University of Chemistry and Technology, Prague

A public higher education institution

Annual Report on Activities in 2021

Presented by

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Rector

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A. Annual Report on Activities – Main Part

Introduction by the Rector

The University of Chemistry and Technology in Prague presents its Annual Report on Activities in the calendar year of 2022 in accordance with Section 21 of Act No. 11/1998 Coll., on Higher Education Institutions.

If I were to describe the year 2021 at UCT Prague in one word, probably the best word would be the adjective "intense". On the one hand, we had to deal with the ever-changing anti-epidemic measures in connection with the COVID-19 pandemic and create appropriate conditions for our students and employees that would comply with the requirements on high-quality studies, education and research. On the other hand, in the spring we acquired a new building on Jankovcova Street for a little less than CZK 200 million, and in the autumn, after many years of extremely complex legal actions and preparations, we sold some of the land plots on Vítězné Square for over CZK 1 billion. In addition, we opened a new research centre, CirkTech, in Čížkovice and throughout the year we carried out challenging renovation of the extensive spaces for laboratories, offices and infrastructure in Building B. When I look back at what we managed in 2021, I am full of admiration and I would like to heartily thank all the members of our university community for their extraordinary engagement, the work they did and the lasting determination for consensus, which is crucial in making our way forward under difficult external conditions.

Naturally, what makes me happiest is the fact that we were able to teach all subjects (including laboratories taught in person) in the summer semester despite the pandemic, and we entered the winter semester with our heads held high, regardless of some minor problems. Of course we faced considerable challenges in activities connected with internationalization of the university (Erasmus, staff mobility) and despite all support measures, academic failure in the first year of bachelor's programmes increased. One positive effect of the pandemic was the dramatic increase in the amount of study support materials in Moodle, the creation of a number of video recordings and streams of lectures, mainly in subjects in the common core courses, and gaining new experience with hybrid teaching.

In 2021, despite difficult working conditions, we were able to defend our position in scientific-research activities; a total of 297 projects, of which 31 were international, were solved. After a certain decrease in 2019, we have returned to relatively satisfying numbers. In financial terms, the volume of creative activity focused on science, research and innovation covered approximately 54.5% of UCT's annual budget. I am proud that a complete methodology for quantitative detection of copies of virus RNA of the SARS-CoV-2 virus in wastewater based on RT-qPCR was developed at UCT Prague. Among the individual project accomplishments I would like to mention support for the second project of Prof. Zdeněk Sofer from the ERC CZ programme, an EXPRO grant for Prof. Petr Slavíček's team and a JUNIOR STAR grant for Dr. Petr Kovaříček, who came to UCT Prague in 2020 thanks to support from the Dagmar Procházková Fund and who can

serve as a role model for young talented scientists who want to lead independent research and have their own research group at UCT Prague.

UCT Prague is a traditional leading research workplace in the Czech Republic with intense collaboration with industry. This has resulted in a number of applied outcomes that the school enters in the RIV database. In 2021, there were a total of 95 such outcomes, which is comparable to previous years. The income from contracts on the implementation of contract (commissioned) research and development grew by nearly 20% year-over-year. In giving examples of specific applications I would like to mention Prof. Josef Pašek's significant share in the development of a technology for the isolation of dicyclopentadiene for the largest Czech petrochemical company, Unipetrol, as well as the process of testing of an own patented technology to obtain lithium, which is currently in high demand globally, in the new research centre CirkTech under the supervision of the creator of the technology, Dr Vu.

I am also happy to announce that, for the second time in a row, UCT Prague has placed second among Czech universities in the prestigious **QS World University Rankings 2022**. In the category assessing individual support in learning and natural involvement of students in research, we are 26th globally and first in the Czech Republic! In the U-Multirank 2021 ranking, which uses dozens of criteria divided into 5 areas, UCT Prague received the highest score in 11 criteria, which makes us the best in the Czech Republic.

At UCT Prague we are used to our colleagues regularly earning top awards. In 2021, doc. Petra Lipovová received an Award of the Ministry of Education, Youth and Sports for Excellent Educational Activity at a Higher Education Institution. Prof. Milan Pospíšil was presented with a 1st Degree Medal from the Ministry of Education, Youth and Sport for long-term excellence in pedagogical work; Prof. Pospíšil was also named Czech Chemistry Personality by the Association of Chemical Industry of the Czech Republic. Prof. Bohumil Kratochvíl, DSc., received the Medal of the Czech Chemical Society. Prof. Štěpán Urban was the recipient of a Medal of the Josef, Marie and Zdeňka Hlávka Foundation in recognition of his lifelong work.

When it comes to the development of our university, I mentioned at the beginning two fundamental events regarding current and future new spaces. Without them, UCT Prague would not be able to grow and provide appropriate facilities for modern education and high-quality research. The newly purchased building on Jankovcova Street will provide students with new auditoriums, "light" laboratories, space for start-up companies and rooms for student unions. The Department of Economics and Management and a growing number of its students have also found a home in the building.

The money from the sale of the land plots on Vítězné Square will be used in line with our long-term development plan for construction of a new university building on the remaining plot. Responsible preparation of the construction, which will strategically support UCT in its role as a leading Czech research university, will be one of the main tasks for the year 2022.

Prof. Dr. RNDr. Pavel Matějka

Rector

1 Developing competencies directly relevant for life and practice in the 21st century

Support for the development of employee competencies in teaching and creation of study programmes (MEYS SP2021+: 1A)

PIGA and the Pedagogical Conference

In the framework of the Internal Grant Agency of UCT Prague, category C – a competition for Pedagogical Projects of Students and Academics (**PIGA**) was announced in 2021. The focus of the submitted **Innovative Pedagogical Projects** (C1 type) was primarily on the preparation of study materials in textual and multimedia form, study support materials and the use of digital technology in teaching. A total of 42 of the 46 submitted projects were supported whose focus and preparation complied with the requirements of the competition. PIGA 2021 was financed from the contribution for the implementation of the Institutional Plan of UCT Prague for 2021 in the amount of CZK 7m.

The Department of Lifelong Learning organized the first edition of the **Pedagogical Conference** in mid-December. The conference was held as part of the 2021 Institutional Plan of UCT Prague. During the half-day event, 9 presentations were given, followed by a discussion. The conference was held in-person and also live-streamed on MS Teams. The presentations mostly discussed the topics of the PIGA 2021 projects. The invited teachers (participants in the conference) were at first distrustful of the purpose and aim of the conference. However, after the conference, the participants agreed that the conference was helpful for the development of pedagogical competencies and sharing of experience. Ideas for presentations during the 2022 edition were suggested. Student representatives wished to participate next year and present their experience gained during study stays abroad.

Recognition of pedagogice activity by the Ministry of Education, Youth and Sports

Doc. Ing. Petra Lipovová, Ph.D., (Department of Chemistry and Microbiology, FFBT) was the recipient of the 3rd edition of the **Award of the Ministry of Education, Youth and Sports for Outstanding Educational Activity at University**. The award is given to university employees for excellent educational activity or for outstanding innovation in educational activity. Doc. Lipovová participates in innovation and improving comprehensibility of study programmes at UCT Prague that she guarantees, and in the implementation of new, modern subjects in study programmes. These activities will allow graduates to achieve better outcomes in the academia and in the labour market in the future. In 2021, Minister of Education Robert Plaga presented the award to another four university teachers.

In August, Minister of Education Robert Plaga gave out the 2021 Medals of the Ministry of Education, Youth and Sports to 35 distinguished Czechs active in pedagogy. Among them was also **Prof. Ing. Milan Pospíšil, CSc.** (Department of Petroleum Technology and Alternative Fuels, FET), who received the **Ministry of Education, Youth and Sports 1st Degree Medal for long-term excellent pedagogical work**. The medal is given in recognition of outstanding pedagogical, educational, scientific or artistic work, long-term and excellent work in education or extraordinary meritorious act in ensuring and improving conditions for education and training in the Czech Republic. The medals are of two degrees – the 1st degree (silver) and the 2nd degree (bronze). The candidates for the medals are nominated by representatives of schools, teachers, parents, pupils and the general public. The minister then decides about who receives the medal based on the submitted proposals.

Development of methods for assurance of quality of education and verification of learning outcomes (MEYS SP2021+: 1B)

Assessment of secondary school and university education received abroad in the framework of admissions procedure at UCT Prague

In the electronic admissions procedure for study applicants to Czech and English study programmes at UCT Prague in the 2021/2022 academic year, the process of secondary school and university education received abroad was newly set in the framework of the admissions procedure at UCT Prague. In line with the Higher Education Act and the awarded institutional accreditation for study branches “Chemistry” and “Food Technology”, the Department of Quality Evaluation became the guarantor and coordinator for recognizing of previous education received abroad by study applicants applying to Czech and English study programmes, which collaborates with the Department of International Relations, the School of Business and the Department of Education in this matter. The year 2021 was the pilot year of the newly set up process which will be gradually optimized based on gained experience.

Strengthening the bond between studies and practice and preparation for future job (MEYS SP2021+: 1C)

Implementation of study programmes in the framework of OP RDE

The year 2020 was the fifth year of the implementation of the university strategic project ***Priority UCT Prague*** from the ESF call for universities in the framework of OP RDE. About 80 physical persons from among employees of the four faculties and the majority of Rector's Offices were involved in the project in 2021. The aim of the implementation of the project with total eligible costs at CZK 146m is the improvement of quality and efficiency of education at UCT Prague, which is carried out by interventions such as supporting bachelor's and master's study programmes focused on practice, strengthening of internationalization, teaching in line with the latest educational trends, setting up minimum standards for services for students with special needs, reducing academic failure, support to cooperation with the Alumni Club, development and establishment of transparent systems of internal assurance of quality at university. The project's implementation is achieved through nine key activities. The end of the project is planned at the end of 2022. At the same time, the implementation phase of a complementary project from the ERDF call for universities in the framework of OP RDE that ensures appropriate infrastructure for activities in the ESF project was in its final stage.

In 2021, the implementation of the ***CHEMPRAX*** project from the ESF call for universities II in the framework of OP RDE continued. The total eligible costs of the project, which is planned until October 2022, are in the amount of CZK 19m. The aim of the project is to increase the quality and efficiency of practical education at UCT Prague by supporting the development of bachelor's and follow-up master's study programmes reflecting the needs of outside practice, matching the current social and economic needs, strengthening and deepening of the internal internationalization at the university, teaching in line with the latest trends in education and expanding services for students with special needs. In parallel, a complementary project under the ERDF call for universities II in the framework of OP RDE that ensures an adequate infrastructure support for the activities in the ESF project is under way.

Student Scientific Conference 2021

Due to the adverse epidemic situation, the Student Scientific Conference was held fully online for the first time in 2020; this year the **2021 Student Scientific Conference** was offline once again. The number of sections and participants increased slightly compared to 2020. Contributions were put in 73 sections according to the topic. Each one of the 535 competing students presented their work in the form of a short lecture or poster before an expert committee. The high scientific level of the contributions and the even performance of the presenters meant the decisions taken by section committees were not easy. The best works in all sections received material or pecuniary prizes from our industry partners, who attended the students' presentations. As usual, the partners of the 2021 edition of the conference included leading companies (e.g. Zentiva, Moser, Škoda Auto, ORLEN Unipetrol, Arxada, Merck, Plzeňský Prazdroj, Madeta, Nicolet CZ, NET4GAS,

ŠKOENERGO, Bonett, Lanxess, HPST, Veolia, Donaulab, Preciosa, ČEZ, Roche, LECO, P-Lab, Mondi, Optik Instruments, MELVIA TRADE, Shimadzu, Helago, AAK Czech Republic).

Awards for students of UCT Prague

The high quality of student theses at all levels of studies at UCT Prague is confirmed annually by numerous awards given to students for their bachelor, master and PhD theses and for the presentation of their involvement in research activities in the form of posters at international conferences. For more, see Section C, Chapter 10, Part b.

CENA crytur Soutěž o nejlepší diplomovou práci v materiálových vědách

Ing. Anna-Marie Lauermannová (FCT) from UCT Prague won the 8th year of the **Crytur Awards** with her thesis on the *Synthesis and Properties of Reactive MgO-Based Binders*. Choosing from among 35 theses, the jury praised the way the subject was explored, its topicality and good applicability in practice. The winner and her supervisor, **doc. Ing. Ondřej Jankovský, Ph.D.** (Department of Inorganic Chemistry, FCT), received financial reward. The aim of the competition of university students and their master theses is to support talented researchers in technical fields in their further development. The competition's expert committee whose members include evaluators from the scientific-research team in Crytur gives primary attention to the quality of the theses, their innovativeness and applicability in practice. Due to COVID-19 restrictions, the award was presented by representatives of Turnov-based Crytur at an online conference attended by the winners, their supervisors and the sponsor of the competition.

Bc. Ivana Suchánková (FFBT) came first in the Czech part of the **SHE STEM Award** with her bachelor thesis on the *Comparison of the Ability of Capsid Proteins of Selected Flaviviruses to Assemble Nucleocapsid under in vitro Conditions* led by **Prof. Dr. Ing. Michaela Rumlová** (Department of Biotechnology, FFBT), and she attended the international WE Local conference in London. SHE STEM Award is given by the Brno office of the international organization Society of Women Engineers in collaboration with Honeywell spol. s r. o. The award is given to female authors of the best bachelor theses written at technical universities in the Czech Republic. The competition is organized with the aim to support extraordinary achievements by women in technical branches. It is part of the Society of Women Engineers, which annually rewards achievements of women in all stages of their careers in the field of technology.

At the end of September, **science awards of the French Embassy** were presented at the Buquoy Palace. Two students of UCT Prague were among the 23 awarded PhD students from across the Czech Republic. **Ing. Markéta Andreides** (Department of Water Technology and

Environmental Engineering, FET) won **first prize in category Make Our Planet Great Again**. The jury appreciated her contribution titled *H_2S Removal from Biogas through Microaeration: Control Strategy Development.* **Ing. Martin Tlustý** (Department of Organic Chemistry, FCT) was awarded the **Jean-Marie Lehn Prize for Chemistry** for his paper on *Synthesis of Inherently Chiral Calixarenes*. The ceremony was presided over by French Ambassador to the Czech Republic, Mr. Alexis Duteretre, and Jean-Marie Lehn, Nobel Prize winner for chemistry in 1987 and the initiator of the event. A total of 71 candidates under 33 years of age participated in the competition; they were nominated by their respective universities or by the Czech Academy of Sciences based on the quality of their research paper written as part of their PhD studies. An expert committee composed of 49 Czech and French professors and scientists decided on the results in seven categories. The winners in all categories received financial reward from partner organizations. In addition, the first two winners will receive a scholarship from the French Embassy in the Czech Republic to spend one month in a French laboratory of their choice.

In 2021, under the patronage of the Talent Foundation of Josef, Marie and Zdeňka Hlávka, the **Josef Hlávka Awards** were given to students of UCT Prague: **Ing. Michal Lojka** (FCT), **Ing. Klára Škodáková** (FET), **Ing. Hana Raschmanová, Ph.D.** (FFBT) and **Ing. František Králík, Ph.D.** (FCE). The prize is given to talented students in bachelor's, master's and doctoral study programmes who have shown exceptional abilities and creative thinking in their field. The prize is awarded with a diploma and carries a cash award of CZK 25 thousand for each winner. The prizes were presented at the occasion of the celebration of 17 November at Josef Hlávka's manor in Lužany near Přeštice.

2021 Results of the Julie Hamáčková Award in the category of student theses

At the beginning of December, the 7th edition of the **Julie Hamáčková Award** was held at UCT Prague. The committee assessed submitted theses in **category C** – student theses of students in bachelor's, master's and doctoral study programmes who included in their work an analysis based on gender and/or sex. The top place in the category of theses of the Student Scientific Competition type was taken by **Bc. Martina Nová** (FET) with her thesis on the *Differences in Perception of Recycling of Water and Plastics between Men and Women*, while the second place was taken jointly by **Bc. Michaela Kubáňová** (FFBT) with her thesis on the *Antibiofilm Effects of Molybdenum Clusters* and **Bc. Eliška Smolová** (FCE), whose thesis focused on the *Synthesis of Selected Metabolites of 25E-NBOH*. In the category of student final theses, two out of the three presented theses were acknowledged by the committee; they jointly took the first and second place. They were the theses by **Ing. Vojtěch Kužel** (FET) on the *Optimization of the Process of Removing Micropollutants from Water Using AOP and Sorption* and **Bc. Lada Prostějovská** (FCE) on the *Forensic Determination of Symptoms of a Disease by Odour Trace*.

Facilitating the transition between secondary school and university level of education

University study applicants who want to take the decision on their future alma mater based on relevant information and real-life experiences are offered the **Open University programme**, which allows applicants to directly experience the life of a student at UCT Prague. The Open

University allows them to spend one day at UCT Prague with a guide – a master or PhD student that they choose on the website based on their bios. The model day happens during normal classes and includes a lecture, a short visit to a laboratory of one of the research groups, a tour of the Dejvice Campus and its surroundings and, last but not least, lunch in the canteen. Throughout the whole day, the visitor of this **individual open doors day** has a guide with them whom they can ask anything about the studies at UCT Prague. In addition to this basic-level programme, they can also talk to a career coach at the Counselling and Career Centre UCT Prague who will help them select a university.

In 2021, UCT Prague again actively informed potential university study applicants about the possibility to study at our university at **education fairs**. At our stalls, applicants for studies at UCT Prague could learn from students and employees of UCT Prague about **what they can study at UCT Prague**, what **career paths our graduates can take and what the study is like**, including information about living in Prague, the accommodation and culture events in the Dejvice Campus. In January, the **Gaudeamus Prague 2021** was held online. At the beginning of November, UCT Prague participated in the **Gaudeamus Presentation and Consultation Days in Nitra**. During the presentation on the first day of the three-day conference, UCT representatives gave participants maximum information on the possibilities of university education at our university. The **27th higher education exhibition Gaudeamus Brno** was held physically in November. UCT Prague, together with 300 exhibitors from 13 countries, had an information stall at the fair and together with 9 other universities UCT Prague also gave a lecture within the accompanying programme titled *Science and Life*.

Developing a professional study profile and strengthening its prestige (MEYS SP2021+: 1D)

UCT Prague and ORLEN Unipetrol plan to expand university study opportunities in the Ústí nad Labem Region

In June 2021, fifty secondary school and university teachers, representatives of chemical and technological companies and of the Ústí nad Labem Region met at the chemical plant of ORLEN Unipetrol in Záluží near Litvínov. They were invited by the company's management and UCT Prague to discuss the **intent to expand the offer of study opportunities** at the local **University Centre with a new 5-year study branch called *Industrial and Technological Materials Engineer***. The Ústí nad Labem Region and the Association of Chemical Industry of the Czech Republic were partners of the meeting.

"Technical education is a key prerequisite for developing and increasing a nation's living standards. We need to train new experts who will be able to face current challenges in the chemical industry, such as in the field of circular economy or the advent of alternative energy sources," says Tomáš Herink, a member of the Board of the ORLEN Unipetrol Group responsible for research, development and production and a researcher and university teacher. He added: *"We also talked about how to boost the interest to study chemistry at primary and secondary schools and in lifelong learning in the chemical industry and the role of chemical companies in this field. In addition to the University Centre, we have also inaugurated our newly built training centre and a fire-safety polygon for education and training of employees and rescuers that can also be used by outside companies."*

The University Centre, or the University Centre UCT – FME CTU – ORLEN Unipetrol, was established in 2015 and is based at the ORLEN Unipetrol compound, the biggest chemical compound in the Czech Republic. Every year, about 40 students study there in three bachelor's and one follow-up master's study programme. They have a unique possibility to combine theoretical education and practice and get involved in real-life research and development projects. At the end of 2021, ORLEN Unipetrol announced it was expanding the University Centre, which is now used by UCT Prague and also by the CTU Faculty of Mechanical Engineering, which plans to teach two to three subjects at the Centre.

"In the five years of existence of the University Centre, 112 students have completed their studies there. The fact that a part of a state university is located directly at a commercial production plant is rare not only in the Czech Republic, but also in the whole of Europe. The combination is unique also thanks to the possibility to test the acquired theoretical knowledge in practice, which is something both universities and industrial firms have wanted for many years. This collaboration is beneficial with respect to joint research and development and submitting scientific research Czech and international projects, including to EU programme calls," concludes **doc. Dr. Ing. Milan Jahoda** (Department of Chemical Engineering, FCE), Vice-Rector for Education at UCT Prague.

Support for building infrastructure for interactive methods of education and integration of students (MEYS SP2021+: 1E)

New UCT Prague building on Jankovcova Street

Since May 2021, UCT Prague, through its subsidiary Jankovcova 1114, s.r.o., has owned a building located on Jankovcova Street 1114/23 in Prague-Holešovice. The modern looking building was built during the First Republic and at that time it was used as a factory. In 2002, it was completely renovated and extended. The L-shaped structure has one underground and 5 above-ground storeys with a total area of 4,028 m^2. Parking spaces are available in the courtyard.

The total purchase price of CZK 194 million was in accordance with the valuation of the building that the school had commissioned before the purchase. A number of preparation and verification steps preceded the purchase based on which a majority in the Academic Senate of UCT Prague and the Board of Trustees of UCT Prague approved the purchase.

UCT Prague has a long-term shortage of spaces, which limits the necessary development. The plan is to build auditoriums, "light" laboratories, spaces for start-up companies and rooms for student unions in the building. Also the Department of Economics and Management will be based there.

Projects to develop infrastructure in the framework of OP

In 2021, three infrastructure projects in the framework of OP RDE were being completed and one OP RDE project entered the second year of its five-year sustainability phase.

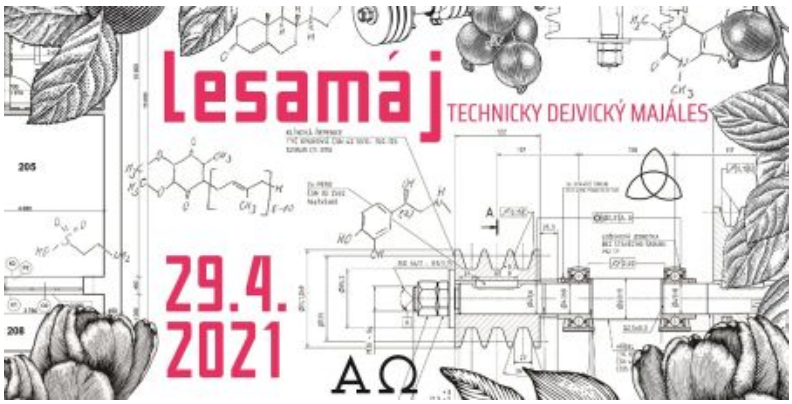
In the middle of May, the ***POSTUP*** project under the OP RDE call "Support of the Development of Study Environment at Universities" entered the second year of sustainability. The aim of the project, which is worth CZK 50.8m, was the modernization and acquisition of equipment infrastructure and material requirements, software and purchase of electronic information sources in English for bachelor and master classes at UCT Prague. The sustainability of the project concerns the infrastructure acquired in the project.

