth surface with an ion beam that is suitable for experiments in electron diffraction. Developing technology to accomplish this could be useful in particle orientation, which could then be used to determine particle-size dispersion.

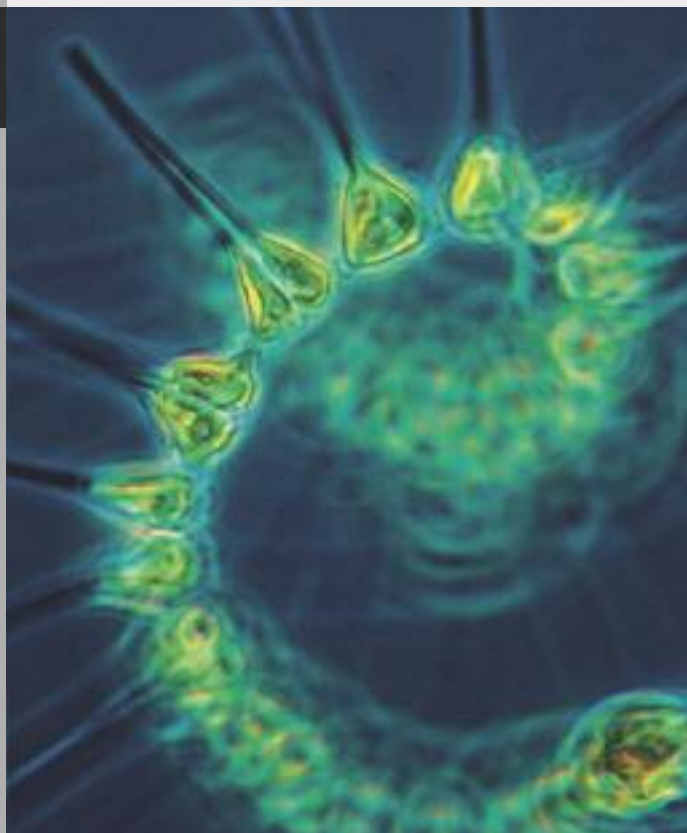
METALLURGICAL STUDY OF METAL OBJECTS FROM THE MIGRATION PERIOD

Péter Fodor is currently pursuing a master's degree in archaeology. Under his guidance, the Archaeology Students' Workshop on the Migration Period is studying iron objects from the time of the Avars. Using a scanning electron microscope, this project will analyse different metal objects found in burial sites covering the three Avar periods. The Faculty of Humanities and Faculty of Science are working together on this project. The Faculty of Science is providing the necessary equipment and expertise, while the Archaeological Institute of the Hungarian Academy of Sciences and the Archaeology Institute of the Faculty of Humanities are providing the objects to be studied. This type of research, which is still in the planning stage, is unique since to-date there has been no study of so many Avar funerary finds using the latest scientific methods. Moreover, this high-performance microscope has not yet been used for archaeological research. The results of these studies may shed some light on unresolved questions about Avar settlements and migration.



RAPID AND PRECISE DESCRIPTIONS OF LARGE CHEMICAL SYSTEMS

Planning in the field of environmental protection depends to a large extent on simulations. A given model may be able to predict the maximum efficiency of a chemical process. In this manner, fewer raw materials are required to make a given product, and the production of harmful substances can also be avoided. Tamás Varga, currently working on his bachelor's degree, is writing different computer programmes for a research team focused primarily on simulating chemical systems. In fact, their specific area of investigation is "rapid and precise reaction-kinetic simulations using large-scale reaction mechanisms." He is working on a specific type of optimising programme that modifies the chemical model in such a way that it best describes the experiment's results. Such models also describe the spread of pollutants in the air and water and how they are transformed. It may be possible to use such chemical models instead of experiments. One model may show us what settings are required for achieving the best production and the least burden on the environment.



TRACKING MAMMOTHS

Attila Virág, a doctoral student in the Palaeontology Department of ELTE's Faculty of Science, is extracting samples of stable carbon and oxygen isotopes from mammoth teeth for analysis. In addition, he is also making copies of these teeth using dental moulding material and then examining microscopic abrasion patterns. The results of these studies may help us to determine what the animal's preferred food sources were. Studying the environment of these great beasts may also allow us to draw some conclusions about the climate at that time. This can be studied by looking at stable isotopes of oxygen dating from that time. The essence of this research approach is that fossils are not just mere objects from the past. Instead, these remnants may help us to answer questions about the environment. Mr. Virág's study focuses simultaneously on problems related to ecology and climatology. He has received wide acclaim for his work and recently received an award from the journal Central European Geology for the best study conducted by young researchers.