The projects “Infrastructure for Priority UCT Prague” from the OP RDE ERDF call for universities and “INMODOS” from the OP RDE call “Research Infrastructures for Educational Purposes – Building or Modernization” were in their fifth year of implementation. All faculties and the central Rector’s Offices providing IT and other information services – the Computer Centre and the Centre for Information Services – are involved in the implementation of the two projects. The aim of the project ***Infrastructure for Priority UCT Prague*** is to ensure and improve the material and technical resources for the so-called soft activities implemented in the “Priority UCT Prague” project, i.e. an activity that is aimed at bachelor’s and master’s study programmes and the improvement of systems for strategic management and quality assessment at UCT Prague. The project has an allocated budget of CZK 141.2m. In 2021, the remaining equipment infrastructure was purchased for laboratories of the Department of Education and Human Sciences and IT equipment was purchased from savings created in the project. After being extended, the project’s physical implementation will end in April 2022. In the ***INMODOS*** project focused on the improvement of infrastructure for modernized and new doctoral study programmes prepared under the “MOST DSP” project, the remaining machines and equipment were purchased and the project ended in October 2021. The overall eligible costs of the project were CZK 199m.

As part of the ***Infrastructure for CHEMPRAX*** project from the ERDF call for universities II in the framework of OP RDE, last purchases were made. The total eligible costs of the project, which is planned until September 2022, are CZK 45.1m. The aim of the project is to enhance the quality and efficiency of education focused on the practical needs of UCT Prague by providing modern laboratory equipment for newly created education centres in the “CHEMPRAX” project so that it better reflects the needs of the contemporary manufacturing sector. The centres will be used by students in bachelor’s and master’s study programmes across all faculties of UCT Prague.

Lesamáj – technical May Festival in Dejvice

At the turn of April and May, Lesamáj – a multi-genre non-commercial site-specific festival celebrating spring, freedom and creative energy in the spirit of “students to students” – was held. The festival’s organizational team was composed of students of universities located in the Dejvice Campus (UCT, CTU, IOCB, CTF CU). The festival follows in the tradition of May Festivals as students’ initiatives. In



2021, due to the Coronavirus pandemic, Lesamáj was held completely online on Facebook. Anyone could watch the accompanying programme, which started on 20 April. The main programme was held on 29 April. It began with a Workout in the morning, in the afternoon a walk through the Dejvice Campus was organized and in the evening there was a DJs Afterparty. In addition to the main programme, visitors

could also watch beer yoga, tea preparation, a podcast with architect Melková, the coronation of the King and Queen of May and a concert of the Orchestra of UCT Prague. The whole programme was planned by the organizers of Lesamáj and student unions. The accompanying programme was on since mid-April. Videos from the event were available on a YouTube channel.

First Academic – introduction of first year students to student life

On 14 September, the traditional matriculation ceremony for students in the first year of bachelor's studies was held. Unlike in previous years, tutors were waiting for students after they have taken the academic oath and were leaving the auditoriums. In small groups, tutors offered advice and tips on studies and life on the campus to their younger colleagues. After all their questions had been answered, the new students were able to take part in a number of activities. Theatre company DI(v)OCH prepared a speed course in improvisation, a tournament in table football was held throughout the whole day and in the evening there was a concert organized by the Dejvice Campus. Around thirty active students from student unions were involved in the organization and created the programme for hundreds of first year students.

2 Improving the quality and relevance of flexible forms of education

Increased use of distance learning methods in full-time study programmes (MEYS SP2021+: 2A)

Experience with distance learning

At the end of the summer semester, a questionnaire was carried out among teachers at UCT Prague on distance learning with the aim to map the experience and problems with this kind of education. The survey showed that at UCT Prague, distance learning was primarily in the form of regular on-line lessons according to the timetable. A detailed analysis of the results was available to the members of the academic community on the intranet. Based on the information obtained from the questionnaire, UCT Prague focused on support to teachers and solution of technical issues as well as on optimization of the provided software and hardware support to teachers. The results of the questionnaire can help share experience among teachers gained from distance learning, among other things. Further, the questionnaire revealed that the plus sides of distance

learning included self-education of teachers, preparation of new study materials and an opportunity to rethink the concept and content of in-person teaching.

Enhanced offer and innovation of methods of flexible forms of education, including education provided on-line (MEYS SP2021+: 2B)

35th edition of the Chemistry for Life summer school

This summer school for secondary school teachers and students is an accredited educational programme. At the end of May, its 35th edition was held, and the preparation of the event and the event itself had to comply with COVID-19 restrictions in place. The event offered mutually inspiring meetings between leading experts at UCT Prague and one hundred secondary school teachers. The lectures focused on new trends and knowledge in different chemistry fields that are not usually part of the standard high-school curriculum.

Secondary school teachers can use the knowledge and information acquired at the summer school to motivate their students to study chemistry. A wide offer of laboratory tasks was prepared at UCT's modern laboratories for more than 140 attending students. The project's partners are ORLEN Unipetrol and the National Library of Technology. For more see Section C, Chapter 2, Part c.

Sustainability Management course inaugurated

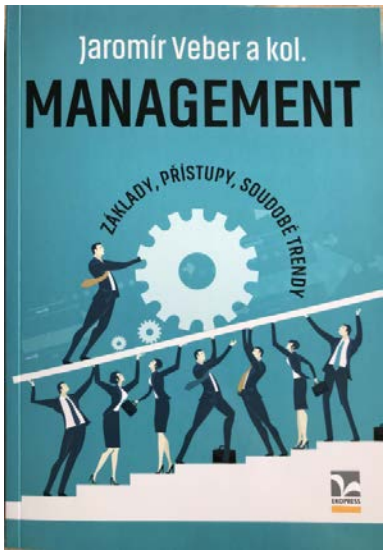
In mid-September, a half-year lifelong learning course on **Sustainability Management** was inaugurated at FET UCT Prague. The course is mainly intended for employees responsible for strategies and development, CRS, sustainability, the environment, marketing and PR and for anybody else interested. The course was opened by Finnish Ambassador to the Czech Republic Jukka Pesola, Rector of UCT Prague Prof. Dr. RNDr. Pavel Matějka and Dean of FET **Prof. Ing. Vladimír Kočí, Ph.D. MBA**, the guarantor of the course.

Sustainable development is now the basic principle and priority goal of EU policies. The topics of sustainability are becoming the main pillars of both business and state administration. The UN agenda until 2030 contains 17 sustainability goals that apply to all countries and represent a development plan for the next 15 years. Sustainability management has become an inseparable part of successful business models. Also the Government of the Czech Republic has pledged to fulfil the universally valid and accepted Agenda 2030 and the Sustainable Development Goals in the Strategic Framework Czech Republic 2030 adopted by the Government in 2017.

The course on Sustainable Management focuses on cross-sectional topics and policies that support sustainable development as well as topics touching on the different goals of sustainable development. The course will provide the attendees with the latest information and findings in the field of sustainable development and will point at new opportunities and context of sustainable business. At the end of the course, the attendees will receive a LLL course certificate.

Today, sustainability management is widely discussed and organizations are ever more often actively involved in topics related to sustainability. A responsible organization and its activity can significantly impact communities and the environment. Responsible behaviour of companies is connected with their values and strategies that should comply with the principles of sustainable development and it should have the lowest possible impact on the environment and society. Sustainability management integrates sustainable business principles in a number of areas, including mainly economic, social, environmental and ethical issues.

New edition of a book on management



The latest edition of a book called *Management – základy, přístupy, soudobé trendy* (Management – Basics, Approaches, Current Trends) published by Ekopress follows after two editions (2000 and 2010) published by Management Press. Its authors aim to present an up-to-date overview of management and its development in time for university students and for managers in companies. The team of authors was led by **Prof. Ing. Jaromír Veber, CSc.** (Department of Economics and Management).

This latest publication is divided into three parts. The first part is dedicated to a manager's profile, managerial roles and an overview of the development of managerial approaches in the last 100 years. The second part deals with individual managerial disciplines, including strategic, process and project management, change and knowledge management, etc. The third part discuses the changes in management brought about by the advent of the new millennium as a result of globalization, digitization and the growing pressure on the protection of the environment.

The authors and the publisher believe that the new book on management will be as popular as the previous editions and will become a standard tool for managers in their everyday work.

A book on brewing: Pivovarství – teorie a praxe výroby piva

Doc. Dr. Ing. Pavlína Basařová (Department of Chemical Engineering, FCE) was part of the team (which also included Gabriela Basařová, Jan Šavel, Petr Basař, Pavlína Basařová and Adam Brož) that prepared the second revised edition of a book on brewing called ***Pivovarství – teorie a praxe výroby piva*** (Brewing – The Theory and Practice of Beer Production), whose first edition was published in 2010. The brewing industry has seen a rapid development since the book was first published; therefore, the authors have added updated information in every chapter on new technologies, equipment and scientific findings, including references to new sources of information.

The book has 16 chapters, in which it looks into the whole process of beer production. The first chapter deals with the ingredients needed for the production of beer (malt, hops and hop products, water and auxiliary ingredients). A separate chapter is dedicated to yeast. The main part of the book is made of chapters that give a detailed description of the production of beer from the preparation of wort in the mash tun, fermentation and ageing, filtration (including separation and membrane technology) to pasteurization and racking. In the book, the properties of different beers and the physical chemical and sensor stability of beers is compared, the ageing process of beer and quality assessment is explained. Other chapters are dedicated to enzymes that are important in the production of beer, the microbiology of beer brewing, quality management, hygiene and sanitation in the production facilities, energy management, waste management and emissions. At the end, the book discusses the health aspects of beer. Here, the chapters usually open with a short description of the historical development, followed by the theoretical basics, an overview of the used technology, including innovation, laboratory control, etc. Each chapter is supplemented with an exhausting list of references.

In its scope and concept the book is intended for students of bachelor's, master's and doctoral studies studying brewing, brewery experts as well as to interested members of the general public who want to know more about this traditional Czech industry.

3 Increasing the efficiency and quality of doctoral studies

Enhancing the quality, openness and internationalization of doctoral studies (MEYS SP2021+: 3C)

Operational programme Research, Development and Education (OP RDE)

In 2021, the implementation of two projects from the OP RDE call "Development of Research Oriented Study Programmes" was completed. In the framework of the ***MOST DSP*** project focused on modernization of the existing doctoral study programmes and creation of new ones at the four faculties, teaching started in 15 newly accredited doctoral study programmes and foreign stays of selected students in the first year of the newly accredited DSPs were organized. The MOST DSP project had total eligible costs of CZK 14.5m. In the ***MEDOK UCT Prague*** project, eight double degree doctoral study programmes were prepared and approved by internal accreditation. The DD DSPs were prepared in cooperation with partner institutions in Europe. The MEDOK UCT Prague project had total eligible costs of nearly CZK 9m. The implementation ended in November 2021. Employees of all four faculties were involved in the implementation of the two projects. The implementation of the project ***Conservation Sciences***, which has a budget of CZK 3.5m and is implemented at FCT, has been extended until September 2022. A doctoral study programme in cooperation with the Faculty of Restoration of the University of Pardubice in Litomyšl has been accredited in the project. The programme was opened in the 20201/2022 academic year. All three projects will report values of the following indicators: students in revised or newly accredited doctoral study programmes enrolled in the second year of studies.

1st edition of Lean Startup for students organized by UCT Prague

The Lean Startup course was held at UCT Prague for the first time in the autumn. It was intended for students in chemical branches (PhD students and students in the last year of their master's studies). It offered them an insight into a career in start-up companies and other roles that use entrepreneurial skills and thinking (e.g. "intrapreneurs", or internal entrepreneurs in existing companies, and thinking about your own life like it was a start-up).

In the course, students developed their plans and talked with users to identify their problems. After that they developed a solution, tested it with users and created a business model. The course ended with team presentations before an expert committee composed of outside experts. The committee gave suggestions on how the students' enterprises could move forward, what could the next steps be and what risks could lie ahead. Two teams made it until the very end of the course. One team solved the problem of how to update a CV for more roles. The other team focused on technical innovation in irrigation. During the course, students also attended a number of lectures in this field. The course was organized by the **Department of Economics and Management UCT Prague**. The main partner of the pilot course was Impulse Ventures, a venture capital investor focused on technology start-ups in Central Europe. The success of the course was an impulse to prepare other versions and activities focused on the support of entrepreneurial, innovation and managerial skills of students and employees at UCT Prague.

Support to internal grants for DSPs from OP RDE

The implementation of the project ***IGRA@UCTP*** in the framework of the OP RDE call "Increasing the Quality of Internal Grant Schemes at Universities" began in May 2020. The project has a budget of CZK 34m. The aim of the project is to implement system measures leading to support of competitions for student scientific projects at UCT Prague that are a key component in research oriented study programmes. At the start of the year, the Internal Grant Competition at UCT Prague – IGRA@UCTP for grants for PhD students was announced. Following expert assessment, grants of 14 lead researchers received grant funding. Each grant has a team of 2 to 5 researchers and the implementation is planned for 20 months until the end of 2022. The solution of students' grants also includes participation in offered educational opportunities and an activity held abroad. After the pilot round of the IGRA@UCTP competition is assessed, positive feedback will be implemented into the rules for the Internal Grant Competition at UCT Prague. The implementation is planned until mid-2023.

4 Strengthening strategic management and efficient use of capacities in the field of research and development at universities

Completing a comprehensive change in the environment and setting up processes in RDI at UCT Prague (MEYS SP2021: 4A)

Initiation grant at UCT Prague

As is the tradition, UCT Prague opened a call for two-year **initiation grants** supported from the Dagmar Procházková Fund. A successful implementation of an initiation grant means the applicant can create an independent research area at UCT Prague. An eligible project proposer must be a scientific research worker with international experience who received a PhD in the past 8 years, has not been employed at UCT Prague for more than one year and has not received an initiation grant in the past. In 2021, the grant was given to **Ing. Jan Holub, Ph.D.** (Department of Inorganic Chemistry, FCT), who received CZK 2.4m for the solution of his project called *Supramolecular Grids: Versatile Scaffold for Multivalency Studies and Surface Engineering*.

Winners of junior grants

In the **Junior Grant competition** of the Rector of UCT (JIGA) financed from the resources of the contribution for the Institutional Plan of UCT Prague, a total of 11 projects were supported in 2021 with up to CZK 220,000 per project. The allocated financial resources are used to support research and kick off a career in science for junior researchers. Support was given to 3 projects at FCT (**Ing. Tomáš Hartman, Ph.D.** – *Photoactive 2D Materials Based on Germanium*, **Ing. Tereza Inger Uhlířová, Ph.D.** – *Characterization of Microstructures of Heterogeneous Materials by Global Descriptors and Their Use for Predicting Effective Elastic Properties and Thermal Conductivity*, **Ing. Ivan Čmelo, Ph.D.** – *Interrelation Profiling of Biologically Active Substances*), 2 projects at FET (**Ing. Vojtěch Kouba, Ph.D.** – *RECON: Recovery of Nitrogen from Wastewater via Inhibiting the Last Step of Denitrification by Sulphide*, **Ing. Josef Farták, Ph.D.** – *Implementation of Analytical Procedures of Solid Materials at the Department of Power Engineering*), 3 project proposals from FFBT (**Ing. Eva Jablonská, Ph.D.** – *Advanced Methods of Cytocompatibility Testing of Metal Biomaterials and Biological Activity of Plant Extracts*, **Ing. Roman Bleha, Ph.D.** – *Nanocomposite Polysacharide Films as Special Coating and Healing Carriers of Biologically Active Substances*, **Ing. Michal Stupák, Ph.D.** – *Using Different Types of GC–MS Techniques for Studying Cannabis Metabolome*) and 3 projects by reseachers at FCE (**Ing. František Králík, Ph.D.** – *Development of Methods of Vibration and Chiropractic Spectroscopy for Identification and Study of Prohormones*, **Ing. Adéla Jeništová, Ph.D.** – *Development of Cell for Transcorneal Transfer Using 3D Printing and Monitoring of Structural Changes on Cornea Caused by Penetration of Biologically Active Substances* and **Ing. Denisa Lizoňová, Ph.D.** – *Increasing Efficiency of Cancer Treatment Using Nanoparticles through Dose Optimization*).

Implementation of scientific research projects in the framework of EU Operational Programmes

In 2021, UCT Prague solved four projects announced in OP RDE calls and focused on mobility of researchers. At the end of March, the implementation of project ***CHEMFELLS4UCTP*** (call "International Mobility of Researchers – MSCA-IF") with total eligible costs in the amount of CZK 17.9m supporting 3 incoming and 1 outgoing mobility ended. The implementation of project ***CHEMFELLS II*** (call "International Mobility of Researchers – MSCA-IF III") with total eligible costs in the amount of CZK 5.5m supporting 1 incoming and 1 outgoing researcher mobility ended at the end of the year. The implementation of projects ***CHEMFELLS IV*** (call "International Mobility of Researchers – MSCA-IF IV") supporting 9 foreign researchers coming to the Czech Republic and 1 researcher travelling abroad with total eligible costs in the amount of CZK 39m and ***ChemJets2*** ("International Mobility of Researchers, Technical and Administrative Staff of Research Organizations") with total eligible costs in the amount of CZK 21.5m that will support 8 incoming mobilities was ongoing. The two projects will end in mid-2023.

The project ***NANOROBOTS*** was in its fifth year of implementation. The project received CZK 219.5m from the OP RDE call "Excellent Research Teams". The international team equipped with the necessary equipment infrastructure led by key foreign researcher **Prof. RNDr. Martin Pumera, Ph.D.**, who came from the Nanyang Technological University, Singapore, does excellent research in a new category of nanotechnologies, namely autonomous robots that can be used primarily in medicine and ecological restoration. In cooperation with strategic foreign partners, the research team does excellent research with a number of published top quality publications. The implementation phase of the project will continue until October 2022.

2021 was also the fourth year of implementation of three projects at UCT Prague supported from the OP RDE call "Pre-Application Research". In case of the ***ORGBAT*** project (FCE), the grant was given to UCT Prague together with two project partners, the University of Pardubice and Centrum organické chemie s.r.o. The total eligible costs of the project are CZK 54.5m, of which the UCT's share is CZK 26.9m. UCT Prague is a partner in two other supported projects. The ***PaC-NG*** project (FCT) has total eligible costs in the amount of CZK 32.3m and the recipient of the grant is the Faculty of Mathematics and Physics CU. The aim of the PaC-NG project is basic development of advanced thin layered nanocatalysts with a low amount of precious metals and their corrosion resistant carriers for hydrogen fuel cells stacks with polymer membranes. The recipient of the grant in case of the ***CEREBIT*** project (FFBT) is the Palacký University Olomouc. The aim of the project is the use and development of modern technologies or preparation of recombinant high-affinity protein binders for the development of vaccines, imunnotherapeutics and theranostics. The total eligible costs of UCT Prague are CZK 6.4m. All three projects are planned to end in 2022.

For five years now the experts at the Centre for Information Services UCT Prague have been actively involved in the implementation of the individual system project ***CzechELib*** under OP RDE. The main recipient of the grant is the National Library of Technology. The project's aim is to

create a national centre that will make centralized purchases and will make available to the whole research and educational sector in the Czech Republic key electronic information sources (EIS) for the needs of science, research and education. The project's implementation will end at the end of 2022.

Under the auspices of Technopark Kralupy, a total of 8 projects from the OP EIC calls "Application" and "Partnership for Transfer of Knowledge" where UCT Prague acts as a partner were implemented in 2021. The total amount of financial resources for UCT Prague is CZK 37.2m.

Support to research excellence and social relevance (MEYS SP2021+: 4C)

Functional nanorobots for navigated combined cancer therapy

In May 2021, acting as coordinator, the Center for Advanced Functional Nanorobots headed by **Prof. RNDr. Martin Pumera, Ph.D.** (Department of Inorganic Chemistry, FCT) began a new research project focused on nanorobots for navigated combined cancer therapy with *in vivo* experiments. The project received support of nearly CZK 20m for the duration of 4 years from the **Ministry of Health of the Czech Republic**. The consortium has four members – UCT Prague, the First Faculty of Medicine of Charles University, the Faculty of Medicine of Masaryk University and the University Hospital in Motol. The consortium also collaborates with a partner from abroad – Harvard Medical School (the USA).

"Targeted delivery of anti-tumour drugs and nanotechnologies are two research areas of cancer treatment that have been developing in parallel for two decades," says Prof. Pumera, adding that several promising therapeutic systems with remotely controlled nanoparticles transporting anti-cancer drugs have entered the clinical study phase. In the project, nanorobots will target to tumour tissue the effect of new curcumin conjugates with commercially available drugs and photosensitizers.

The members of the consortium have the following roles – Prof. Pumera's team will prepare new types of nanorobots, the team at the First Faculty of Medicine CU will prepare unique therapeutic structure motives based on curcumin. The Faculty of Medicine of Masaryk University will then test the proposed nanorobot systems with the given therapeutic drugs *in vitro* and, in collaboration with the University Hospital in Motol, also on *in vivo* models with xenografts derived from tumour tissue of patients with carcinomas of the head and neck.

A second grant for Prof. Sofer

The ERC CZ programme is aimed at supporting highly promising and high-quality projects of frontier research that were successful in both rounds of international peer review done by specialized panels of the European Research Council, but due to insufficient financial resources have not received funding and have not started yet, and the applicant has decided to implement the project at a research organization located in the Czech Republic. In 2021, **Prof. Ing. Zdeněk Sofer, Ph.D.** (Department of Inorganic Chemistry, FCT) received support for a second project from a public competition in the ERC CZ research, experimental development and innovation programme provided by the Ministry of Education, Youth and Sports. The five-year project called *New Generation of Monoelementary 2D Materials* supported with CZK 64m follows from a grant given to Prof. Sofer in 2020. The supported project studies methods of exfoliation of 2D materials, preparation of monolayers by physical and chemical methods and their functionalization using covalent and non-covalent interactions. The newly synthesized materials will be studied for applications in energy storage in the form of batteries and supercapacitors, heterogeneous catalysis and photoelectrocatalysis and optoelectronic applications in hybrid OLED structures.

Petr Kovaříček receives prestigious GA ČR JUNIOR GRANT

Ing. Petr Kovaříček, Ph.D. (Department of Organic Chemistry, FCT) received support from the Czech Science Foundation (GA ČR) for his project called *Reaction Networks at Phase Interfaces for Dynamic Self-Assembly* in the second year of the JUNIOR STAR competition. The project implementation will begin in 2022. The JUNIOR STAR competition of the Czech Science Foundation supports projects of the best Czech junior scientists who have earned a PhD in the past 8 years. The provided funding will allow them to study own scientific topics and establish their own research group. At the same time, Dr. Kovaříček received support from a three-year start-up grant of the Experientia Foundation in 2020. In the same year he also received support for a two-year initiation grant from the Dagmar Procházková Fund.

Joint online seminar on Sustainable Energy and Environment Remediation

In October 2021, UCT Prague in collaboration with National Chung Hsing University in Taiwan organized the second joint webinar where the representatives of the participating institutions presented their research in **Sustainable Energy and Environment Remediation**. The half-day webinar was in English. The programme included 5-minute and 20-minute presentations by researchers from the two institutions. 5-minute presentations were given by UCT Prague researchers **Prof. Ing. Karel Friess, Ph.D.** (Department of Physical Chemistry, FCE) and **doc. Ing. Jan Mareš, Ph.D.** (Department of Computing and Control Engineering, FCE). 20-minute presentations were given by UCT Prague researchers **Prof. Ing. Pavel Kotrba, Ph.D.** and **Prof. Ing. Ondřej Uhlík, Ph.D.** (both from the Department of Biochemistry and Microbiology, FFBT) and **Ing. Arch. Ing. Petr Štěpánek, Ph.D.** (Department of Economics and Management).

Awards and achievements in scientific research activity

In May, **Prof. RNDr. Bohumil Kratochvíl, DSc.** (Department of Solid State Chemistry, FCT) received from Prof. John, president of the Czech Chemical Society, the CCS's highest award – the Czech Chemical Society Medal. Prof. Kratochvíl was given the award in recognition of the work he has done for the CCS as a scientist and teacher, primarily as the 8th editor in chief of the CCS's Chemické listy journal in 1996–2020.

Genpor. Ing. Drahoslav Ryba, director general of the Fire Rescue Service of the Czech Republic, presented the **Medal of Honour of the Fire Rescue Service of the Czech Republic** to **Prof. Dr. Ing. Dalibor Vojtěch**, head of the Department of Metals and Corrosion Engineering (FCT) and Vice-Rector for Research and Development at UCT Prague. Prof. Vojtěch has been collaborating with the Technical Institute of Fire Protection for more than 10 years. He first participated in the research on beads that form on electrical copper conductors during fire. By analysing the beads it can be determined, with some probability, whether the fire was caused by electrical wires or whether the beads appeared on the conductors secondarily. Another long-term research activity focused on safety of aerial ladders and the speed of material degradation.

The **Harvey W. Wiley Award** is the most prestigious scientific award given by the Association of Official Analytical Chemists (AOAC INTERNATIONAL) to scientists that have significantly contributed to the development of analytical methods in AOAC's areas of interest. In 2021, it was presented to **Ing. Kateřina Maštovská, Ph.D.** (Department of Food Analysis and Nutrition, FFBT). Dr. Maštovská contributed improvements to the widely used QuEChERS analytical methodology and applications, developed new methods for analysing veterinary drugs residues and contaminants in food, introduced the latest technologies for routine analytical use and is the author of a pioneering methodology for measuring cannabinoids in cannabis. She is currently a Chief Scientific Officer at Eurofins US Food Division and also a Technical & Industrial Director for Pesticides within the Operational Best Practices Program at Eurofins Scientific.

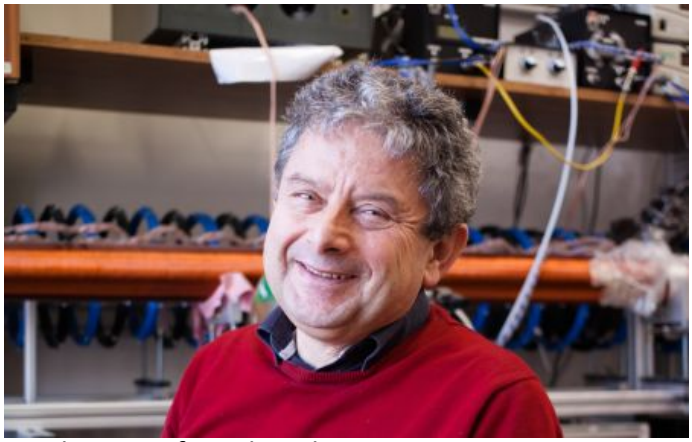
Dr. Maštovská began her career more than 25 years ago at the Laboratory of Food Contaminants and Toxicants at UCT Prague, where she developed and ran methods for analysis of pesticide residues and other food and environmental contaminants, primarily based on gas chromatographic separations with mass spectrometric or element-selective detection.

She led the AOAC Analytical Community on Chemical Residues and Contaminants from 2011 to 2016 and served as a Director for an AOAC collaborative study on a method for polycyclic aromatic hydrocarbons in seafood as an emergency response to the oil spill in the Gulf of Mexico. She received the AOAC Study Director of the Year award for this work, and the method became

an AOAC Final Action Official Method in 2014. Her work on advanced methods for pesticide residue analysis and expertise in residue chemistry earned her a role as independent expert at the United Nations Food and Agricultural Organization and the World Health Organization.

"I am truly honoured to receive the AOAC Wiley Award and grateful to many of my colleagues at Eurofins, AOAC and in the greater analytical community for their support and numerous collaborations over the years. My special appreciation goes to Professor Jana Hajšlová, who was at the beginning of my career and who nominated me for this award." Prof. Ing. Jana Hajšlová, CSc. (Department of Food Analysis and Nutrition, FFBT) was the first Czech female scientist to receive the Harvey W. Wiley Award in 2016.

During the opening of the Digital World Water Congress 2021 at the turn of May and June, Kala Vairavamoorthy, Executive Director at IWA, and Tom Mollenkopf, IWA's President, announced the appointment of two new **honorary members of the International Water Association** – **Prof. Ing. Jiří Wannner, DrSc.** (Department of Water Technology and Environmental Engineering, FET) and Prof. Mark van Loosdrecht from the Delft University of Technology, the Netherlands. *"To me, this is recognition for the whole Czech water engineering, since it is rare for IWA to award honorary membership,"* Prof. Wanner commented on the appointment. Prof. Wanner has recently been focusing on technologies for reusing of treated wastewater to replace water from rivers and potable water. These technologies are of growing importance as there is a risk of water scarcity due to droughts and the price of potable water is going up. Prof. Wanner also works in the Expert Group for Treatment and Recycling of Municipal Wastewater of the Czech Water Association and is a member of the EWA's European Technical and Scientific Committee.



On the eve of the celebration of 17 November 2021, **RNDr. Štěpán Urban, CSc.** (Department of Analytical Chemistry, FCE) received the **Medal of the Josef, Marie and Zdeňka Hlávka Foundation**. The medal was presented to him at the Lužany Chateau in recognition of his lifelong work.

Prof. Urban is a renowned expert in high-resolution infrared and microwave spectroscopy – he has developed a theory of rotation-vibration Hamiltonians together with sophisticated programme tools for a detailed analysis of

spectra and has worked in the developing field of terahertz spectroscopy, where he focuses on weak intermolecular interactions in the condensed phase. He has lately been recognised as a pioneer in the field of forensic olfactronic identification of persons and digitization of the odour signatures, including the detection of group characteristics of a person (ethnicity, gender, blood type, etc.) using a detailed analysis of the chemical composition of odour. Štěpán Urban has worked and studied abroad and is the author of more than 150 scientific publications in international peer-reviewed journals. He is the recipient of 12 grant projects (including a US project and a European project) that allowed him to build cutting-edge microwave, centimetre, submilimetre high-resolution spectroscopy, terahertz spectroscopy and olfactronic laboratories at UCT Prague. All these laboratories are unique in the Czech Republic. He has supervised dozens of student theses. During his 8-year tenure as the head of the Department of Analytical Chemistry at UCT Prague, the department experienced a period of unprecedented growth and has become a top forensic training workplace for dozens of Czech and international students.

After a two-year hiatus, the Evening with Czech Chemistry organized by the Association of Chemical Industry of the Czech Republic was held in the Prague Congress Centre in October. The **Czech Chemistry Personality** awards were presented during the event. The Board of the Association of Chemical Industry gave the award to five outstanding persons of the Czech Chemistry and presented one honorary mention for long-lasting work at the Association of Chemical Industry. **Prof. Ing. Milan Pospíšil, CSc.** (Department of Petroleum Technology and Alternative Fuels, FET) was among the awarded.

UCT Prague and the Prague Innovation Institute sign a memorandum of cooperation

In July 2021, UCT Prague and the Prague Innovation Institute (Pii) signed a memorandum of cooperation. The agreement will deal with strengthening the principles of circular economy, primarily water recycling and protection of the environment, education and innovative solutions.

The two institutions plan to use the latest scientific findings and jointly contribute to the support of research, development, innovation and business in the Capital City of Prague.

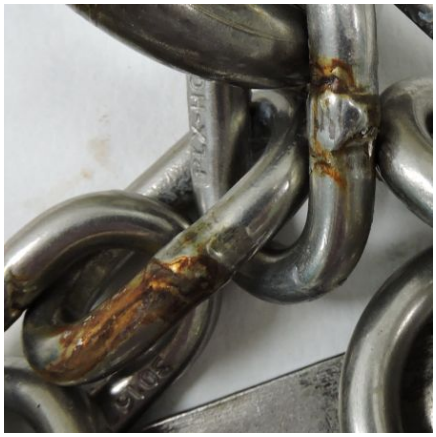
UCT Prague and Pii want to develop cooperation mainly in applied research projects. They plan to support platforms that promote the creation and development of newly established spin-off and start-up companies and support innovative activities in incubators and accelerators. This is in line with the goals of the Innovation Strategy for the Czech Republic until 2030, the Smart Prague Concept until 2030 and the Regional Innovation Strategy (RIS3).

"I'm very happy that together with Rector Matějka we have signed the memorandum of cooperation between UCT and the Prague Innovation Institute. Since UCT is a leader in excellent research in water recycling, cooperation in the field of circular economy is a logical step. The Prague Innovation Institute is preparing a strategy to use circular economy in the framework of the Climate Plan for Prague. Together with Rector Matějka we came up with other ideas how to support innovation in urban development and education, and my colleagues have already started working on them," says Bohumil Kartous, director of Pii.

The Prague Innovation Institute was established by the Capital City of Prague as a registered office in 2020. The public-benefit corporation focuses on supporting the development of education, the city and the environment. It also wants to establish connections between the academic, public and private sectors.

First accredited laboratory of the International Climbing and Mountaineering Federation at UCT Prague

Technopark Kralupy UCT Prague has become the first accredited laboratory of the International Climbing and Mountaineering Federation (UIAA) for testing of the revised Standard 123, which regulates climbing anchors (bolts, rivets, etc.) that climbers use, which ensures their safe usage for at least 50 years. The revised standard is the result of 8 years of collaboration between the UIAA, the French Corrosion Institute in Brest and **Ing. Tomáš Prošek, Ph.D.** (Technopark Kralupy of the University of Chemistry and Technology in Prague).



Rock climbing is a dangerous sport with a lot of deadly accidents. The causes may differ – the most common is a human error, but sometimes it can be due to the failure of the climbing anchors. And this is exactly what the three organizations focused on: *"I began working with the UIAA in 2014 – they contacted me after I'd written some articles on corrosive cracking in stainless steel under atmospheric conditions,"* says Dr. Prošek, adding: *"It turned out that this rather rare and not much studied mechanism of corrosion was the reason why many climbing anchors around the world failed. In order to prevent this from happening, we proposed, together with the UIAA, a standard for testing of climbing anchors that would ensure their safe use in terms of corrosive cracking,"* explains Dr. Prošek, who leads his own research group at Technopark Kralupy.

Aside from the ongoing collaboration with the UIAA, Dr. Prošek's group does research on hydrogen embrittlement of high strength steel, develops equipment for corrosion monitoring in the atmosphere and coatings filled with recycled zinc and prepares a classification of corrosiveness for historical lead artefacts. The group also studies long-term resistance of pre-coated sheet metal for roofs and does dozens of expert jobs for industrial partners.

The PYREKOL project achieves concrete results

In May, a new pyrolysis unit for processing of plastic waste was inaugurated at ORLEN Unipetrol in Litvínov. The pyrolysis unit is the result of **PYREKOL**, a joint project of ORLEN Unipetrol, UCT Prague and ORLEN Unipetrol Centre for Research and Education, and it focuses on chemical recycling of plastics and its implementation in regular manufacturing. On behalf of UCT Prague, a team of experts from the Department of Petroleum Technology and Alternative Fuels, the Department of Power Engineering and the Department of Gaseous and Solid Fuels and Air Protection led by **Ing. Petr Straka, Ph.D.** (Department of Petroleum Technology and Alternative Fuels, FET) works on the research part in the project. The project, which has a budget of CZK 71.7m, is supported from the grant programme TREND of the Technology Agency of the Czech Republic.

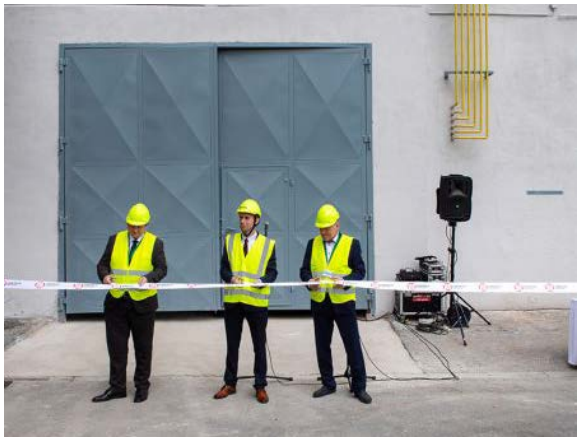
The accumulation of used plastics on the land and in the oceans is one of the greatest environmental challenges humanity is facing. Due to the large number and variety of plastic waste, the tried and tested pyrolytic process is now gaining momentum and it is expected that this relatively simple technology could be used to reprocess plastic waste to materials that could be processed by the petrochemical industry. PYREKOL does not only aim to propose a technology for the pyrolysis of plastic waste and tyres, but also to implement the products of the pyrolysis in the refining process. In this way, they could be used for the production of basic petrochemicals and components for motor fuels. In the framework of circular economy, the project outcomes should help efficiently reuse plastic waste and tyres in the petrochemical industry and reduce carbon footprint.

New DCPC technology for ORLEN Unipetrol thanks to contribution from Professor Pašek

In the middle of March, the largest petrochemical company in the Czech Republic, ORLEN Unipetrol, began the construction of a unit for the production of a new product, dicyclopentadiene. This liquid carbohydrate abbreviated as DCPD will be produced using a technology developed by researchers at ORLEN Unipetrol in collaboration with UCT Prague. The product has a wide use in the automotive industry, construction, electrical engineering, medicine and pharmacy. The construction of the new unit will cost CZK 831 million. ORLEN Unipetrol plans to produce up to 26 tonnes of dicyclopentadiene each year. The company expects the product will be launched on the market in the second half of 2022.

The technological process of DCPD isolation from the so-called light pyrolysis oil was developed in collaboration with the research team led by **Prof. Ing. Josef Pašek, DrSc.** (Department of Organic Chemistry, FCT). The installed production unit's capacity will amount for ca 25% of the overall production of DCPD in this quality in Europe. The collaboration between UCT Prague and ORLEN Unipetrol has a long tradition and has been a great success. It goes back to the 1990s and it focuses on the development of technologies for oil processing and petrochemistry.

New research centre CirkTech



In June, UCT Prague opened a new **research centre, CirkTech**, which will do research in advanced mechanical and chemical process for circular economy. Its first task will be the testing of UCT Prague's patented technology for the recovery of rare metal lithium. The centre is part of **Technopark Kralupy** and is located in the Lafarge Cement plant in Čížkovice near Lovosice. Its key equipment is an **experimental rotation furnace**. *"In addition to leading scientists and researchers who work in the field of circular economy, we can use unique equipment that can test new technologies under semi-operational conditions and research facilities of our best university departments,"* says Prof. Ing. Milan Pospíšil, CSc., Vice-Rector for Strategies and Development, UCT Prague. The experimental rotation furnace tested under semi-operational conditions UCT Prague's own **patented technology InCeMet**, developed by Ing. Hong Nguyen Vu, PhD. (Department of Metals and Corrosion Engineering, FCT). *"This technology has potential to earn UCT Prague a lot of money. The process is protected by two national and one international patent. We are in talks with ČEZ, a.s. and Geomet s.r.o., for whom the technology is interesting in view of the planned extraction of lithium ores and the implementation of an environmentally friendly technology for obtaining and reprocessing of lithium, whose importance is now fast increasing,"* says Prof. Dr. RNDr. Pavel Matějka, UCT Prague Rector. The technology also carries potential as a universal zero-waste process for obtaining metals from large-volume waste (plastics, ceramics, fly ashes, etc.) and can be used for ecological recycling of various metals or the use of secondary raw materials, such as fly ash from power plants, to make commercial products.

UCT Prague built CirkTech using own money in the amount of CZK 40 million; the operating costs will be in the region of CZK 20m per year. In the initial phase, CirkTech plans to closely cooperate with Lafarge Cement, a.s. Čížkovice, ČEZ, a.s., Geomet s.r.o., VÚHU, a.s. Most, the Ústí nad Labem Region and the J. E. Purkyně University.

At the end of August, research center CirkTech UCT Prague organized a working session on the future of processing of lithium from Cínovec and the Gigafactory strategic project. The session was attended, among others, by Prime Minister Andrej Babiš, Minister of Transport and Minister of Industry and Trade Karel Havlíček, governor of the Ústí nad Labem Region Jan Schiller, CEO of ČEZ Daniel Beneš, chairman of TAČR Petr Konvalinka, chairman of the Association of Building

Entrepreneurs of the Czech Republic Jiří Nouza and other leading politicians, businesspeople and academics. UCT Prague was represented by the Rector, the Vice-Rector for Strategies and Development, the Dean of FCT and members of the Board of Trustees of UCT Prague.

In the next two years, the management of ČEZ will decide whether it will use the InCeMent method for commercial production of lithium from the ores mined in Cínovec. An alternative modified gypsum technology, also called traditional or lye technology, is also being considered. *"We would like to take the decision on the method to be used for processing in 2023 so that we are able to start production in 2025 to match the schedule with the schedule for using lithium in manufacturing of batteries, mainly batteries for electric cars,"* Daniel Beneš told journalists. According to information from the Ministry of Industry and Trade of the Czech Republic, the Czech Republic does not want to sell the extracted lithium ore on global markets, but wants to create a manufacturing chain at the top of which would be the so-called Gigafactory – a plant that would produce battery cells for electric vehicles. Therefore, the government, represented by the Ministry of Industry and Trade, has recently signed a memorandum with ČEZ on the construction of Gigafactory.

UCT Prague receives support from EIT Raw Materials call

Together with four other organizations, UCT Prague received support from the prestigious call for projects KAVA 8 of the European Institute of Innovation and Technology (EIT) for the project called **Sustainable Zero-Waste Lithium Production (InCeMeTs)**. The KAVA 8 call was for innovation projects focused on tested technologies that need further funds for upscaling, demonstration or implementation. Support was given to a total of 27 project applications out of more than 100 applications. The project received a total of EUR 4.5m in funding for 30 months. UCT Prague will share the resources with the other members of the consortium – Geomet, Lafarge Cement, MEAB (Germany) and the National Technical University of Athens (NTUA). *"The fact that we received the grant clearly shows that the European Institute of Innovation and Technology trusts our technology. Also, the grant is among the largest ever within the supported projects. At the same time, our project is among the few supported European projects from Eastern Europe,"* says Ing. Hong Nguyen Vu, Ph.D. (Department of Metals and Corrosion Engineering, FCT), the author of the InCeMeT technology. *"The role of the university in the project will be crucial – we are the coordinator of the technological part of the project, we will be responsible for the operation of the pilot testing of the pyrometallurgical and hydrometallurgical part, for economic technological evaluation of the technology and cooperation with a renowned engineering firm on the final feasibility study,"* adds Dr. Hong. The grant will allow the members of the consortium to design and build two more pilot apparatuses for the production of high purity Li_2CO_3 and LiOH fit for batteries, cover the costs of obtaining the Li concentrate, the operation of the pyrometallurgical and hydrometallurgical part of the InCeMeTs technology under semi-operational conditions and to get the InCeMets technology ready for the industrial implementation phase.

UCT Prague has a longstanding intense cooperation with the industrial sector in the Czech Republic and abroad. For more information and to see examples of the collaboration between UCT Prague and the application sector, see Section C, Chapter 11a.

Developing international cooperation in RDI (MEYS SP2021+: 4D)

International scientific research grants

In 2021, a total of 31 international grants were solved at UCT Prague, of which 19 projects were carried out under the Horizon 2020 programme, 1 project was carried out under the Research Fund for Coal and Steel (RFCS) programme and 1 project was carried out under the collaboration programme Czech Republic – Free State of Saxony 2014–2020, and 10 projects were projects of other international providers (for more, see Part C, Chapter 7d).

European platform will lay a path for closer cooperation in food safety

FoodSafety4EU
MULTI-STAKEHOLDER PLATFORM FOR FOOD SAFETY IN EUROPE

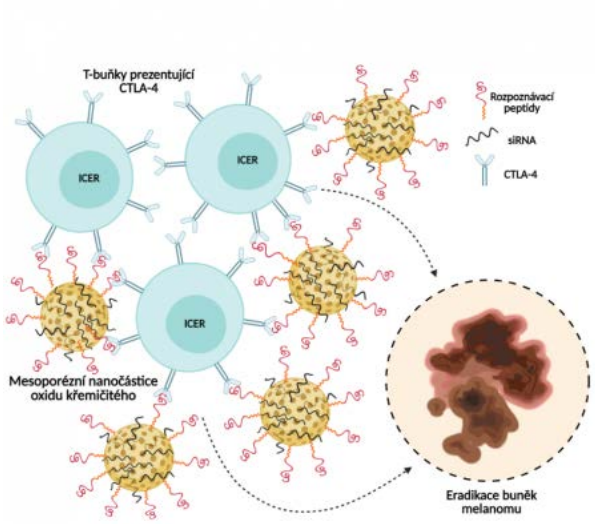
Safe and nutritious food is key for high-quality life and healthy lifestyle. The current system of food safety in the EU is not flexible enough to be able to adapt to the ever-changing food chain. Launched in 2021, the FOODSAFETY4EU project is a step forward towards a more active and cooperative food safety system (FFS) in Europe. The Department of Food Analysis and Nutrition (FFBT), UCT Prague, is one of the 23 partners in the consortium.

The aim of the project funded from the European Union is to design, develop and launch a platform for different types of users in order to create a network of FSS stakeholders (such as research organizations, controlling bodies) at national, European and international level. In order to facilitate this collaboration, the consortium will develop knowledge and digital tools to activate a structured participation process among the stakeholders. The European network is currently composed of 23 members of the consortium and 44 supporting partners (food safety authorities, consumer organizations, research institutions, etc.). It is expected that by the end of the project in 3 years, the community will have grown and a European forum for food safety will be created.

The Department of Food Analysis and Nutrition UCT Prague is a leader of the working group for the *Definition of the Research and Innovation Framework for the Future Policies*, while also being an *East Hub leader*, where it will coordinate activities focused on the interaction between stakeholders from different areas (research institutions, controlling bodies, representatives of different interest groups, organizations focused information dissemination, etc.) involved in food safety. The other partners and supporters of the project from the Czech Republic are the Federation of the Food and Drink Industries of the Czech Republic and the Czech Agriculture and Food Inspection Authority.

Professor Sofer becomes the first Czech coordinator of a project from the EuroNanoMed III call

Prof. Ing. Zdeněk Sofer, Ph.D. (Department of Inorganic Chemistry, FCE) received funding from the international call to support breakthrough projects in the field of nanomedicine, EuroNanoMed, announced by the French National Research Agency for his **TEIGER** project on Cancer Immunotherapy: Rejuvenation of Anti-Cancer Response by Immune Checkpoint Blockade Using Novel Multifunctional Nanoparticle to Block CTLA-4 and Eliminate ICER. The 3-year project will be solved by a consortium of teams from the Czech Republic, France and Taiwan.



Immune checkpoint blockade is a therapeutic method that inhibits the mechanisms that reduce the time and level of response of the immune system. Cancer treatment targeted at the immune system is a very interesting possibility since a successful cancer treatment requires that all cancer cells be eliminated. Even a small number of cancer cells that survive the current treatment often cause recurrence. In this latest imunotherapeutic approach, only a few thousand white blood cells need to be activated, which then trigger a strong immune response against cancer cells. A concrete example of such therapy is the application of specifically modified multifunctional mesoporous silica nanoparticles (MSN) targeted at the immune system checkpoints inhibitors (ICER and CTLA-4) regardless of their cell localization.