ELTE TEACHERS WRITE A NEW ANTHOLOGY OF HUNGARIAN LITERATURE

For the humanities, it is absolutely vital to constantly re-evaluate the historical past and the treasures belonging to national culture. ELTE's prestigious department of Hungarian studies has published the latest fruits of its intellectual labour in this area. Participants in this project are all teachers of ELTE's Institute of Hungarian Literature and Cultural Studies. Editor-in-chief Tibor Gintli, along with editors Gábor Farkas Kiss, Gyula Laczházi, Géza Orlovsky, Gábor Schein, Márton Szilágyi, and Gábor Vaderna, have assembled the newest and monumental literary anthology entitled *Hungarian Literature*. The goal in putting together such a modern anthology surveying the entirety of Hungarian literature was to provide a work that would be useful to university students at the bachelor's level, secondary school teachers, students preparing for entrance examinations, and the educated public.

This thousand-page tome, published by Akadémia Kiadó, traces the changes in poetic forms through history. This literary history is not just a portrait gallery incorporating works of the most important authors. Rather, it is to be viewed as a series which analyses literary works. The historical scope of this work begins with the first written writings of Hungary and extends all the way to the turn of the millennium. The tome is divided into three sections, each covering a major period in Hungarian literature: old, classical, and modern. This tripartite, historical survey includes perspectives on intellectual history for the old works, commentary on social history for works from the 18th and 19th centuries, and politico-historical reflections on modern literature. Perspectives on the history of poetry have completely rearranged the canon. Feedback about this anthology has been quite positive. Therefore, it stands a good chance of replacing the previous anthology, which was in many respects outdated.



26 EVENINGS AT “STORK CASTLE” (GÓLYAVÁR)



After a hiatus of many years, the lecture series entitled “Evenings at Stork Castle” resumed in the fall of 2009. (The Stork Castle is a building located on the campus of the Faculty of Humanities.) In the 1980s and 1990s, discourses here examined the most diverse topics in nature, society, historical trends, and legal issues while at the same time popularising scholarly works. ELTE’s Faculty of Humanities has sought to breathe new life into this legendary series primarily by hosting lectures in the humanities. This programme’s events take place monthly and cover current issues in the humanities expounded on by the most renowned Hungarian professors. “The Faculty of Humanities is proud of Stork Castle, which is once again infusing life into evenings on campus and taking on new challenges,” stated Tibor Frank, Director of the School of English and American Studies, in his inaugural address for the series.

The very best of Hungary’s intelligentsia of the humanities lectured at this well-attended, evening series. Here is a sampling of our illustrious guests and topics of their presentations: Zsigmond Ritoók, antiquities scholar, *Antigony*; Miklós Szabó, archaeologist, *Classical/Anticlassical—European Roots and European Identity*; Ernő Kulcsár Szabó, literary historian, *Culture and its Studies*; Tibor Frank, *Emigration to America*; István Nyomárkay, linguist, *Our Philology Yesterday and Today*; Ernő Marosi, cultural historian, *The Reliquary Holding the Head of St. Ladislav in Oradea, Romania*; Jenő Kiss, linguist, *Man and Language*; János Kelemen, philosopher, *The Asymmetry of Philology and Hermeneutics: Dante*; László Kósa, cultural historian, *A Century of Progress: Changes in Civilisation in 19th Century Hungary*.

One of the greatest dilemmas of teaching is how to transmit the curriculum to students in a way that piques their interest. Using interactivity as a tool, Károly Kisteleki, legal historian, has his students perform parts of the Nürnberg trials, a topic of his course. This has resulted in a documentary game involving creative, multimedia tools. This experiment was a huge success, and the decision was soon made to continue it. It was in this manner that the Trial Re-enactment Club was formed in 2005. In the years that followed, students selected and re-enacted on stage the trials of Joan of Arc, Georges Danton, Friar George (György Martinuzzi), captain Alfred Dreyfus, Mary Stuart, Jean Calas, Tom Robinson, the Salem witch trials, the fictive trial of Oliver Cromwell, the Adolf Eichmann dossier, and Al Capone's file.