The aim of the TEIGER project is to trigger antitumour immunity to the melanoma by targeting CTLA-4 positive T cells. For this purpose, peptide-decorated nanoparticles were used that will use molecules of small interfering RNA (siRNA) designed against ICER. Targeting ICER in CTLA-4 positive regulatory T cells will allow antigen-presenting cells to activate tumour specific T cells. This approach may replace ipilimumab, a monoclonal antibody that blocks CTLA-4 used clinically in melanoma treatment.

Employees from all four UCT Prague faculties will be involved in the project; the other partners are Josef Bodor at NanoSYS Biologics, the Czech Republic, and V-Nano, France, a pharmaceutical company that will transfer the outcomes of the research to industrial practice. Preclinical and clinical trials will be done at two Taiwanese universities, National Yang-Ming University and Chang Gung University. The project will run until the end of 2023.

International GAČR projects for UCT Prague

Doc. Ing. Michal Kohout, Ph.D. (Department of Organic Chemistry, FCT) received GAČR funding for his project *Novel Chiral Ion-Exchangers for Chromatographic Enantioseparations* in

cooperation with the Russian Foundation for Basic Research (RFBR), Russia. Thanks to GAČR's partnership with the National Science Centre of Poland (NCN), a joint project of the team of Prof. Ing. Radek Cibulka, Ph.D. (Department of Organic Chemistry, FCT) and Polish researchers called *Tailoring Flavins for Organic Photocatalysis* received funding. In the framework of GAČR's partnership with South Korea, a project of Prof. Ing. Karel Friess, Ph.D. (Department of Physical Chemistry, FCE) called *New Superhydrophobic Perfluorinated Nanomaterials for Advanced Micro and Bio Applications* was supported. The projects will be implemented from 2021 until the end of 2022 and 2023, respectively.

New partner group of a Max Planck Institute established at UCT Prague

A Czech-German partner group of the Department of Biomolecular Systems of the Max Planck Institute for Colloids and Interfaces (MPIKG) opened at UCT Prague in October. The ceremony and the symposium were attended by Rector Pavel Matějka of UCT Prague and by Prof. Peter H. Seeberger, director of the Department of Biomolecular Systems and member of the Kollegium of MPIKG. The group led by **Ing. Petra Ménová, Ph.D.** (Department of Organic Chemistry, FCT) will focus on organic synthesis, medicinal chemistry and chemistry of saccharides. The partnership with the Max Planck Institute means financial support in the amount of EUR 20,000 per year for the duration of five years, intense scientific cooperation with this prestigious international institution and an opportunity for student exchange. *"It is a cutting-edge department with all necessary equipment and know-how, where students can experience cooperation with the very best,"* says Dr. Ménová, whose research group currently has 10 students in different levels of study. Dr. Ménová worked as a postdoc at MPIKG in 2014–2017. The group will also study synthesis of oligosaccharides potentially used in therapy, such as antigens for vaccines or ligands for lectin receptors.

The Max Planck Institutes (under the Max Planck Society) have a programme to support their alumni, the so-called Max Planck Partner Groups. The applicants must comply with a number of requirements – after working at the Institute, they must go back to their home country, explore a related field and be nominated by the director of the given Institute. *"I was personally approached by Prof. Seeberger – he told me about the programme and said I should apply. I'm really excited that my application was successful, mainly for my students who will be able to gain a broader perspective, get involved in prestigious projects and boost their CVs,"* says Dr. Ménová.

Hydrogen Days 2021 conference

The Department of Inorganic Technology (FCT) co-organized the 11th edition of the international conference **Hydrogen Days 2021**. Green hydrogen and the implementation of hydrogen technologies by 2030 are considered a promising way to reduce CO_2 emissions. How to increase the share of green hydrogen and hydrogen applications in industry, power engineering and mobility? How is it done in the Czech Republic and abroad? What are the plans for the future and where will research and development in this area lead? This and more was on the conference's agenda. The first day focused on information on the development of European policies. Representatives of ministries talked about the current strategies and programmes under preparation in the Czech Republic. This was followed by information about greater demonstration activities to test the functionality of the selected processes and units funded by public and private money. The second day, when experts from around the world gave their presentations, was more technical and specialized. The topics ranged from production and storage to the use of fuel cells and education. **Prof. Dr. Ing. Karel Bouzek** (Department of Inorganic Technology, FCT) was present at the establishment of this international conference and is the chairman of its scientific committee.

UCT Prague hosts the ALIFE 2021 conference

In July, UCT Prague hosted the international conference **ALIFE 2021**, a virtual meeting attended by more than 400 leading international scientists and experts in the field of artificial life simulations. The conference, which has been organized by the International Society for Artificial Life since 1987, focuses on research done in simulations and the synthesis of complex phenomena in computer science, biology, artificial intelligence, robotics, philosophy and cognitive sciences. This year's edition was held at UCT Prague. Its partner was GoodAI, an organization that focuses on research and development of artificial intelligence. The **Distinguished Early-Career Investigator Award** was given to **doc. Ing. Jitka Čejková, Ph.D.** (Department of Chemical Engineering, FCE), general chair of ALIFE 2021, to recognize the organizational work she has done for the ALife community and her work as a scientist. *"The Czech Republic has a long history of studying artificial life and technologies and we were happy to be able to organize the conference. It was very exciting to celebrate the 100th anniversary of robots with the ALife community, although it was only possible online. One of the ALIFE conference's greatest advantages is its interdisciplinary approach, which*

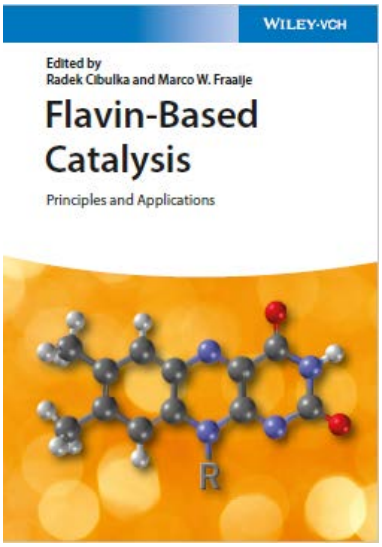
supports participation and cooperation in research, business, art and design. I was very pleased with how varied the presentations, artistic exhibitions and essays were," says doc. Čejková.

8th International Conference on Chemical Technology

The 8th edition of the International Conference on Chemical Technology – ICCT 2021 held online in May was the latest addition to the long list of chemical technology conferences that aim to inform the public about key challenges and problems in the field of chemistry, power engineering and related areas in an international context.

The ICCT's main mission is to develop the sharing of information, exchange of knowledge and experience in Europe in line with the open science approach in modern chemical technologies, sharing of information, trade exchange and in particular international mobility of experts in chemistry. The conference used modern forms of communication to arrange meetings, support cooperation and dialogue, reinforce relationships between managers in government bodies, production plants, renowned scientists at universities and research institutes and gifted students of different chemical branches and from different regions. The 8th edition of ICCT gave participants an opportunity to present and discuss their visions, long-term plans and projects and establish contacts with potential future talented collaborators in these projects.

A new book on flavin-based catalysis is published



UCT Prague's **Prof. Ing. Radek Cibulka, Ph.D.** (Department of Organic Chemistry, FCT) and Prof. Marco W. Fraaije of University of Groningen prepared a book that covers all aspects of flavin-based catalysis. The book was published in June by Wiley-VCH.

"Flavins play an indispensable role in metabolism of all kinds of organisms. Same as in cells, flavins can be used as catalysts in artificial systems – in flasks, for example in the synthesis of new substances. However, in catalysis we can directly use living cells or isolated flavoenzymes," says Prof. Cibulka, the book's co-editor, adding: *"When we wrote this book with my colleagues who come literally from all corners of the world, we believed that it contained all basic and new information about catalysis, photocatalysis or biocatalysis with flavins. But the field is developing so fast that we could write a new chapter already today… which is actually good."*

Popularizing natural sciences and outcomes of creative activity of UCT Prague (MEYS SP2021+: other priority goals II. 10)

VědaFest

In the first week in September, VědaFest (or ScienceFest, formerly called the Science Festival) was held in Dejvice. The festival was in a hybrid form combining a physical and a virtual event so that it could welcome visitors from across the Czech Republic. On 8 September, visitors could come and see the tents of the participating institutions on Vítězné Square. Subsequently, new videoexpositions were available at the VědaFest website until the end of October for anyone who was not able to attend in September. After answering correctly the questions below the videos, also online visitors could win prizes donated by the Prague Zoo, Průša Research, UCT Prague and CTU in Prague. Same as every year, UCT Prague was present at the event with 13 physical stalls and 9 videoexpositions online.

54th edition of the Youth Academy

The **54th edition of the Youth Academy** organized by UCT Prague and the Centre for Young Naturalists of the House of Children and Youth of Prague for students of secondary schools, secondary vocational schools and other interested individuals offered a series of in-person presentations in the afternoon. From October till December visitors could visit 6 lectures on interesting topics given by UCT scientists who used this popular form to present to them some current issues: *Intermetallic Compounds as Metallic Materials of the Future* (**doc. Ing. Pavel Novák, Ph.D.**), *Trends in Detergents and Cosmetics as Seen by a Chemist* (**Prof. Ing. Jan Šmidrkal, CSc.**), *Artificial Life of Chemical Robots* (**doc. Ing. Jitka Čejková, Ph.D**.), *Wastewater: Unpleasant Waste or a Precious Resource?* (**Prof. Ing. Jan Bartáček, Ph.D.**), *Polyethylen as a Fine Chemical* (**doc. Ing. Jan Merna, Ph.D.**) and *Beer Production from a Chemist's Perspective* (**Prof. Ing. Pavel Dostálek, CSc.**).

UCT Prague at the Week of the Czech Academy of Sciences

UCT Prague prepared presentations on current topics for secondary school students and teachers, university students and the general public. **Prof. Ing. Jan Bartáček, Ph.D.** (Department

of Water Technology and Environmental Engineering, FET) gave a presentation called *How Wastewater Analyses Can Help to Handle Epidemics*, **doc. Ing. Martin Kuchař, Ph.D.** (Department of Chemistry of Natural Compounds, FFBT) talked about *Chemistry of Psychedelic Substances – Poison or Medicine?* and **doc. Ing. Martin Paidat, Ph.D.** prepared a lecture on *Hydrogen as a Tool to Decarbonize Society*, where he talked about hydrogen as a universal tool for reducing emissions from industry, transportation and households. A panel with UCT Prague's experts in potable water treatment, **Prof. Ing. Jiří Wanner, DrSc., Prof. Ing. Jan Bartáček, Ph.D., Dr. Ing. Pavla Šmejkalová** (all from the Department of Water Technology and Environmental Engineering, FET) **and Prof. Ing. Václav Janda, CSc.** (Department of Power Engineering, FET) called *How to Get High-Quality Potable Water in the Times of Climate Change?* was moderated by **Ing. Markéta Andreides** (Department of Water Technology and Environmental Engineering, FET).

Researchers' Night 2021

The **Researchers' Night** was once again held physically in September. The topic of the 2021 edition was TIME. 897 visitors once again returned to the corridors, auditoriums and laboratories of UCT Prague in Dejvice, where they could attend 3 guided tours with photocorners (The Past, The Present and The Future), 4 creative workshops, 5 speed checkpoints for children and 10 thematic spots. The online programme included a chemical fairy tale, an announced competition, 3 videos on topics related to water and 7 infographics. The online programme remained on the Researchers' Night website until the end of the year. A total of 120 scientists and a tried-and-tested team of organizers from UCT Prague were involved in the preparation of the event, which was financed from own resources and from a MEYS grant from the Centralized Development Programme for Public Higher Education Institutions.

Presentation of outcomes of creative activity of UCT Prague experts in the media

Experts from UCT Prague are often invited by the media to present popular scientific contributions, comments, expert advice; they are invited to discussions and popular scientific programmes.

In February, **iROZHLAS** informed about UCT Prague scientists who developed equipment that disinfects face masks using the so-called corona discharge, a type of electric discharge. Czech scientists use it to create the so-called cold atmospheric plasma. The portable device that they developed for disinfection of face masks looks like an angular box, 30 cm high with 4 electrodes. Above the electrodes is a grid where you can place a face mask, shut the lid, press the button and wait for one hour. Corona discharges start to appear on the electrodes thanks to which excited particles of oxygen, ozone etc. are created around the electrodes and break the coronavirus particles on the face mask. According to **doc. Ing. Vladimír Scholtz, Ph.D.** (Department of Physics and Measurements, FCE), the equipment has an almost 100% success rate. What is important is that the face masks are not damaged during the process. Scientists at UCT Prague together with a team from the St. Anna Children's Cancer Institute in Vienna received a grant from the Austrian grant agency FWF and the Czech Science Foundation. The plan is to use the money for further development of the device so that it can disinfect also other tools. In theory, the device can already be used to disinfect masks at home. Doc. Scholtz provided the parameters of the plasma generator as open source. This means that anyone can download the documents, 3D print the device, buy electrodes and power supply and build the device at home.

Ing. Jan Pivoňka, Ph.D. (Department of Food Preservation, FFBT) was invited to **Business Speak**, a partner programme of the weekly *Ekonom* to talk about food sustainability and organic food. The terms of food sustainability and organic food are often confused. The truth is that organic food is a subset of the food sustainability concept. Although sustainability, and primarily its more precise definition and scope, are as yet a little vague, organic food has strict requirements. *"It is a segment of food that has been around for quite a long time now and there are strict conditions under which organic food can be produced. For instance, the use of plant protection products and veterinary products is restricted,"* Jan Pivoňka explains. On the other hand, also food that is not organic can be sustainable. All food and its impact must be perceived throughout the whole chain. It must be noted that a more responsible approach results in a higher price of organic food – when food is grown less intensively or without chemical products that can protect it from pests, growing such food is more complicated and the food is more expensive. Since the European Union wants to pay more attention to this segment and

support organic quality food on its EU markets, it can be expected that the difference in price will not be paid by the consumers, but possibly by the EU in the form of agriculture subsidies or tax exemptions.

A **ČTK Protex round table with experts from the Association of Building Entrepreneurs of the Czech Republic** was held in September. **Prof. Ing. Milan Pospíšil, CSc.**, Vice-Rector for Strategies and Development, UCT Prague, was among the participants. The round table agreed that circular economy and sustainability in the building industry are a must. And although they are presented as orders "from above", primarily from Brussels, they are logical pillars of any meaningful business not only in the building sector. However, these concepts have their limits. The building industry is energy and environmentally extremely demanding and currently it is also facing increasing prices and a lack of availability of raw and building materials. Representatives of entrepreneurs in the building industry agreed that sustainability in the building industry will be hard to achieve for many reasons. At the same time, everyone welcomes the efforts to reduce the environmental burden and increase environmental responsibility of the building industry; however, the necessary solutions and technologies are still missing. *"On behalf of universities, I can promise that we will fully cooperate and try and accommodate the needs. We have to work hand in hand with the industry so that we don't focus on purely academic solutions, but come up with something practical,"* Prof. Pospíšil promised.

5 Developing capacities for strategic management of higher education institutions

Strengthening strategic management at UCT Prague (MEYS SP2021+: 5B)

UCT Prague in university rankings

For the second time in a row, UCT Prague defended its second place among Czech universities in the prestigious **QS World University Rankings 2022** published in June. UCT Prague placed in the 373–376 range among universities around the world. The excellent result in the QS World University Rankings 2022 was most influenced by UCT Prague's small faculty-student ratio. Individual support for education and the inherent involvement of students in the research process even earned UCT Prague 26th place in the world and first in the Czech Republic. *"The third success in a row is, of course, a nice outcome of all the staff and students of our university. We strive to build a supportive and fair environment, where everyone*

can participate in scientific activities. But I understand that the ranking is just a number. It is more important that we work on ourselves and continue to improve," Pavel Matějka, UCT Prague Rector, commented on the published results. The international environment of the university, with a high number of students (by Czech standards) from abroad in recent years, contributed to the good ranking. The university has also recently attracted international academics. However, probably due to the pandemic situation, these indicators have decreased year-over-year. In the overall result, this means that UCT Prague is ranked 342nd in this criterion, a decline from previous year.

Before Christmas, the **U-Multirank** international ranking of universities included UCT Prague in its *Winter Calendar* for the Czech Republic. U-Multirank is not a typical ranking; it does not publish a numbered list of the best universities and it does mark one university as the best.

U-Multirank is created by a consortium that includes Dutch and German universities and it evaluates universities based on dozens of criteria in 5 categories. In 2021, UCT Prague received the best ranking in 11 criteria, which makes it the best university among other evaluated Czech universities. UCT Prague received top marks in research (specialized publications, collaboration with industry and the private sector) and student mobility, among other things. U-Multirank evaluated 13 universities in the Czech Republic in 2021. However, not all data is available for all of them, so it is not possible to make a comparison of all criteria.

Support to cooperation and sharing of experience among universities and the development of capacities for strategic management at the national level (MEYS SP2021+: 5C)

Professor Pospíšil elected chair of the Board of Universities

In February, **Prof. Ing. Milan Pospíšil, CSc.**, Vice-Rector for Strategies and Development, UCT Prague, was re-elected for a second term as **chair of the Council of Higher Education Institutions**. Statutorily, the Council of Higher Education Institutions is a representative body of higher education institutions. It is primarily concerned with the development, funding, legal regulation, activity, organization and management of universities and all fundamental matters related to the development, activity and interests of universities and teachers, students and employees, delivering opinions and recommendations to the Ministry of Education, Youth and Sports and other bodies and institutions.

Strengthening strategic management of human resources at UCT Prague (MEYS SP2021+: 5D)

President appoints new professors at UCT Prague

In May and December, President of the Czech Republic, Miloš Zeman, appointed 6 new male professors and 1 new female professor at UCT Prague. **Prof. RNDr. Martin Pumera, Ph.D.** (Department of Inorganic Chemistry, FCT) was appointed professor in the field of inorganic chemistry, **Prof. Ing. Vladimír Kočí, Ph.D.** (Department of Environmental Chemistry, FET) was appointed professor in the field of chemistry and environmental technology, **Prof. Ing. Jan Bartáček, Ph.D.** (Department of Water Technology and Environmental Engineering, FET) was appointed professor in the field of chemistry and environmental technology. **Prof. Dr. Ing. Michaela Rumlová** (Department of Biotechnology, FFBT) was appointed professor in the field of biotechnology, **Prof. Ing. Ondřej Uhlík, Ph.D.** (Department of Biochemistry and Microbiology, FFBT) was appointed professor in the field of microbiology, **Prof. Mgr. Daniel Svozil, Ph.D.** (Department of Informatics and Chemistry, FCT) was appointed professor in the field of biochemistry and **Prof. Ing. Petr Kočí, Ph.D.** (Department of Chemical Engineering, FCE) was appointed professor in the field of chemical engineering.

UCT has 4 new emeritus professors

In a short ceremony held in June, Prof. Pavel Matějka, Rector of UCT Prague, handed over appointment letters to **four emeritus professors – Prof. RNDr. Vladimír Jirků, DrSc.**, **Prof. Ing. Pavel Kadlec, DrSc.**, **Prof. Ing. Jan Páca, DrSc.**, and **Prof. Ing. Mojmír Rychter**, who have significantly contributed to the development of FFBT in the last 50 years. Present at the ceremony was also Dean of the Faculty of Food and Biochemical Technology, Prof. Jan Masák. The emeritus professor is an honorary title given by the Rector based on a proposal of the faculty; emeritus professors can carry out own creative and expert activity and participate in the development of creative skills and expert competencies of students and junior researchers, and can represent UCT Prague.

Emil Votoček Medal and Rector's Awards

In September, Pavel Matějka, UCT Prague Rector, presented **Emil Votoček Medals** at an assistant professor and PhD graduation ceremony at the Bethlehem Chapel. The Medal is given by the UCT Prague Rector to notable personalities who have

contributed by their expert or public activity to the development of chemistry and other fields taught at UCT Prague, or to the development of cooperation with UCT Prague in the field of education, research and development. This prestigious award was given to **Prof. Ing. Tomáš Ruml, CSc.** (Department of Biochemistry and Microbiology, FFBT), **doc. Ing. Jan Macák, CSc.** (Department of Power Engineering, FET) and **Prof. Ing. Stanislav Labík, CSc.** (Department of Physical Chemistry, FCE).

During the opening ceremony of Festa Academica, in which the UCT Prague Orchestra also participated, on the occasion of the anniversary of 17 November 1989, Pavel Matějka, UCT Prague Rector, presented an **Extraordinary Rector's Award** to **Hana and Dalimil Dvořák** for their long-lasting support to free research of junior researchers and students in the field of chemistry. The UCT Prague Orchestra played at the ceremony.

Hana and Dalibor Dvořák had the courage to step outside their field of work as scientists and teachers and become philanthropists who support education of children and young people and free research in the field of chemistry. After supporting People in Need and the Via Foundation that supports community life in the Czech Republic, they decided in 2013 to establish own Experientia Foundation to support young chemists after they receive their PhD degree.

In December, during the Advent concert at the Bethlehem Chapel, Rector Matějka presented the **Emil Votoček Medal** to **Prof. Ing. Jiří Brožek, CSc.** (Department of Polymers, FCT) and the Rector's Awards to other employees. The **Rector's Award for extraordinary pedagogical activity** at UCT Prague was given to **doc. RNDr. Ing. Hana Scholleová, Ph.D.** (Department of Economics and Management) and **Ing. Ondřej Kundrát, Ph.D.** (Department of Organic Chemistry, FCT). The **Rector's Award for extraordinary results in research and successful promotion of science** was given to **Prof. RNDr. Bc. Petr Slavíček, Ph.D.** (Department of Physical Chemistry, FCE). The **Rector's Award for extraordinary contribution to the development of UCT Prague in the field of concept and strategy** was given to **Ing. Iva Algerová** (Department of Strategic Planning). The **Rector's Award for extraordinary promotion of UCT Prague in sports** was given to athletes representing the Czech Republic at the Olympic Games in Tokyo, **Bc. Jiří Šimánek** (FCT) and **Bc. Jan Cincibuch** (FCE).

6 Reducing administrative burden of university employees so that they are able to fully dedicate themselves to their mission

Support to the development of professional apparatuses providing support services for academics and the operation of the university (MEYS SP2021+: 6C)

Project Centre

The Project Centre was established at the start of the year as an independent organizational unit (department) reporting to the Vice-Rector for Research and Development. Faculty project specialists were hired from outside the university, who are gradually integrated within the university so that the Project Centre shall provide full methodological, administrative and managerial support to scientists and researchers in the preparation of projects, and ensure follow-up support of projects that receive funding in Czech and international calls during their implementation. In 2021, 4 new employees were hired by the Project Centre and there are still 2 vacancies to be filled. The Project Centre has a broad agenda. Continuous broadening and updating of knowledge and competencies of the employees of the Project Centre is absolutely crucial in order to ensure high-quality services for our scientists.

7 Internationalization

Development of global competencies of students and employees of universities (MEYS SP2021+: I1)

Humboldt Alumni Award

RNDr. Michal Kolář, Ph.D., head of the Laboratory of Biomolecular Dynamics (Department of Physical Chemistry, FCE), received the Humboldt Alumni Award 2021. The award is given by the Alexander von Humboldt Foundation to former scholarship and scientific grant holders for the implementation of innovative community projects. Dr. Kolář received the award for his project supporting the activity of Czexpats in Science, an association that supports Czech scientists abroad. This is the first time the award has been given to someone in the Czech Republic.

"The money from the Humboldt Foundation together with the Foundation's global renown will allow us to organize a series of workshops for scientists in the next three years. The working title of the project is "Sharing Czexpats" and it aims to improve the academic culture in the Czech Republic," explains Dr. Kolář. He understands academic culture as everything that is going on in a research group that is not directly connected to the technical aspects of science, to hard skills. Czexpats in Science was founded in 2018 with the aim to establish contact between Czech scientists abroad and facilitate their communication with the Czech academia.

Creating international environment at universities and promotion abroad (MEYS SP 2021+: I4)

Miroslav Vlček Scholarship

In December 2021, Prague universities from the Study in Prague consortium organized a ceremony where the extraordinary **scholarships of Prof. Miroslav Vlček** were awarded. **Ing. Ashley George** (FCE), an international student at UCT Prague, was among the recipients.

The Miroslav Vlček Scholarship is given to commemorate Professor Miroslav Vlček, a teacher, long-term Vice-Rector for International Relations at CTU in Prague and one of the co-founders of the Study in Prague project. This association, which unites 7 public universities in Prague, was established to increase internationalization of the university environment and since its establishment, it has attracted hundreds of international students to study in Prague.

This award is given to international students who contribute to spreading the good name of Prague universities beyond the scope of their study obligations. In addition to studying and doing research in nanoparticles for drug delivery, Ashley George also collaborates with the Department of International Relations. As a student ambassador, she communicates with study applicants, helps organize PR events and participates in the integration of incoming students.

Strengthening strategic management of internationalization (MEYS SP2021+: I5)

New international Erasmus+ projects

Project teams at the Department of Economics and Management were among the recipients of support from the autumn call of the **Erasmus+ Strategic Partnership in secondary school**

education focused primarily on "Innovative Approaches in the Digital Era". In the next 2 years, UCT Prague, together with partner universities in Portugal, Finland, Lithuania, Croatia, Hungary and the Netherlands, will solve international projects. **Doc. Ing. Jan Vlachý, Ph.D.** is the coordinator of the grant called *Virtual Visiting Professors* and **PhDr. Monika Hřebačková** is the co-recipient of the grant called *Collaborative Digital Storytelling for Sustainable Change*. The value of the two grants combined exceeds EUR 460,000.

Investment activities

Development Plan of UCT Prague

The **Development Plan of UCT Prague** complements and specifies the long-term strategic plan of the university in the field of construction and investment development of UCT Prague in the next 10 to 20 years. In line with the Plan, the renovation of parts of Building B facing Zikova Street was completed in 2021.

Consortium of developers acquired land at Vítězné Square from UCT Prague

In November, the sale of the land owned by UCT Prague in the western part of Vítězné Square, Prague 6, to a consortium of developers – Penta Real Estate, Kaprain Group and Sekyra Group – was completed. The land with a total area of 20,122 m^2 located in the so-called 4th quadrant of Vítězné Square between Evropská Street and Jugoslávských partyzánů Street was sold for over CZK 1 billion. UCT Prague does not have enough space, which hinders further international scientific cooperation. In line with UCT Prague's long-term strategy, the money obtained from the sale of this part of land plots will be used to build a new building with modern teaching spaces and facilities for students and academics. The building will be built on the remaining land owned by UCT Prague on Vítězné Square. *"Part of UCT's long-term vision and mission is support to gifted students and training of top experts who will help solve fundamental problems of our society, such as drought, new sources of energy and food and drug safety. We need to build a new university building to be able to continue to play this role in the future,"* says Pavel Matějka, UCT Prague Rector.

IT infrastructure

Communications

In 2021, work on the development of telephone services continued. Due to the pandemic situation, UCT Prague agreed on a new method of tariffs with the provider to reduce the costs, since it was discovered that many employees have their incoming phone calls redirected to their private mobile phones when they work from home. Configuration changes have been made in cooperation with the provider so that the incoming phone number is displayed on the mobile where the phone call is forwarded instead of the number of the forwarded extension.

Thanks to a user interface that is part of the supplied solution and machine learning, the configuration of the solution was modified in 2021 in order to optimize its performance and maximize the level of security.

Modernization and extension of network infrastructure

Thanks to the activity of the Student's Chamber of the Academic Senate, a survey of how satisfied users are with Wi-Fi signal coverage at UCT Prague in the Dejvice Campus was carried out. The students prepared a set of questions and a satisfaction questionnaire that was electronically distributed to students and employees. The results were assessed and handed over to the Computer Centre. After they were analyzed, the access points (APs) were roconfigured where possible. Unfortunately, it turned out that in most places APs must be added, which will be done in the next years as part of the regular renewal of HW equipment.

At the beginning of 2021, all networking hardware was configured, tested and put into pilot operation. After one month of operation when it was tuned and some configuration was modified, it was put into full operation. Due to certain restrictions of the internet services provided by CESNET (it cannot be used for commercial purposes), UCT Prague opened a tender and consequently put into operation internet connection from a commercial provider. This will allow us to connect commercial entities working in university premises. This provider can also be used to connect persons staying at the dormitories in Prague 4 – Kunratice during holidays when it is used a hostel. Until today this was not possible.

For the Computer Centre to be able to better identify reported problems, two devices with advanced functions for diagnostics of wired and wireless network infrastructure were acquired for CZK 300,000, incl. VAT.

Cybersecurity

In 2021, further technical and organizational measures were taken in order to enhance cybersecurity and to comply with obligations stipulated in Act No. 181/2014 Coll., on Cyber Security and change of related acts through Act No. 104/2017 Coll., effective from 1 July 2017, and Act No. 205/2017 Coll., effective from 1 August 2017 (including further amendments to this Act as on this day – amendment by Act No. 183/2017 Coll., Act No. 35/2018 Coll., Act No. 111/2019 Coll. and currently the latest amendment by Act No. 12/2020 Coll.). This is a long-term process the aim of which is a full compliance with all legal requirements. In 2021, a basic risk analysis and a detailed analysis of management that is used in everyday operation of UCT information systems and is its key component from the point of view of cybersecurity were carried out in cooperation with a supplier for CZK 1m, incl. VAT.

In connection with the above mentioned requirements, the Security Information and Event Management (SIEM) module was extended on the IBM Qradar platform. The cost was CZK 2,750,000, incl. VAT.

Renewal of HW – data centres

Following an initial analysis by an external company it was discovered that the existing **data centre in Technopark Kralupy** did not use the allocated space efficiently and that its capacity could be increased. Therefore, it was modernized, including data racks, electrical wires, cables, data components, etc. All devices were purchased with a 5-year support service for CZK 3m, incl. VAT.

A **micro data centre (MDC)** was acquired for the **University Centre Litvínov UCT – FME CTU – ORLEN Unipetrol** in Záluží near Litvínov. The location of active elements and other HW there was completely unsatisfactory as it was overheated in summer. Building a full-scale data centre would be very costly and the premises are not owned by UCT Prague. After a comprehensive market research, an ideal solution was found – a MDC. The necessary preparatory work connected to power supply and air-conditioning for the MDC was done and after piloting and removing of minor flaws, it was put into permanent operation. Putting the MDC in Litvínov into operation cost CZK 1,550,000, incl. VAT.

As part of the regular replacement of servers at the end of their life, 9 servers with different configurations were purchased by UCT Prague in 2021 for CZK 2,800,000, incl. VAT. After installation, configuration and confidence testing, they were put into standard operation.

Modernization of operation of VDI desktop virtualization

In 2021, a significant renewal of HW and SW equipment for virtual desktop platforms was carried out due to the individual components in the network reaching the end of their life and their insufficient performance failing to ensure the operation of the infrastructure. During the COVID-19 pandemic it was found out that this environment would allow students to fully use SW equipment necessary for learning. The main reason is the licence requirements of individual SW suppliers who give students big discounts but limit the use of the given SW to HW equipment owned by UCT Prague. Virtual desktop infrastructure (VDI) means virtual desktops with installed SW can be created that students can use. Thanks to the client-server technology, they connect to this SW through VPN (authorization and authentication) from any place with internet connection. Modernization of HW and SW equipment for VDI desktop virtualization was purchased with investment money of UCT Prague through above threshold procurement in the amount of CZK 21m, incl. VAT.

B. UCT Prague 2021 in numbers

Faculties	4
University institutes	1
Submitted applications to study	4,646
Students in accredited SPs (number of studies)	3,836
Number of PhD students (number of studies)	835
Accredited study programmes	230
Joint/Double/Multiple Degree study programmes	25
International students (number of studies)	779
Academic failure in the 1st year of studies	36.8%
Participants in lifelong learning (incl. U3V)	1,234
Graduates (number of studies)	1,040
Number of experts from application sector participating in instruction	271
Students who receive scholarships (according to purpose of scholarship)	7,609
Number of employees (average converted numbers)	1,263.4
Academic and research workers – foreigners (average converted numbers)	101.4
Newly appointed associate professors (of which women)	12 (4)
Newly appointed professors (of which women)	7 (1)
Student mobility (number of stays)	91
Number of submitted applications for accommodation	1,848
Number of beds in dormitories	1,650
Number of (co)organized conferences with international attendance	17
Number of contract research contracts, consultations and advisory	4,208
Number of solved international R&D projects	31

C. Text appendix to the Annual Report on Activities of UCT Prague

1) Basic information about university

a) Full name of university, commonly used abbreviations, seat (incl. address) of university and all constituent parts (faculties, institutes, departments and branches)

The University of Chemistry and Technology, Prague uses the official abbreviation "UCT Prague". This abbreviation is used also in this Annual Report.

The official address of UCT Prague is Technická 5/1905, 166 28 Prague 6.

UCT Prague is divided into faculties, which are its constituent parts. The basic organizational units of faculties are departments; the dean's offices are the administrative departments. In addition, a university department that carries out scientific, research, development, innovation and other activity – Technopark Kralupy UCT Prague – is also a constituent part of UCT Prague.

All faculties and the majority of other constituent parts of UCT Prague are located in three buildings in Prague-Dejvice, at Technická 3/1903, Technická 5/1905 and Studentská 6/2031. The UCT Prague dormitories are located at K Verneráku 950 (Volha Hall) and Chemická 952 (Sázava Hall), 148 28 Praha 4 – Kunratice. The Department of Economics and Management UCT Prague and some other departments are located at Jankovcova 1114/23 in Prague 7. Technopark Kralupy UCT Prague is headquartered at Náměstí G. Karse 7, 278 01 Kralupy nad Vltavou (effective from 1 October 2019, the municipal council of the city of Kralupy nad Vltavou decided to rename the street originally called Žižkova).

UCT Prague implements bachelor's, follow-up master's and doctoral study programmes at the University Centre UCT – FME CTU – ORLEN Unipetrol in the Chempark compound in Litvínov-Záluží (V Záluží 1, Litvínov 1, 436 01 Litvínov).

b) Organizational scheme of university

The internal organizational structure, rules of organization and management at UCT Prague are further specified and regulated in the internal standard of UCT Prague No. A/N/961/5/2019 "Organizační řád VŠCHT Praha" (Rules of Procedure of UCT Prague), effective from 14 November 2019, amended effective from 12 May 2021 as internal standard No. A/N/961/2/2021.

The organizational structure of the faculties of UCT Prague is described in Diagram No. 1.

The organizational structure of the Rector's Offices, university workplaces, university departments and the Administration of University Facilities is described in Diagram No. 2.

Diagram No. 1:

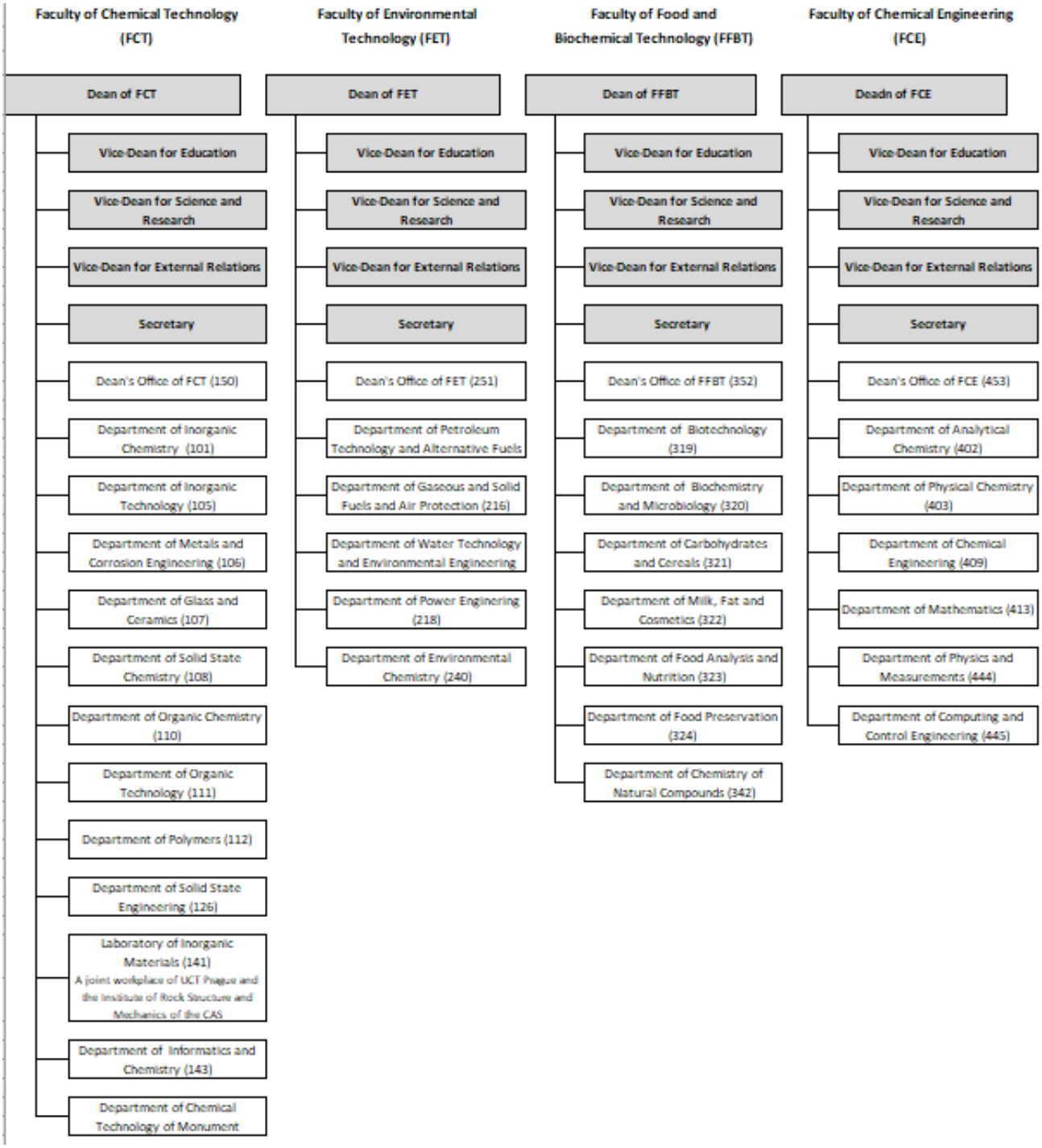
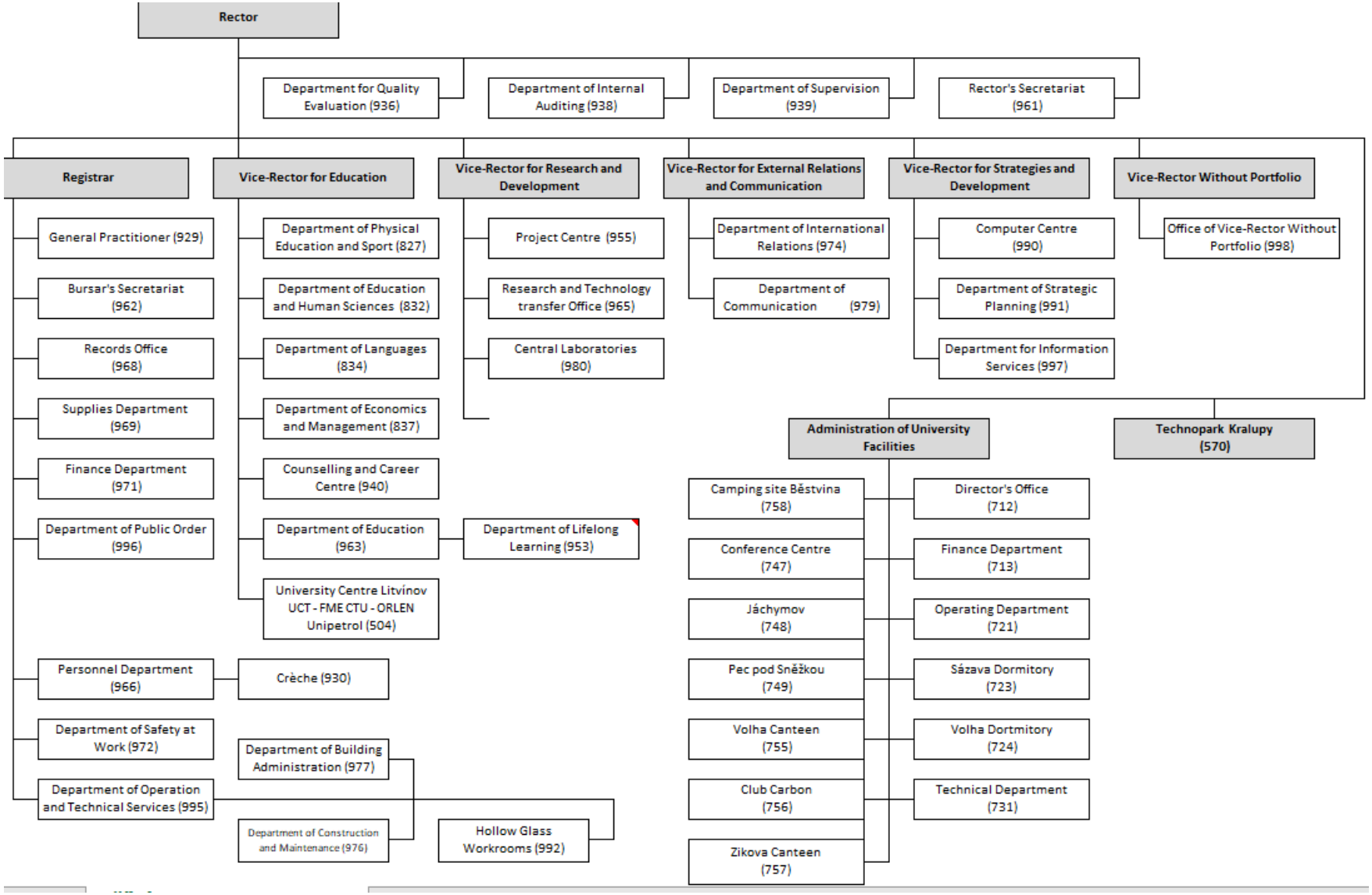

Faculty of Chemical Technology (FCT)
Dean of FCT
Vice-Dean for Education
Vice-Dean for Science and Research
Vice-Dean for External Relations
Secretary
Dean's Office of FCT (150)
Department of Inorganic Chemistry (101)
Department of Inorganic Technology (105)
Department of Metals and Corrosion Engineering (106)
Department of Glass and Ceramics (107)
Department of Solid State Chemistry (108)
Department of Organic Chemistry (110)
Department of Organic Technology (111)
Department of Polymers (112)
Department of Solid State Engineering (126)
Laboratory of Inorganic Materials (141)
A joint workplace of UCT Prague and the Institute of Rock Structure and Mechanics of the CAS
Department of Informatics and Chemistry (143)
Department of Chemical Technology of Monument
Faculty of Environmental Technology (FET)
Dean of FET
Vice-Dean for Education
Vice-Dean for Science and Research
Vice-Dean for External Relations
Secretary
Dean's Office of FET (251)
Department of Petroleum Technology and Alternative Fuels
Department of Gaseous and Solid Fuels and Air Protection (216)
Department of Water Technology and Environmental Engineering
Department of Power Enginering (218)
Department of Environmental Chemistry (240)
Faculty of Food and Biochemical Technology (FFBT)
Dean of FFBT
Vice-Dean for Education
Vice-Dean for Science and Research
Vice-Dean for External Relations
Secretary
Dean's Office of FFBT (352)
Department of Biotechnology (319)
Department of Biochemistry and Microbiology (320)
Department of Carbohydrates and Cereals (321)
Department of Milk, Fat and Cosmetics (322)
Department of Food Analysis and Nutrition (323)
Department of Food Preservation (324)
Department of Chemistry of Natural Compounds (342)
Faculty of Chemical Engineering (FCE)
Deadn of FCE
Vice-Dean for Education
Vice-Dean for Science and Research
Vice-Dean for External Relations
Secretary
Dean's Office of FCE (453)
Department of Analytical Chemistry (402)
Department of Physical Chemistry (403)
Department of Chemical Engineering (409)
Department of Mathematics (413)
Department of Physics and Measurements (444)
Department of Computing and Control Engineering (445)

Diagram No. 2:


Rector
Department for Quality Evaluation (936)
Department of Internal Auditing (938)
Department of Supervision (939)
Rector's Secretariat (961)
Registrar
Vice-Rector for Education
Vice-Rector for Research and Development
Vice-Rector for External Relations and Communication
Vice-Rector for Strategies and Development
Vice-Rector Without Portfolio
General Practitioner (929)
Bursar's Secretariat (962)
Records Office (968)
Supplies Department (969)
Finance Department (971)
Department of Public Order (996)
Personnel Department (966)
Department of Safety at Work (972)
Department of Operation and Technical Services (995)
Department of Physical Education and Sport (827)
Department of Education and Human Sciences (832)
Department of Languages (834)
Department of Economics and Management (837)
Counselling and Career Centre (940)
Department of Education (963)
University Centre Litvínov UCT - FME CTU - ORLEN Unipetrol (504)
Crèche (930)
Department of Building Administration (977)
Department of Construction and Maintenance (976)
Project Centre (955)
Research and Technology transfer Office (965)
Central Laboratories (980)
Department of Lifelong Learning (953)
Hollow Glass Workrooms (992)
Department of International Relations (974)
Department of Communication (979)
Computer Centre (990)
Department of Strategic Planning (991)
Department for Information Services (997)
Office of Vice-Rector Without Portfolio (998)
Administration of University Facilities
Technopark Kralupy (570)
Camping site Běstvina (758)
Conference Centre (747)
Jáchymov (748)
Pec pod Sněžkou (749)
Volha Canteen (755)
Club Carbon (756)
Zikova Canteen (757)
Director's Office (712)
Finance Department (713)
Operating Department (721)
Sázava Dormitory (723)
Volha Dortmitory (724)
Technical Department (731)

University research and educational workplaces of UCT Prague in 2021:

- A workplace of the National Competence Centre of Mechatronics and Smart Technologies for Mechanical Engineering at UCT Prague
- A workplace of the National Competence Centre of Personalized Medicine – Diagnostics and Therapy at UCT Prague
- A workplace of the National Competence Centre of Biorafination as Circular Technology at UCT Prague
- Centre of “Single-Site” Catalysis
- Department for the History of the Chemical Industry and Applied Chemistry
- BIOMEDREG
- Metrology and Testing Laboratory
- Prague University Analytical Centre
- Forensic Laboratory of Biologically Active Substances