The goal of the Trial Re-Enactment Club is not professional theatrics. Instead, it is to bring practical elements—so often absent from teaching—to life in a playful manner. During a given trial re-enactment, the actors obtain tangible experience of a courtroom situation by playing the role of plaintiff or defendant. In this manner, the students learn how to reason and resolutely express their viewpoints while standing in front of an audience. In other words, they are practising what they will later do as lawyers. Spectators also greatly enjoy seeing their classmates and friends perform in a trial re-enactment. This type of exercise provides student with valuable, personal experience in the roles they will later take on in the legal profession. Last but not least, by familiarising themselves with famous trials in legal history, they are also learning the cultural and historical background of milestones in legal history.





The current University Library was founded in 1561 by Miklós Oláh, the archbishop of Esztergom as the library of the Jesuit college in Trnava, Slovakia. In 1635, this became the University Library when Péter Pázmány, the archbishop of Esztergom, founded ELTE's predecessor in Nagyszombat (today Trnava, Slovakia). It later moved to Pest and became Hungary's first public library in 1876. The collection has grown continuously over 450 years, and the number of books and documents in the entire library network exceeds 3.6 million. The library's collection also contains a number of rare and old documents: 14 codices from the library of King Matthias of Hungary, 183 codices, 1,150 incunabula, and a significant number—by European standards—of handwritten documents.



The University Library regularly organises exhibitions. The latest was an anniversary exhibition held in 2011 entitled *Cimelia*, which displayed a representative selection of the most beautiful and most valuable handwritten manuscripts and printed works. In addition to organising scholarly and educational events, the University Library takes part in numerous international and national projects. One such initiative is to create a database for the Collection of Hungarian Scholarly Works, and another is to harmonise the library services for ELTE's different faculties. This latter endeavour is part of a larger, government-sponsored programme called "Knowledge Warehouse Express," which aims to build a common library database covering the entire university and including a multilingual service portal available around the clock.

THE “EÖTVÖS” ARTISTIC ENSEMBLE

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Offering ELTE students interested in classical music opportunities for relaxation and recreation, the Bartók Béla Choir and the University Concert Orchestra have been in existence for over fifty years. They have an excellent reputation among amateur Hungarian ensembles. The founder of the Ensemble was Gábor Baross, a recipient of the Liszt Ferenc Award and an excellent artist. He served as the Ensemble's artistic director from 2009 until his death. The Ensemble's repertoire includes Hungarian works from the baroque, classical, and contemporary periods. Many Hungarian composers have penned works for and dedicated them to the choir and the orchestra, currently under the artistic direction of László Kovács, also a recipient of the Liszt Ferenc Award.

The Folk Dance Ensemble, also founded over fifty years ago, offers students the opportunity to promote Hungarian folk culture. One of the ways in which they can do this is by becoming acquainted with and learning the traditions of folk music and folk dance. The Ensemble's repertoire contains a vast selection from folk dance traditions of Hungarians and other cultures living in the Carpathian Basin.



Founded in 1771, this botanical garden was immortalised in Ferenc Molnár's famous novel *The Paul Street Boys*. In 1847, it moved to a new location on land previously belonging to the Festetics family. It was

originally designed in the style of an English landscape park and features a lake fed by a natural spring, an island, and a stunning view of artificial ruins. Because of the neighbouring clinic's expansion, the garden lost two-thirds of its area before World War I. Despite this setback, the dismembered garden underwent various developments during the 20th century. New greenhouses were built; a rock garden was created; and a taxonomic collection was assembled. The park has been designated as a special protection area of national importance since 1960. In 2006, it was placed under the protection of the National Office of Cultural Heritage. One of ELTE's unique teaching units, the Botanical Garden is being renovated with European Union funding through Hungary's Operative Programme.

Three successful tenders for this project have led to the renovation of the unique Victoria and Collection Houses, the Propagation House, and the Acclimatisation House. In addition, new taxonomic groups of plants were planted. Certain parts of the garden related to particular themes and collections are being reorganised in order to protect biodiversity through *ex situ* conservation. Reconstruction of the Palm House, built in 1865 and classified as a protected monument, included renewing the tropical, subtropical, and Mediterranean collections.



FACULTIES OF ELTE UNIVERSITY

Faculty of Humanities

Founded in 1635.

Faculty of Law

Founded in 1667.

Faculty of Primary and Pre-School Teacher Training

Founded in 1869.

A faculty of ELTE since 2000.

Bárczi Gusztáv Faculty of Special Education

Founded in 1900.

A faculty of ELTE since 2000.

Faculty of Science

Founded in 1949.

Faculty of Informatics

Founded in 2003.

Faculty of Education and Psychology

Founded in 2003.

Faculty of Social Sciences

Founded in 2003.



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