University departments at UCT Prague in 2021

Technopark Kralupy of the University of Chemistry and Technology, Prague

The structure of the management of UCT Prague is described in Diagram No. 3:

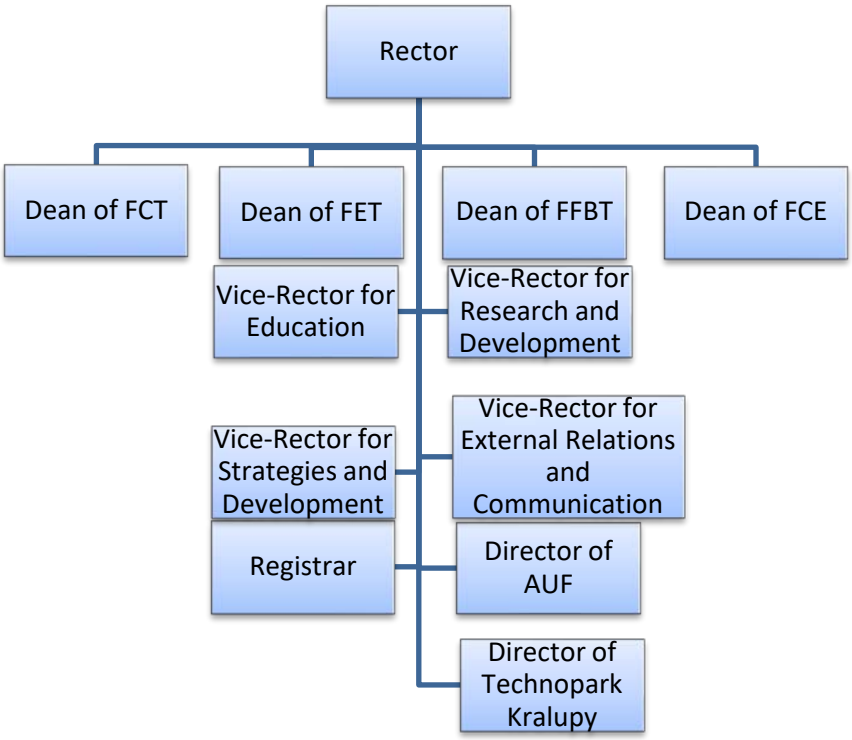
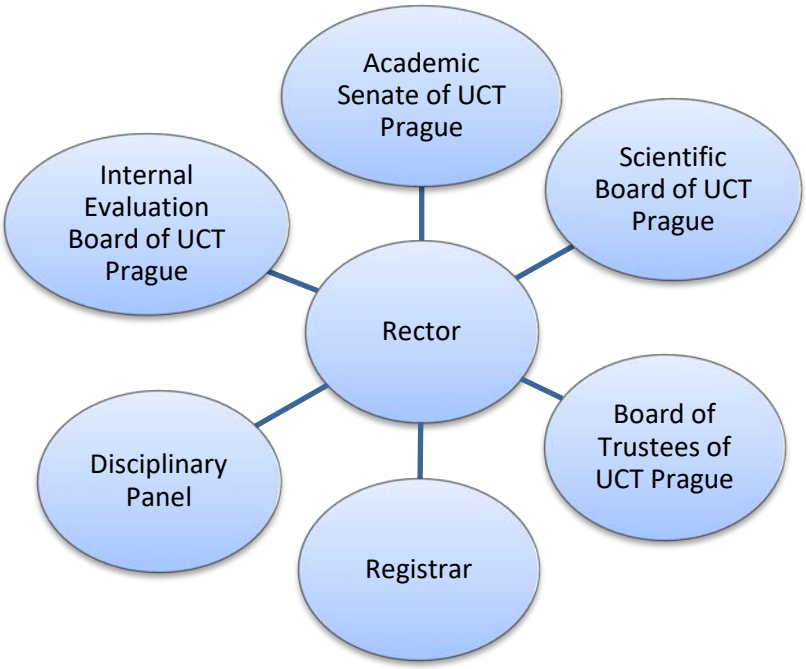


Diagram No. 4: Bodies of UCT Prague



UCT Prague management

Prof. Dr. RNDr. Pavel Matějka	Rector
doc. Dr. Ing. Milan Jahoda	Vice-Rector for Education
Prof. Dr. Ing. Dalibor Vojtěch	Vice-Rector for Research and Development
Prof. Ing. Milan Pospíšil, CSc.	Vice-Rector for Strategies and Development
Prof. Ing. Pavel Kotrba, Ph.D.	Vice-Rector for External Relations and Communication (until 5 October 2021)
Prof. Dr. Ing. Michaela Rumlová	Vice-Rector for External Relations and Communication (since 6 October 2021)
Ing. Ivana Chválná	Registrar

Administration of University Facilities, UCT Prague

Ing. Stanislav Starý	Director of AUF UCT Prague

Management of Technopark Kralupy UCT Prague

Ing. Milan Petrák	Director of Technopark Kralupy UCT Prague

Management of the Faculty of Chemical Technology

Prof. Dr. Ing. Karel Bouzek	Dean
doc. Ing. Petr Zámostný, Ph.D.	Vice-Dean for Education
Prof. Ing. Aleš Helebrant, CSc.	Vice-Dean for Science and Research
doc. Ing. Pavel Novák, Ph.D.	Vice-Dean for External Relations
Ing. Monika Šáchová	Secretary

Management of the Faculty of Environmental Technology

Prof. Ing. Vladimír Kočí, Ph.D., MBA	Dean
doc. Ing. Vladimír Sýkora, CSc.	Vice-Dean for Education
doc. Ing. Tomáš Hlinčík, Ph.D.	Vice-Dean for Science and Research
Ing. Marek Šír, Ph.D.	Vice-Dean for External Relations
Ing. Kateřina Šritrová	Secretary

Management of the Faculty of Food and Biochemical Technology

Prof. Ing. Jan Masák, CSc.	Dean
Prof. Ing. Karel Melzoch, CSc.	Vice-Dean for Education
doc. Ing. Pavel Ulbrich, Ph.D.	Vice-Dean for Science and Research
Ing. Monika Tomaniová, Ph.D.	Vice-Dean for External Relations
Ing. Blanka Morchová	Secretary

Management of the Faculty of Chemical Engineering

Prof. Ing. Michal Přibyl, Ph.D.	Dean
doc. Ing. Karel Řehák, CSc.	Vice-Dean for Education
doc. RNDr. Ing. Pavel Řezanka, Ph.D.	Vice-Dean for Science and Research
doc. Ing. Pavel Hrnčiřík, Ph.D.	Vice-Dean for External Relations
Ing. Kamila Klaudisová, Ph.D.	Secretary

Heads of departments at UCT Prague

Prof. Dr. Ing. David Sedmidubský	Department of Inorganic Chemistry (101)
Prof. Dr. Ing. Karel Bouzek	Department of Inorganic Technology (105)
Prof. Dr. Ing. Dalibor Vojtěch	Department of Metals and Corrosion Engineering (106)
Prof. Ing. Aleš Helebrant, CSc.	Department of Glass and Ceramics (107)

Prof. Ing. František Kovanda, CSc.	Department of Solid State Chemistry (108)
Prof. Ing. Radek Cibulka, Ph.D.	Department of Organic Chemistry (110)
Prof. Ing. Petr Zámostný, Ph.D.	Department of Organic Technology (111)
Prof. Ing. Jiří Brožek, CSc.	Department of Polymers (112), until 31 August 2021
doc. Ing. Jan Merna, Ph.D.	Department of Polymers (112), since 1 September 2021
Prof. Ing. Václav Švorčík, DrSc.	Department of Solid State Engineering (126)
doc. Ing. Jaroslav Kloužek, CSc.	Laboratory of Inorganic Materials (141)
doc. Mgr. Daniel Svozil, Ph.D.	Department of Informatics and Chemistry (143)
doc. Dr. Ing. Michal Ďurovič	Department of Chemical Technology of Monument Conservation (148)
doc. Ing. Pavel Šimáček, Ph.D.	Department of Petroleum Technology and Alternative Fuels (215)
doc. Ing. Karel Ciahotný, CSc.	Department of Gaseous and Solid Fuels and Air Protection (216)
Prof. Ing. Pavel Jeníček, CSc.	Department of Water Technology and Environmental Engineering (217)
doc. Ing. Jan Macák, CSc.	Department of Power Engineering (218)
doc. Dr. Ing. Martin Kubal	Department of Environmental Chemistry (240)
Prof. Ing. Jan Masák, CSc.	Department of Biotechnology (319)
Prof. Ing. Tomáš Ruml, CSc.	Department of Biochemistry and Microbiology (320)
Prof. Ing. Ondřej Uhlík, Ph.D.	Department of Biochemistry and Microbiology (320), since 1 Sep 2020
doc. Ing. Marcela Sluková, Ph.D.	Department of Carbohydrates and Cereals (321
Prof. Ing. Vladimír Filip, CSc.	Department of Milk, Fat and Cosmetics (322), until 31 August 2021
doc. Ing. Jiří Štětina, CSc.	Department of Milk, Fat and Cosmetics (322), since 1 September 2021
Prof. Ing. Jana Pulkrabová, Ph.D.	Department of Food Analysis and Nutrition (323)

doc. Ing. Aleš Rajchl, Ph.D.	Department of Food Preservation (324)
Prof. Dr. RNDr. Oldřich Lapčík	Department of Chemistry of Natural Compounds (342)
Prof. Ing. Vladimír Setnička, Ph.D.	Department of Analytical Chemistry (402)
Prof. RNDr. Bc. Petr Slavíček, Ph.D.	Department of Physical Chemistry (403)
Prof. Ing. František Štěpánek, Ph.D.	Department of Chemical Engineering (409)
doc. Ing. Jan Mareš, Ph.D.	Department of Mathematics (413)
Mgr. Martin Mašek	Department of Physical Education and Sport (827)
RNDr. Petr Holzhauser, Ph.D.	Department of Education and Human Sciences (832)
PhDr. Ivana Dolejšová	Department of Languages (834)
doc. Ing. Lenka Švecová, Ph.D.	Department of Economics and Management (837) – designated head

Heads of university workplaces at UCT Prague

Ing. Pavel Härtel	Computer Centre (990)
Prof. Ing. Richard Hrabal, CSc.	Central Laboratories (980)
Ing. Eva Dibuzsová, Ph.D.	Centre for Information Services (997)
Ing. Zdeňka Pelešková	University Centre Litvínov UCT – FME CTU – ORLEN Unipetrol (504)
(N/A)	Centre for "Single-Site" Catalysis (535)
Prof. Ing. Jana Hajšlová, CSc.	Metrology and Testing Laboratory (558)
Prof. Dr. Ing. Jan Poustka	Prague University Analytical Centre (559)
(N/A)	Forensic Laboratory of Biologically Active Substances (560)

c) Composition of the Scientific Board, the Board of Trustees, the Academic Senate and other bodies in accordance with internal regulations of university (with changes made in 2021)

Academic Senate of UCT Prague

Academic workers

All 16 seats of academic workers (4 from each of the 4 faculties) were taken in a regular election in 2019 – the mandates are from 1 February 2020 until 31 January 2023.

Prof. Ing. Radek Cibulka, Ph.D.	Chair
doc. Ing. Petra Lovecká, Ph.D.	Vice-Chair
RNDr. Pavel Pokorný, Ph.D.	Vice-Chair
doc. Ing. Milan Kouřil, Ph.D.	
doc. Ing. Kateřina Rubešová, Ph.D.	
doc. Ing. Miloslav Lhotka, Ph.D.	
Ing. Daniel Maxa, Ph.D.	
Prof. Ing. Jan Bartáček, Ph.D.	
Ing. Marek Staf, Ph.D.	
doc. Ing. Luděk Jelínek, Ph.D.	
doc. Ing. Petra Lipovová, Ph.D.	
doc. Ing. Helena Čížková, Ph.D.	
doc. Ing. Milena Stránská, Ph.D.	
doc. Ing. Jan Mareš, Ph.D.	
Prof. Ing. Karel Friess, Ph.D.	
Prof. Dr. Ing. Tomáš Moucha	

Students' Chamber

(The term in office of students elected to AS UCT is two years; each faculty is represented by 2 students.)

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Bc. Vojtěch Domín	
Ing. Matěj Hušek	
Ing. Matěj Malý	
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Scientific Board of UCT Prague

The composition of the Scientific Board of UCT Prague was approved by the Academic Senate of UCT Prague on 17 February 2020.

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Prof. Dr. Ing. Michaela Rumlová	Vice-Rector for External Relations and Communication (since 6 October 2021, member of SC since 27 October 2021)
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d) Representation of university in representation of universities

Czech Rectors Conference

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Council of Higher Education Institutions

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Prof. Ing. Radek Cibulka, Ph.D.	
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doc. Ing. Michael Pohořelý, Ph.D.	

Ing. Přemysl Fitl, Ph.D.

Prof. Ing. Aleš Helebrant, CSc.

Students' Chamber of CHEI

Ing. Miroslav Hala (delegate)

Ing. Mariana Hanková (alternate member)

e) Changes to internal regulations registered by the Ministry of Education, Youth and Sports in 2021

V In 2021, the following changes were made to internal regulations of UCT Prague:

- On 21 April 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Jednací řád Akademického senátu Vysoké školy chemicko-technologické v Praze* (Rules of Procedure of the Academic Senate of the University of Chemistry and Technology, Prague).
- On 21 April 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Statute of Technopark Kralupy nad Vltavou of the University of Chemistry and Technology, Prague.*
- On 5 May 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Conditions of Admission to Study and Admission Proceedings at the University of Chemistry and Technology, Prague*.
- On 6 August 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Jednací řád rady pro vnitřní hodnocení Vysoké školy chemicko-technologické v Praze* (Rules of Procedure of the Internal Evaluation Board of the University of Chemistry and Technology, Prague).
- On 6 August 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Volební řád Akademického senátu Vysoké škole chemicko-technologické v Praze* (Electoral Code of the Academic Senate of the University of Chemistry and Technology, Prague).
- On 6 August 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Study and Examination Rules of the University of Chemistry and Technology, Prague.*
- On 6 August 2021 the Ministry of Education, Youth and Sports registered the internal regulation *Statute of the University of Chemistry and Technology, Prague.*

2) Study programmes, organization of studies and educational activity

In 2021 (i.e. in the summer semester of the 2020/21 academic year and in the winter semester of the 2021/22 academic year), UCT Prague implemented 230 study programmes at its faculties; this high number is due to the concurrence of old and new accredited study programmes.

In 2021, two new study programmes were approved. A follow-up master's study programme "Bioanalytical Laboratory Diagnostics in Healthcare" for which the Ministry of Health was the approving body passed the internal evaluation process at UCT Prague. A doctoral study programme "Conservation Sciences in the Care of Tangible Cultural Heritage" that will be implemented together with the Faculty of Restoration of the University of Pardubice was accredited by the National Accreditation Bureau (fields of education Chemistry, Physics and Art).

The number of accredited study programmes and study programmes in a foreign language categorized under the relevant constituent part is given in Tables 2.1 and 2.2 in the Tables section.

In the 2021 calendar year, 93 studies were implemented in 25 study programmes implemented in cooperation with partner universities abroad. They were 2 Erasmus Mundus joint study programmes (follow-up master's study programmes IMETE and EM3E-4SW), 7 double degree follow-up master's study programmes (with 5 partner universities from France, Italy and Switzerland) and 16 double degree doctoral study programmes. An overview of study programmes implemented with universities abroad in 2021 is given in Table 2.3 in the Tables section.

An overview of study programmes implemented in cooperation with public research institutions in the Czech Republic, mainly with the Czech Academy of Sciences, is given in Table 2.4 in the Tables section.

UCT Prague gives its students an opportunity to study in double degree doctoral study programmes based on individual agreements (*cotutelle*) concluded in accordance with the Directive "Postup při uzavírání smlouvy o doktorském studiu v programu pod dvojím vedením uskutečňovaném ve spolupráci se zahraniční univerzitou" (Rules for Concluding Agreements on Double Degree Doctoral Study Programmes Implemented in Cooperation with Universities Abroad). In 2021, 8 students (3 incoming and 5 outgoing) were enrolled in a double degree doctoral study programme at UCT Prague based on inter-university agreements, usually supported by a scholarship provided by the government of the partner party/country, primarily France and Russia.

In 2021 a study programme in Conservation – Restoration of Cultural Heritage Objects – Historical Artwork was implemented at the Faculty of Chemical Technology UCT Prague in cooperation with secondary vocational schools. More detail is given in Table 2.5 in the Tables section.

UCT Prague did not implement any accredited study programmes devised to be implemented outside of Prague. Classes in bachelor's and master's study programmes accredited at individual faculties were taught at the detached department, the University Centre Litvínov UCT – FME CTU – ORLEN Unipetrol.

Information services for the accredited study programmes at UCT Prague are at an exceptionally high level with regards to their content and range. This is thanks to the modern and highly

functional design of the Centre for Information Services UCT Prague (CIS), which provides information services to students, academics, scientists and other employees of UCT Prague.

The Central Library of UCT Prague, which, together with 33 libraries of departments, is part of CIS, is fully integrated with the library of the Institute of Organic Chemistry and Biochemistry of the CAS (IOCB) and the National Library of Technology (NTK) to form a joint ChemTK library. It is the largest chemistry library in the Czech Republic that provides its users – students, academics, scientists and other employees of UCT Prague – with a combination of a specialized chemistry library and a large multi-disciplinary library that has more than 300,000 volumes out of a total of ca 1.2 million volumes available without preordering. In addition to standard library and information services (such as the acquisition of new books, book loans, inter-library and international loan services, reprographic services, internet access, access to electronic information sources and more), the library offers an easy access to more than 1,150 study spaces, including two quiet zones; night study rooms; easy booking of team study rooms; full Wi-Fi coverage; self-service book lending, returning and photocopying; a unified access to the integrated catalogue of all three institutions; and last but not least, a possibility to study 24/7. Students and employees of UCT Prague have priority for lending books from the UCT Prague collection and they can register at NTK for free with a valid student or employee ID.

The basic statistics regarding the library collections in the possession of UCT Prague are given in Table 12.2 in the Tables section.

a) Number of accredited study programmes described by the methodology of study results in accordance with the Framework of Higher Education Qualifications of the Czech Republic and the number of newly described study programmes compared to 2020

UCT Prague does not have any study programmes described by the methodology of study results in accordance with the Framework of Higher Education Qualifications of the Czech Republic.

b) Participation of the application sector in the creation and implementation of study programmes

UCT Prague is aware of the importance of creating study programmes in accordance with the requirements of the application sector so that an optimal professional graduate profile is achieved. This follows from the traditional focus of UCT Prague on the industry and the application sector and the long-term collaboration of the academic workers at UCT Prague with industrial enterprises in the field of science and research, development, patent protection and technology transfer. Both the existing study programmes and programmes that are prepared for accreditation are discussed with the relevant experts in the application sector. UCT Prague has a continuous constructive dialogue with the application sector to be able to take into account their requirements in individual subjects and in the resulting study programmes.

Feedback is also provided by outside experts who work on state final examination commissions in bachelor's and master's study programmes and are present at the final defence of doctoral

theses. Trips, work placements and internships of UCT students in industrial enterprises and joint searching for topics of bachelor, master and doctoral theses is an inseparable and time-tested part of this collaboration. A number of employees of cooperating companies have welcomed the opportunity to act as consultants for these theses.

The following table gives an overview of the main partners from the application sector that cooperate with UCT Prague on the preparation of master and doctoral theses and provide support to students in DSP:

Partners of master and PhD theses				
Preciosa	Spolana	Robert Bosch	Zentiva Group	Plzeňský Prazdroj
ORLEN Unipetrol	Dekonta	Chemoprojekt	Synthos Kralupy	ČEZ Energetické produkty
Nofima	Delimax	Synthomer	Mlýn Perner Svijany	Centrum výzkumu Řez
Škoda Auto	ABITEC	Johnson Matthey	Pharmafit Czech	Vodní zdroje Ekomonitor
UJP Praha	AGC	Lafarge Cement	Vitave Tech	Výzkumný ústav pro hnědé uhlí
Biomedica	ELLA-CS	Lasak	Polabské mlékárny	Pražské vodovody a kanalizace
Net4Gas	EMCO	Lasselsberger	Budějovický Budvar	Mondelez CR Biscuit Production
ProSpon	Kablo	Laufen CZ	Aroma Praha	Spyder Institute Praha
SYNPO	Findus	Lavaris	Eaton Elektrotechnika	KMOTR -Masna Kroměříž
Technistone	Veolia	Lyckeby-Culinar	CASALE PROJECT	Královský pivovar Krušovice
CEPS	GEOMET	Fruta Podivín	EPS biotechnology	Heineken Česká republika
Contipro	Glazura	MemBrain	Biocont Laboratory	Teva Czech Industries
Crystalex	Medin	MERO ČR	SQS vláknová optika	Boehringer Ingelheim
CRYTUR	ÚJV Řež	Chemcomex	EcoFuel Laboratories	CAN Superconductors
BEAS	Mitas	Oxalis	New Water Group s.r.o.	ASIO TECH, spol. s r.o.
BC-MCHZ Ostrava	Temperatior s.r.o.	Austin Detonátor, s.r.o.	MSD	Severočeské vodovody a kanalizace, a.s.

A number of leading experts from the application sector are involved in specialization classes at individual departments at UCT Prague, in particular in follow-up master's study programmes. The number of involved experts from the application sector participating in teaching and practical classes in accredited study programmes according to individual constituent parts of UCT Prague is given in Table 8.2 in the Tables section.

Students in the majority of accredited study programmes at UCT Prague must take a 1-month practical training. However, many students in master's study programmes themselves arrange individual traineeships in production or research organizations during summer (a paid traineeship) as well as during the academic year. The number of study programmes that require a practical training of at least 1 month is given in Table 8.3 in the Tables section.

c) Other educational activities implemented in 2021

UCT Prague has long carried out educational activities focused on students and teachers of primary and secondary schools with the aim to promote and show chemistry as an important and attractive part of technical and natural sciences.

The 35th edition of the Summer School for secondary school teachers of chemistry, physics and mathematics was held at the end of August 2021. The preparation of the Summer School and the event itself were more complicated than usual due to the COVID-19 situation. All COVID-19 measures in place were observed during the preparation and the event. The measures were fully complied with and no problems occurred. Top academic workers at UCT Prague were responsible for the specialized part; the organizational work was done by an employee of the LLL section. The Summer School was held at the Balling Hall of the National Library of Technology. The Summer School was attended by 102 secondary school teachers from across the Czech Republic. Also the best secondary school students were invited – the number of attending students was 138. As part of the "Chemistry for Life" programme, new findings in chemistry and biochemistry were presented to the participants with the aim to broaden their knowledge that is not part of the standard secondary school classes. Through presenting the latest knowledge and findings, the event aims to encourage teachers to motivate students to study at chemistry and technology universities. A total of 14 specialized lectures followed by Q&A sessions were given by top academic workers at UCT Prague. The second day offered a block of laboratory tasks for teachers. A total of 20 types of laboratory tasks were prepared. Also a programme was prepared for students in laboratories that was divided into 4 blocks with 90 laboratory tasks. The event was organized in a similar way like in the previous years – students were divided into 4 groups; each group attended a different block on the given day.

Same as every year, all attendants of the Summer School received USB flash drives with lectures of the UCT Prague academic workers; teachers were also given a book and a course book (*Robot 100: Sto rozumů* [Robot 100: One Hundred Reasons], editor Jitka Čejková, and *Anorganické názvosloví v kostce* [Inorganic Nomenclature in a Nutshell], authors David Sedmidubský and Ondřej Jankovský).

UCT Prague is a guarantor of the Chemistry Olympiad in the Czech Republic. UCT Prague takes care of the organization and provides tasks for the competition and, in cooperation with the host organization, it holds the central round of the Olympiad. In 2021, due to the pandemic measures, UCT Prague was responsible for all rounds of the Olympiad (school, district, regional, central). The rounds (from the school round up) were done in a Moodle module that was prepared for this purpose and is accessible from the official website of the Chemistry Olympiad and can be used in future years, if necessary. More participants than usual were able to proceed to the central round since the number was not limited by the number of people who can work in laboratories. 61 grammar school students participated in the event in category A and 5 secondary technical school students participated in category E. The closing and the announcement of the

results of the central round were held online in the Gather Town application. The organization of the event was supervised by the Department of Education and Human Sciences.

At the start of July 2021, a two-week camp for high-school students who were successful in the regional rounds of the Chemistry Olympiad (Cho) and the Biology Olympiad (BiO) was held in Běstvina. The summer camp in Běstvina is traditionally organized by UCT Prague in cooperation with the Faculty of Science of Charles University and the Central Commission of the Biology Olympiad. The camp's aim is to support repeated participation of students in future years of ChO and BiO, prepare and motivate students to study chemistry and related sciences. In 2021, the camp was attended by 88 chemists and 44 biologists. 38 teachers gave lectures. The camp was not significantly affected by the pandemic situation; only the common areas had to be cleaned and sanitized more often due to stricter public health measures. Also the number of teachers from outside was limited. UCT Prague employees act as the main guarantors of the specialized programme, expert teachers and lecturers. The event is supervised by the Department of Education and Human Sciences.

The 8th edition of the specialized camp Běstvinka for primary school students and students in lower secondary education was organized in cooperation with the Faculty of Science of Charles University. The camp's long-term aim is to search for and encourage interest in the youngest students with a talent for natural sciences. The two-week camp for the participants in the Chemistry Olympiad in category D and in lower years of the Biology Olympiad combines expert lectures, laboratory and field practical courses, leisure time activities and sports with trips to the surrounding nature. The programme of the camp was affected by the epidemic situation. The number of leisure time activities focused on socializing increased and participants were offered consultations with a psychologist. 42 chemists and 81 biologists attended Běstvinka 2021. The 106-hour programme was prepared by 30 teachers and instructors. Mostly employees of UCT Prague and FS CU were guarantors of the expert and leisure time programme.

Due to the COVID-19 pandemic, the 53rd edition of the International Chemistry Olympiad (53rd IChO) could not take place in the traditional in-person form in Japan. After positive experience in the previous year, the event was held online as the 53rd IChO 2021 Japan Remote IChO. The Olympiad was attended by 312 participants from 79 countries and 6 countries participated as observers. The competition only had a theoretical part consisting of nine tasks focused on selected topics in inorganic, organic, physical, analytical and quantum chemistry. Same as the year before, the OlyExams program was used for work with the tasks. The program was originally developed for Biology Olympiads and then modified for IChO. The wording of the tasks was changed in the program, the tasks were translated to national languages and after the end of the competition, tasks were corrected in it. ZOOM and Telegram were used for

communication. Online teleconferences (jury meetings) were attended by all participating countries – tasks were finalized in the first meeting, in the second meeting organizational issues were discussed, such as the election of the Steering Committee, future host countries were introduced and proposals for changes in the Statutes were presented. The opening and announcement of the results was held online in a VR program.

In order to simulate to a maximum extent the international atmosphere of the Olympiad, we joined forces with our colleagues from Slovakia and organized the Olympiad in the UCT hostel in Jáchymov. In their free time, students could do activities together, visit the uranium mines, take a trip to Karlovy Vary and go to the spa.

The traditional workshop where the best students are prepared and selected was held in June in the UCT Prague conference centre. 4 students were selected from among the 16 applicants.

Despite the difficult conditions during the preparation phase and the absence of the practical part in which Czech students usually excel, our team achieved great results and won one gold, one silver and two bronze medals.

In 2021, UCT Prague provided basic laboratory practical lessons for students of secondary schools that do not have their own laboratories. This year, 7 secondary schools from Prague and outside of Prague participated in the practical classes. New collaboration was set up with 4 schools whose students started attending our laboratory classes. A total of 24 4-lesson laboratory classes were taught for 363 students. Due to mandatory closure of schools in the summer term, laboratory classes could not be held as usual during the examination period. However, we were able to organize laboratory classes in September and some classes were held on other dates. Laboratory classes were held under strict safety measures (respiratory protection equipment, continuous ventilation, sanitizing of hands and borrowed protective equipment, restrictions on mixing of different groups of students, measuring of body temperature). Also teachers from cooperating schools were asked to get actively involved in contact tracing, which in the end, thanks to the implemented measures, was not necessary. No transmission of COVID-19 was recorded. Although the time that could be spent in laboratories was limited, we were able to perform pilot testing of revamped laboratory tasks and the results of the testing were included in the relevant manuals.

Amgen | Teach
PODPORUJEME VÝUKU VĚDY

This long-running activity focused on further education of chemistry teachers at primary schools and secondary schools is very popular. In 2021, it was financed from the contributions for the institutional programme for public higher education institutions and the European programme AMGEN TEACH. However, after it had been extended repeatedly, the project ended on 31 June 2021. Consequently, only 2 seminars were organized: the Autumn School for Chemistry Teachers 2020, which could not be held as planned due to the pandemic, and 1 online seminar on research-oriented teaching (ROT).

In January 2021, a one-hour seminar was held with the support from AmgenTeach, where teachers taught teachers – 2 experienced teachers of research-oriented courses shared their

experience and tips with colleagues. More than 220 primary and secondary school teachers from across the Czech Republic participated in the seminar. The seminar can be viewed at https://www.youtube.com/watch?v=vY9mFCBPHuc&t=27s.

The 6th year of the exceptionally popular Autumn School for Chemistry Teachers, which was planned for October 2020, was rescheduled for the spring of 2021 due to the pandemic measures. In the end, it was held in June 2021 in the attractive premises of the Běstvina UCT Prague campsite. 30 teachers from across the Czech Republic out of 50 who originally signed up for the School were able to attend for various time and health reasons (reopening of schools, Maturita leaving examinations, COVID-19 pandemic).

Since the Autumn School for Chemistry Teachers is very popular with teachers, we continued in the project also without the participation of AmgenTeach and organized the 7th edition on the usual date. The event was partly financed from the contributions for the institutional plan for higher education institutions and partly from collected registration fees. The Autumn School was held in October 2021 in teaching laboratories of the Department of Education and Human Sciences. All government COVID-19 measures were adhered to and the School was attended by 54 primary and secondary school teachers from the Czech Republic.

The Department of Education and Human Sciences UCT Prague co-organized the educational project "A Wonderful Day with Chemistry" organized by the Unipetrol Foundation. The form of the project was changed due to the epidemic situation. Instead of in-person chemistry shows, thematic one-hour educational videoblocks that popularize chemistry through chemical experiments and explanations were offered. The videos prepared by the Department of Education and Human Sciences were made accessible to schools and the general public on social media.

Languague courses for employees and PhD students organized by the Department of Languages were supported from the contribution for the implementation of the institutional plan in 2021. A total of 29 language courses (semester courses and intensive courses) were organized for staff and were attended by 185 employees. A total of 27 courses (intensive English courses focused on professional and academic language and semester courses) were organized for PhD students; 182 participants were supported. The courses included English, German, Spanish, French and Russian.

The updated offer of lifelong learning courses at UCT Prague is published on the UCT Prague website (http://cv.vscht.cz/). Same as last year, LLL courses were affected by the epidemic situation caused by SARS-CoV-2. A number of courses could not be taught in 2021. Some courses began as in-person, but continued online.

A course "Certified Digital Procurement Manager" and a programme "Selected Chapters from Economics and Management" intended for PhD students and students in the last year of non-economic study programmes were piloted. The courses included "Decision-Making for Technical

Managers", "Lean Startup at UCT Prague", "English for Specific Business Purposes" and "Media Communication for Managers". The pilot run proved the quality and usefulness of the courses for the target group. Based on the positive feedback, the courses will be offered also in the future.

As part of a series of open lectures for UCT employees, lectures on many different interesting areas studied by the academic workers at the Department of Economics and Management were given, for example on taxation of natural persons, entrepreneurship and the choice of legal form, marketing, finance and investment.

Cooperation with Study & Work, s.r.o. continued for the eighth year in a row, in the framework of which Czech and specialized subjects (mathematics and chemistry) are taught to students from Vietnam.

Traditional seminars for teachers of primary and secondary schools have been organized by UCT Prague for 8 years. Last year, two seminars called "Chemistry around Us" were delivered online. The first seminar was attended by 28 participants and was focused on beer brewing. The second seminar was attended by 31 participants and was focused on the environment and sustainability.

In the last year, UCT Prague organized a number of courses aimed at enhancing the academic preparedness of future students. They included practical courses for secondary school students that were attended by 44 students in the last year. The majority of them were laboratory courses.

Another branch is lifelong learning – preparatory courses. These are preparatory courses for self-paying students who study in selected courses and are preparing for studies in regular bachelor's or follow-up master's study programmes. In 2021, they were attended by 16 students.

An overview of lifelong learning courses in bachelor's and master's study programmes in 2021 where U3V (University of the Third Age) data is not included are given in the following table:

Name of LLL course	**No. of lessons**	**No. of re-runs**	**No. of participants**
Angličtina pro pedagogické pracovníky (English for Teachers)	151	5	30
Doplňující didaktické studium anglického jazyka (Complementary Didactic Studies of English)	160	4	45
Přípravný program ke studiu cizinců ekonomicko-manažerských oborů (Preparatory Course for Foreigners Studying in Managerial Courses)	1,122	5	74
Rozšiřující studium anglického jazyka (Extended Course in English)	399	3	18
Vybrané kapitoly z ekonomiky a management (Selected Chapters from Economics and Management)	132	6	74
Certifikovaný manažer (Certified Manager)	48	1	19

Otevřené přednášky ústavu ekonomiky a management (Open lectures of the Department of Economics and Management)	16	8	296
English Study Preparatory Course	666	2	8
Základy statistické analýzy ekonomických dat (Basics of Statistical Analysis of Economic Data)	12	1	23
Kurz pivovarství (Brewing)	72	7	19
Kurz Pivovarské a sladařské technologie – Plzeňský Prazdroj (Brewing and Malting Technologies – Plzeňský Prazdroj)	43	1	19
Brewing Academia II – Pivovar Šariš	36	4	13
Kurz přípravy vietnamských student (Preparatory course for Vietnamese students)	700	1	16
Oběhové hospodářství III. (Circular Economy III)	48	1	22
Seminář pro učitele ZŠ, SŠ pedagogy (Seminar for Primary and Secondary School Teachers)	16	2	59
Podzimní škola (Autumn School)	84	2	32
Letní škola chemie pro středoškolské učitele a student (Summer School for secondary school teachers and students)	174	1	240
Sustainability Management	56	6	21
Dlouhodobá praxe (Long-term practical courses)	80	1	44
Samoplátci (Self-payers)	840	1	16
Total	**4,855**	**62**	**1,088**

In 2021, courses for senior citizens were organized by all UCT Prague faculties as part of the University of the Third Age. The courses cost CZK 300 per semester. After each semester, the course is concluded with a written examination. Information about LLL courses and the updated offer of University of the Third Age courses is published on the UCT Prague website (https://cv.vscht.cz/u3v). An overview of the implemented University of the Third Age courses, including the number of participants, is given in the following table:

Faculty	No. of participants	No. of semesters	No. of lessons in winter/summer semester	Name
FET	14	4	56/0	Ochrana životního prostředí (Environmental Protection)
FFBT	46	4	9/9	Potraviny a výživa (Food and Nutrition)
FCE	56	4	84/84	Život s počítačem (Life with a Computer)
FCT	16	4	22/20	Chemie a svět kolem nás (Chemistry and the World around Us)
FCT	14	4	39/36	S počítačem přátelsky od A do Z (Being Friends with the Computer A to Z)

In the programmes (Environmental Protection, Food and Nutrition, Life with a Computer, Chemistry and the Living Organism, and Being Friends with the Computer A to Z), qualified information from areas taught at UCT Prague was passed on to the participants with the aim to enhance the mental development of senior citizens. Unfortunately, the courses were negatively affected by the coronavirus situation.

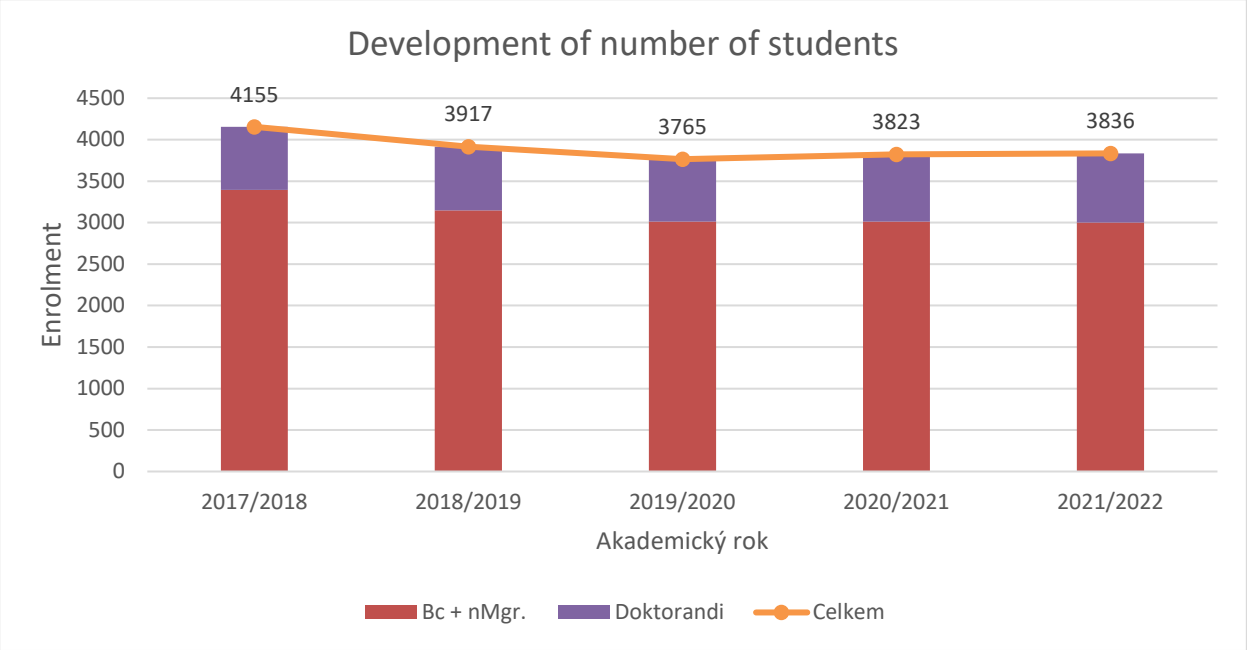
A total of 67 LLL courses were held in 2021, most of which were short based on the students' demand. An overview of lifelong learning courses organized by UCT Prague employees divided into groups in accordance with the ISCED-F broad fields and according to the length of the course is given in Table 2.6 in the Tables section. The statistics of the number of LLL courses participants is given in Table 2.7 in the Tables section.

3) Students

Students in accredited study programmes

The statistics of number of students in accredited study programmes provided by UCT Prague in the year 2021, broken down according to the ISCED-F classification and divided by the type and form of studies, is provided in Table 3.1 in the Tables section. In the year 2021, of the total enrolment at UCT, 20% were foreigners and 57 % were female students. As for students of doctoral study programmes, the share of foreign students was 24% and of female students almost 48% of the total enrolment, which represents a 1% year-to-year increase in the number of foreign students and a 2% year-to-year decrease in female students.

The following graph documents the development of number of students (number of enrolments) in bachelor and master follow-up study programmes and in doctoral programmes at UCT Prague in the last 5 years.



Enrolment of self-paying students studying in the year 2021 at UCT Prague: the count is provided in Table 3.2 in the Tables section. Their number has increased by 96 % as compared to the previous year.

a) Measures implemented to reduce dropout rate

The details of dropout rates in the first year of study of all levels and forms of study at UCT Prague are provided in Table of the table attachment.

The first year of bachelor´s degree studies is the one with the highest dropout rate. At that time more than 50 % of students terminate their studies. The reason behind this rather high dropout rate in the first year of bachelor´s degree studies is low level of preparedness of secondary school graduates for university studies. In addition, the results for the year 2021 are strongly affected by distance learning, which a high number of students considered inconvenient.

Within the project "Zkvalitnění vzdělávání - priorita VŠCHT Praha" ("Improving the quality of education – UCT Prague´s priority) (OP RRD - project No. CZ.02.2.69/0.0/0.0/16_015/0002374) there were prepared preparatory e-learning courses "Připrav se" ("Get ready") for applicants for study at UC|T Prague – courses of general and inorganic chemistry, chemical calculations and mathematics.

As there are no entrance exams for bachelor´s degree studies at our school, except for the Business Studies programmes, the aim of the courses is to set up such knowledge in the mentioned subjects which is supposed to have been achieved within secondary school studies. As a result, students have the opportunity to actively prepare themselves for their university studies, or to fill in the gaps in their knowledge at the start of their studies if they find out that their knowledge does not meet the expectations. All three courses are publicly available on the following websites:

General and inorganic chemistry: https://e-learning.vscht.cz/course/view.php?id=388

Chemical calculations: https://e-learning.vscht.cz/course/view.php?id=608

Mathematics: https://e-learning.vscht.cz/course/view.php?id=391

For students of the first year of bachelor´s degree studies, there were prepared within the project the courses "Přidej" (Move up a gear); students can make full use of them, including online and face-to-face consultations. Within the courses, students can fill in any knowledge gaps and strengthen their study skills in mathematics and chemistry.

For students of the first year of bachelor´s degree studies, there was also prepared a practical course "Laboratorní technika" (Laboratory equipment), which describes the basic laboratory equipment and operations, thereby making the start of obligatory laboratory work easier for students who have never worked in a chemistry laboratory.

To reduce dropout rate, UCT Prague has taken in long term adequate measures. Students who show true interest in their studies are allowed to optimise their study plans, to spread one school year over a longer period of time.

To calculate the basic doctoral scholarship, UCT Prague applies a motivation system based on timely completion of the required study obligations. Students of DSP (doctoral study programmes) whose records showed the status "active student" in the period of disruption of full-time studies caused by measures fighting against the COVID-10 pandemic (in the year 2021 such disruption lasted till 26 February 2021) were granted an extension of the deadlines for completion of the individual study obligations. The maximum of such extension was one year.

a) Final decisions on stating invalidity of a state exam or any part or of a defence of a dissertation thesis under Section 47c, Section 47f and Section 47g, or on stating invalidity of the appointment of an associate professor under Section 74a, Section 74d and Section 74e of the Act No. 111/1998 Coll.

In the year 2021 there were issued no final decisions on stating invalidity of a state doctoral exam or of a defence of a dissertation thesis or of any appointment of an associate professor.

b) Measures to limit prolongation of studies

The maximum duration of study in individual bachelor´s or master´s degree programme is defined in compliance with the internal regulations of UCT| Prague and the current accreditation. It is in the interest of UCT Prague to avoid unjustified prolongation of study by students. Within the offered counselling services, students can consult experienced specialists of the Counselling and Career Centre of UCT Prague about their individual situations affecting their studies. Consequently, in cooperation with faculties and guarantors of the study programmes, the optimal setup of study is sought in order to minimise the risk of prolonged studies.

Studies in DSP are carried out always according to an individual study plan (ISP), which lists the required courses and defines the deadlines for passing the respective exams. Reduced risk of prolongation of studies is supported by regular checks on compliance with the ISP performed in the first phase by the student´s supervisor, subsequently in the form of annual assessment based on a standardized activity report, which the DSP student has to submit at the end of each year of study. Such annual assessment is checked and commented on by the supervisor, then checked by the Vice-Dean for Science and Research and by the PhD Study Board. In order to streamline and accelerate the reaction to cases of students when there is a risk of prolongation of studies due to inactivity, the supervisor has the option to use a button in the electronic application for doctoral studies administration to indicate such situation in a timely manner. UCT Prague has a motivational system of calculation of the basic doctoral scholarship based on timely completion of the individual study obligations. It may be assumed that this motivational system of calculation of the basic doctoral scholarship introduced in the year 2018 will signigicantly contribute to the reduction of postponing of study obligations, i.e. it will reduce cases when in higher years of study such deferments negatively effect the performance of creative activity in completing the tasks of dissertation theses, which in turn results in prpolongation of doctoral studies. Nevertheless, taking into account the disruption of studies caused by the measures adopted to fight the SARS-CoV-2 pandemic which affected also the year 2021, UCT Prague decided, in order to reduce the risk of failure of students affected by the disruption of studies, to allow the completion of study obligations to be postponed, however no longer than by one year.

c) Own/specific scholarship programmes

The number of students receiving scholarships and the average amounts of the individual types of scholarships broken down by their purpose are summarized in Table 3.4 in the Tables section. In the year 2020, scholarships were paid out to the total of 7,609 students; this number includes some students several times if they recive scholarships for different purposes. As every year, the most frequent scholarships were those for accommodation, followed by scholarships for research, development and innovation activity, for excellent study results and for supporting students of doctoral study programmes.

Own scholarship programmes of UCT Prague

In compliance with *"Pravidla pro poskytování účelové odpory na specifický vysokoškolský výzkum*" (Rules for providing targeted support for specific university research), in 2021 UCT Prague distributed the subsidy of CZK 48.9m. The funds are allocated through an internal grant competition, which is organized by the Internal Grant Agency of UCT Prague (IGA).

The internal grant competition includes two basic types of internal scientific grants: student scientific projects of disciplinary type, and student scientific projects of research type. The awarded grants, fully paid from funds for specific university research, serve as a motivational tool for expansion of scientific, research and development activities of students of full-time doctoral and master´s degree programmes. The scholarships linked to work on internal scientific research grants represent a significant financial support to young researchers whose funding in the form

of doctoral scholarships is totally insufficient in the course of the demanding preparation for scientific work.

Within the internal grant competition there are also awarded grants for pedagogical projects of students and academic workers, which are aimed at supporting pedagogical projects of students of full-time doctoral and master´s degree programmes accredited at the faculties of UCT Prague and of academic workers at UCT Prague and its faculties. In 2021 such projects were funded in the amount of CZK 7 million from the funds for implementation of the Institutional Plan.

The internal grant competition includes also student social projects supporting cultural, social, presentational, educational and sport activities of students of all programmes accredited at UCT Prague and its faculties. Such projects are fully funded from the school´s own budget resources.

In addition to the forms of scholarships stated above, students can apply for support from foundations (or from acquired donations) of faculties or departments of UCT Prague or from joint foundations of the school and partners from the industry (or donations received from the school´s partners).

d) Counselling services provided at UCT Prague

The Counselling and Career Centre of UCT Prague (CCC) fulfils its vision of providing services namely to students of UCT Prague through various types of projects and activities.

In the year 2021 there were recorded 2,800 uses of CCC services (in person or on-line; the count includes also repeated use by clients). Information web sites of CCC were searched 26,000 times. CCC handed out 2,200 copies of information brochures.

- **Development projects** (215 students active in student interest groups; 624 unique participants in the Academy of Competencies)
    - *Systematic care for active students – interest groups and student self-governance* – ensures development of a dynamic community environment, where more ambitious students find opportunities for their first own projects and further development. This activity is a follow-up to the determination of UCT Prague to teach in a practical manner. Activity in the academic senate or student groups is seen as basic practice for aquiring soft skills. In the year 2021 there were established regular meetings of members of interest groups to share ideas and plans of activities.
        - 15 student interest groups (increase by 25% compared to the year 2020), 215 active members (increase by 9% compared to the year 2020)
    - *Academy of Competencies* – provides seminars and lectures teaching the theory of abilities outside the scope of the students´fields of study. They are basically divided in study skills, life skills and job skills. The so-called Survival Kit, focused on basic study skills (effective learning, relaxation and mental hygiene, time management, etc.), is a key series of lectrues aiming at facilitating the student´s transition from secondary school to

university. Other topics of the lectures are, for example, financial literacy or career development.

    - 624 unique participants in lectures, 877 participants in total

  - *Mentoring programme* – creates bond between the student and the mentor with the purpose of mutual enrichment. Mentor positions are performed by professionals from sicence, business, academia, etc. In the year 2021, the project was completely revised and its start in the year 2022 was prepared with a wider offer of mentors in order to attract more undergraduate and postgraduate students.

- **Support projects** (30 students as general tutors, 384 interventions of tutors; 360 registered clients of psychological assistance; 80 registered students with special needs)

  - *Student tutors* – they help first-year students, addressing namely the problems which students prefer to solve with experienced fellow students rather than with an institution´s authority. Tutors provide answers regarding school regulations, studies and important study decisions; in general, they make sure students are well informed. In the year 2021, students could benefit from the assistance provided by 30 trained tutors.

  - *Student group tutors* – senior fellow students are assigned specifically to each student group (more than 60 groups in the year 2021) and they offer direct assistance and intervention in order to increase students´ motivation and improve their study results. After previous year´s successful implementation of tutors for first year students, in 2021 the project was expanded to second-year students as well.

  - *Psychological and study counselling* – forms the basis of counselling services. In addition to the 179 clients receiving long-term care from this counselling office, there were recorded single contacts from 181 clients in the year 2021. The counselling is focused on topics related to mental issues as well as study-related issues. In the year 2021, the topic of isolation due to the COVID-19 pandemic was of significant incidence. Besides direct care, there is also available a database of proven external partners in specialised fields of counselling (psychotherapy, psychiatry, etc.); therefore, the psychologist can direct clients to such experts and monitor further development of the clients´ condition.

  - *Students with special needs* (a detailed description can be found under point f later in this chapter)

  - *Social and legal counselling* (a detailed description can be found under point h later in this chapter)

- **Career support projects** (149 meetings in the career counselling office, 5 career oriented workshops, 130 published job positions, 15,233 visits of web with job opportunities)
  - *Web portal What I Will Be When I Grom Up (Čím budu, až vyrostu)* (detailed description can be found in Chapter 4, point c)

- *Career month What I Will Be (Čím budu)* (detailed description can be found in Chapter 4, point c)
- *Career oriented workshops* – focused on job search, writing a CV and a motivation letter, or building a personal brand; for more information, see the Academy of Competencies
    - 5 workshops, 77 participants
- *Career counselling* – enables students to discuss ideas about their future in the context of the labour market, as well as their plans to aquire the required level of competencies in order to get a first job that would meet their expectations; the students also have the possibility to consult on their CV, motivation letters or job offers they are choosing from.
    - 131 unique students, total of 149 meetings
- *Job opportunities advertising* (more details can be found in Chapter 4, point c)

- **UCT Editing Project (Edice VŠCHT)**

In the year 2021, cooperation with student teams continued in editing booklets containing practical information; this included also the update of the texts *Freshman´s Guide to UCT Prague* and *Housing and Canteens*. Other available booklets are *Graduation* and *Mentoring*. The main aspect of these publicationsn is a unique user design with high communication efficiency towards the target group. All booklets are available in Czech and English, both printed and on-line.

CCC offers to prepare similar booklets for other departments as well; in the year 2021 collaboration started with the Department of International Relations to produce the booklet *Czech Survival Guide* (published in 2022) for foreign students/workers coming to UCT Prague.

In the year 2021 we distributed 2,200 prints of information booklets to students.

- **Project of national cooperation of counselling and career centres at higher education institutions**

In autumn 2021 the **CCC of UCT Prague hosted the fourth national meeting of counselling and career centres.** In the days of 7 – 9 September, the school premises hosted 33 representatives of 18 Czech public higher education institutions. The main discussed topics were: links among all counselling and developments services, close cooperation with representatives of students, update of the document *Strategie KC 2030 (CC Strategy 2030)*. Within the framework of the meeting, CCC initiated signing of a memorandum on cooperation between the Student Chamber of the Council of Higher Education Institutions and AVŠP (the Association of Higher Education Institutions Counsellors); at the same time, the platform for cooperation among career centres was integrated into AVŠP (CCC as a founding member of the Career Counselling working group).

In the year 2021 **the CCC was awarded the National Award for Career Counselling** declared by the National Pedagogical Institute of the Czech Republic and Euroguidance for contribution to cooperation among career centres of higher education institutions.

e) Possibility to study for students with special needs

Technical chemistry with high share of experimental work, which is always linked with certain safety hazards, significantly reduces the study options for students with special needs within the whole spectrum of the offered programmes because of safety at work and health protection. This is reflected in Conditions of Admission to Study and Admission Proceedings at UCT Prague. All students with special needs who are not in direct discrepancy with the mentioned above are taken care of by the Counselling and Career Centre UCT Prague.

The system of providing care to students is continuously being optimised. The priority is to provide assistance and compensation to students with specific needs without reducing the level of study requirements, to inform applicants with special needs about the study options, as well as to improve the methodology for teaching students with special needs and to increase awareness among teachers.

Students, teachers and workers are offered psychological consultancy services and training; CCC is ready to help any student who may request it, as well as to ensure appropriate compensation aids.

In the year 2021 there were recorded 80 students with special needs, who are provided with permanent support in their study and whose study conditions are being continuously amended according to their handicap. There were 35 newly registered students with special needs in the year 2021. Compared to the year 2020, this is an increase by 33%.

In the year 2021, a subsidy was received from MEYS, compensating the increased cost of study of the reported students with special needs.

f) Support for and work with gifted students and applicants

UCT Prague supports study of gifted students not only by creating special study programmes for this group of students but also by creating opportunities for developing study skills and knowledge of secondary school students in special short-term courses, events and seminars.

Broad concept based and focused on general chemistry, the Chemistry bachelor´s degree programme is offered to gifted students who have acquired good knowledge of chemistry and the related disciplines of natural sciences already at secondary school and who wish to further develop their knowledge.

An extraordinary scholarship for study results is designed for first-years of bachelor´s degree programmes. The only criterion for receiving such scholarship is excellent study results. Furthermore, UCT Prague pays a scholarship to first-years who participated in the national round of chemistry, physics or biology Olympiad in the Czech Republic or in the Slovak Republic, or who ranked among the top thirty participants in the KSICHT seminar (Correspondence Seminar Inspired by Chemistry Topics).

Within promotion and support for study of natural sciences, UCT Prague organizes a number of competitions, the Summer School, the Summer Specialized Camp for Gifted Students – participants in international rounds of chemistry or biology Olympiad.

Gifted applicants for study in doctoral degree programmes are offered active participation in national and international scientific projects and the opportunity of outgoing mobilities or accomplishing part of the studies abroad. From the start of their studies, PhD students may apply for additional funding based on an application for a student research project within the internal grant competition, where the most successful projects are approved for funding from the MEYS funds for specific research of higher education institutions. Upon enrolment in the doctoral study, new students can report their study, scientific or publication results from the preceding master´s degree studies in the initial annual assessment and the points for such results, once they have been checked, become the basis for awarding an additional disciplinary grant; in case of a gifted students, such points make the students eligible for a prestigious one year Emil Votoček scholarship, which is awarded to 20 best students of doctoral study programmes with the highest criterion value calculated based on the assessment of results of study, publication and scientific activities.

g) Support for and identification of students with social and economic disadvantages

Students of UCT Prague may ask for an extraordinary single scholarship as means helping them to solve a difficult social situation; this is done by handing in an application form in the Dean´s Office of the respective faculty. In addition, they can use regular counselling services of the CCC. Such services are by their nature adopted also to the needs of students with social and economic disadvantages and to their problems. If necessary, disadvantaged students can borrow a notebook in the Counselling and Career Centre pursuant to the defined rules.

A new social and economic counselling service was launched in autumn 2021. Qualified lawyers are ready to assist with students 'questions and problems in all areas of law, including social security law. The aim is to give students a chance to solve often complicated life situations in a timely manner and in a familiar environment on the university´s grounds.

h) Support for student parents

UCT Prague is a technically oriented university, where the female to male students ratio is constantly increasing in study programmes of all levels. Currently, the average percentage of female students is around 60 %. The age of parents at the birth of the first child is increasing as well.

In order to prevent parentship from being a reason for early termination of studies, namely in case of PhD students, even non-studying parent students who have suspended their studies due to maternal or parental leave are eligible for participating with their projects in the internal grant competition. Funding of the project is conditioned by re-enrolment in full-time doctoral studies at UCT Prague no later than by the start date of the project.

Children of PhD students can be placed in Zkumavka, which is a pre-school facility run by UCT Prague.

UCT Prague continuously expands the offer of e-learning courses, which enables student parents to adjust their studies to family life.

Further care for students

UCT Prague owns and runs the dormitories Sázava and Volha on the campus of residence halls in Prague 4 – Kunratice, with the total capacity of 1,650 beds. Under the same conditions as applied to employees of UCT Prague, students may also use the recreation facilities in Jáchymov and Pec pod Sněžkou throughout the year, and the camp resort Běstvina during the season. UCT Prague continues to ensure (based on a contract with the Prague University of Economics and Business and with Charles University) the operation of the whole site where the residence halls of the universities are located, i.e. in Prague 4 – Kunratice, with the total capacity of approximately 5,500 beds.

In 2021 a school and a commercial Wi-Fi with full connection was put into operation for the students´ use in the Sázava and Volha residence halls and a complete renovation of the Volha boiling room, including measurement and regulation, was finalized in autumn.

UCT Prague owns and operates a canteen located in the Volha residence hall, on the university residence halls grounds in Prague 4 - Kunratice, which provides meals to students of UCT Prague as well as to students of other universities under the same conditions, namely students of the Prague University of Economics and Business, Charles University and the Czech Technical University in Prague.

UCT Prague provides for meals for its employees in the academia canteen in the school´s restaurant in Dejvice.

For students´and employees´ leisure, UCT Prague runs a student club named Carbon and snack bars in the buildings A and B.

More details on accommodation and boarding services of UCT Prague are provided in Table 12.1 in the Tables section.

4) Graduates

The total number of graduates from accredited study programmes at UCT Prague broken down by faculties and other units of the school, under the broadly defined ISCED-F industries by the type of study and the form of study, is provided in Table 4.1 in the Tables section**.**

a) Cooperation and maintaining contact with alumni

The school actively maintains contact with its graduates via the Alumni club.

The number of club members increased by 250 as compared to the year 2020, namely thanks to a successful campaign První inženýrská (First Engineering), where fresh graduates are personally acquainted with the benefits of being a member of the club and are offered a quick and easy registration. UCT continuously maintains active communication with current members, who spread information among their ex school mates with whom they are in contact and those contacts then apply for membership as well.

Alumni are invited to participate in school events and lectures that might be of their interest. In cooperation with the Career and Counselling Centre; they are involved in professional training courses and the mentoring programme. CCC services are available to graduates from UCT Prague as well, free of charge and for 3 years from graduation.

In the year 2021 alumni actively participated in the photo exhibition SVĚT (JE) CHEMIE (THE WORLD IS/OF CHEMISTRY), Hanami, the Open Doors Day in November and other events.

Within the ESF call for higher education institutions of the Research, Development and Education Operational Programme, there is a project running successfully where one of the key activities is focused on development of the Alumni Club activities in the following years. Several newsletters were sent out to the club members, the work on a modern CRM system continued for management and recording of alumni, membership benefits were offered (language courses, soft skills courses), etc.

Information on what´s happening at UCT Prague, activities of the Alumni Club and other interesting news is published regularly on the web sites of the school and of the Alumni Club (http://alumni.vscht.cz/).

a) Employment rate and employability of graduates, measures to increase employability

The rate of unemployment indicates the real situation on the labour market regardless of in which region the graduates seek jobs. UCT Prague ranks among public higher education institutions in the Czech Republic with the highest employment rate of graduates. Graduates from chemical and technological faculties are successful on the labour market and in the recent years they have shown one of the lowest unemployment rates among public higher education institutions. The data for monitoring the unemployment rate of graduates come from e.g. semi-annual statistics of the Labour Office of the Czech Republic broken down by schools and industries. Results of national and international statistical surveys, in which UCT Prague is involved on a regular basis, are another valuable source of information.

The statistics of unemployment rate of graduates from higher education institutions or their faculties serves study applicants as information on placement of graduates on the labour market and such information can be found e.g. also on the web site VysokeSkoly.com (https://www.vysokeskoly.com/uplatneni-absolventu/).

Employment rate and employability of our graduates are key indicators of the quality of preparation of students for the requirements of practice. Employer´s requirements are reflected

in the preparation and adjustments of accredited study programmes. Feedback from representatives of employers and professional associations forms part of regular evaluation of study programmes and serves as impetus for the profile of our graduates to be adjusted as closest as possible to the developing needs of employers on the labour market.

b) Collaboration with the future employers of students

Due to the continuing COVID-19 pandemic in the year 2021, instead of the traditional job opportunities fair "Chem-Ik" there was organized the so-called career month "What I will be". In that framework, online streamed lectures, workshops and panel discussions with representatives of selected companies took place from mid-June till mid-July. Along with that, a new web career portal "What I will be when I grow up" was created (https://cimbudu.vscht.cz/); the portal offers to students a systematic framework for their career considerations, provides education regarding the labour market and answers to many questions covering its various aspects. It also includes an overview of employers in the chemistry and technology industry as well as job opportunities advertisements. The total of 30 employers were involved in the career month, 51 job offers were published and 1,641 unique visitors (1,856 visits in total) viewed the web portal during that period.

CCC also enables companies to publish offers of job positions on the school´s premises, not only in the form of traditional advertisements on the CCC website, leaflets or posters, but also in the form of lectures, discussions or involvement of experts in lessons. Our effort is to build a long-term relationship with companies and we are ready to come up with new opportunities and services in compliance with the development on the labour market and the demand. As the advertisement service means a competitive advantage for the companies involved and provides them with added value, a fee is charged for such service; the profit from this activity is used for further career development of students and for motivating them to study. In the year 2021 130 job offers were posted and 15,233 users visited the web site.

At the Student Scientific Conference students of bachelor´s and master´s degree programmes present the results of their research work; the conference is often attended by representatives of potential employers – sponsors of the conference. The best student works are awarded valuable prizes, often sponsored by industrial partners of UCT Prague, e.g. the companies Zentiva, Moser, Škoda Auto, ORLEN Unipetrol, Arxada, Merck, Plzeňský Prazdroj, Madeta, Nicolet CZ, NET4GAS, ŠKOENERGO, Bonett, Lanxess, HPST, Veolia, Donaulab, Preciosa, ČEZ, Roche, LECO, P-Lab, Mondi, Optik Instruments, MELVIA TRADE, Shimadzu, Helago, AAK Czech Republic.

The school continues with long-term collaboration with the companies ORLEN Unipetrol, Preciosa, etc.

The Department of Communication continued with more systematic approach to relationship with companies. It consists in active contacting and mapping of the needs and possibilities across various industries relevant to UCT Prague.

5) Demand for study

The demand for study in accredited study programmes in the education area Chemistry and Food Industry has been stable in the recent years at UCT Prague, amounting to approximately 1,000 new enrolments in bachelor´s degree study. The year-to-year increase of the total number of students enrolled in bachelor´s degree studies at UCT Prague was 9%.

More detailed statistic figures of admission proceedings at UCT Prague (number of applications, number of admitted and number of enrolled in accredited study programmes broken down by school units, broadly defined ISCED-F fields and type of study, including totals for the whole school) are provided in Table 5.1 in the Tables section.

In case of doctoral study, the number of applications and the number of enrolled in study shows a year-to-year decrease by 9% and 13% respectively. Such year-to-year decrease is based on comparison with the pandemic year 2020 when interest in doctoral study as security after completing master´s degree level of study soared (by 37%), probably in connection with uncertainty of further development when graduates assessed it was convenient in such situation to continue studying. The number of applications and enrolment in doctoral study reached the level of the year 2018, which was in terms of admission considered a successful year.

a) Entrance exams

Applicants to study in bachelor´s degree study programmes in the education areas Chemistry and Food Production at UCT Prague do not sit for entrance exams. In the year 2021 UCT Prague admitted all applicants with completed secondary or completed secondary vocational study with the secondary school leaving exam “maturita” who ranked above the cut-off limit defined by the maximum number of admissions. The order of candidates was determined based on the average results in selected subjects at secondary school (mathematics, chemistry); in case of four-year bachelor´s degree programmes the criterion for determination of the best candidates was the average calculated from the average study results and the talent exam.

In the year 2021 UCT Prague admitted to study in master´s degree study programmes in the education areas Chemistry and Food Production all applicants with completed secondary or completed secondary vocational study who at the same time met the following conditions: they graduated from a bachelor´s degree programme, during the study of the bachelor´s programme they obtained at least 100 credit points in selected types of courses and they ranked above the cut-off limit defined by the maximum number of admissions. The criterion for determination of the order of the candidates for master´s degree study was weighted average of the marks obtained in selected types of courses. The weight was the number of credit points obtained for the given course. If no credit system was applied to a bachelor´s degree or if the applied credit system was significantly different from the ECTS system (30 credit points per semester), the faculties assignmed credit points to courses in compliance with the rules applied at UCT Prague. If the marks system used during bachelor´s study was different from ECTS recommendation, it was re-calculated pursuant to the rules applied at UCT Prague. If the applicant had not met the

requirement of 100 credit points in the selected courses, the Dean decided on another admission requirement, which was to pass an entrance exam in which the candidate had to prove knowledge of the selected corueses or areas determined by the Dean, or the Dean decided on an individual study plan that included courses in which the student would remove gaps in the required knowledge.

Applicants to study of Economy programmes (bachelor´s degree and master´s degree) take an entrance exam in mathematics and English.

Proceedings for admission to doctoral study programmes were organized in the year 2021 by the individual facutlies. The study was advertised by the Department of Communication in collaboration with the Department of Science and Research. The time schedule of admission proceedings for the following academic year is announced in December (within the deadline required by law) by the Vice-Rector for Science and Research. The admission proceedings for the academic year 2021/2022 were announced pursuant to Section 49 para 5 of the Act No 111/1998 Coll. by the Rector´s advertisement stating the doctoral study programmes provided at the faculties of UCT Prague and stating the branches on which the dissertation theses are focused. All information regarding the admission proceedings are posted on the web of doctoral study. The selection of students to the first year of doctoral study is individual and targeted. Compliance with the requirements for admission to study in a doctoral study programme is verified by an entrance exam. The entrance exam is based mainly on formal and informal interviews. The admission committee considers the study results of the candidate to date, his or her experience, publication activity, if any, and references. Due to the pandemic situation, online admission interviews were allowed in the year 2021. Therefore, some faculties held the interviews mainly online.

b) Collaboration with secondary schools in promoting the university

Chemistry communication and promotion of study of chemistry-based programmes has been for a long term one of the most important activities of UCT Prague performed at secondary and elementary schools as well as among general public. The aim is to present that study of chemistry and other technical and natural science programmes is demanding but interesting at the same time and with good prospects of placement on the labour market.

UCT Prague collaborates with a wide database of approximately 500 secondary schools, which receive information on admission proceedings, the Open Doors Days, Summer School for secondary school teachers and a number of science communication events organised by the university. These are often long-term contacts based on personal form of communication. UCT Prague provides study materials to teachers free of charge, contributes to optimisation of curricula and organizes free lab practice or visits for students of secondary schools, all tailored to the needs of secondary school teachers.

Since 2020, the school has also been running a special web for candidates studuj.vscht.cz and publishing a newsletter on a regular basis. According to the current trends in world marketing, in

2021 the school recorded profiles of students related to the individual study programmes, which gives the candidates the chance to get to know various persons studying at UCT Prague and to get a better picture of the content of the respective study. In 2021 UCT also registered an official account in TikTok, which is the social network that is gaining popularity among the generation of potential students. We can still see increasing interest in the school´s Facebook profiles (year-to-year increase +200 fans) and Instagram, which exceed 6,200 followers (+1,100). Professional standards are met by the school´s profiles on LinkedIn and Twitter.

Unlike in the preceding years, the school unfortunately could not present itself at spring national and international education fairs due to the bad epidemic situation. Neither were held the traditional Open Doors Days in January, which were replaced with an online Open Doors Day, which attracted more than 1,200 visits. In autumn the situation was more favourable and the Open Doors Days in December were visited by 700 potential students; Gaudeamus fairs in Brno and in Slovakia were held as well.

One of UCT Prague´s reaction to the COVID-19 pandemic was the decision to provide potential students with free catch-up classes of natural sciences, as well as free consultations regarding the secondary school leaving exam. Over 300 secondary school students accepted these two offers.

Within development and communication programmes, there was also carried out, to limited extent, targeted promotion of study of chemistry at secondary schools. Our students visit schools with the project “Modern Chemistry Class”, within which secondary schools and higher grades of elementary schools were visited in 2021, both in and outside Prague. In total, 300 “Modern Chemistry Classes” were taught, the Covid pandemic did not allow more.

The 35th year of the event “Summer School for Secondary School Teachers of Chemistry, Physics and Mathematics” took place at the end of August 2021 (for more details see Part C, Chapter 2, point c).

6) Employees

UCT Prague reported in 2021 the total of 922.9 calculated FTE (full time employment) of academic and non-academic workers, of which 703.7 FTE were academic workers and 219.2 researchers. Academic workers include professors, associate professors, assistant professors and assistants. There is no position of lecturer at UCT Prague. Researchers are persons who perform scientific research tasks but are not engaged in pedagogical activities (under Section 70 of the Higher Education Act No. 111/1998 Coll.). The highest number of academic and research workers was employed at the Faculty of Chemical Technology, which is the biggest of all the school´s faculties. Among other workers, technical and office staff (TOS) form the biggest group. More details are provided in Table 6.1 in the Tables section.

In 2021 the total of 1,297 academic and research workers were employed with UCT Prague, of which 1,048 were academic workers and 249 researchers. In the category of academic and

research workers there were 548 female workers in total, of which 430 were academic female workers and 118 female researchers. Female representation was higher in the category of researchers (47%) than in the category of academic workers (41%). The highest female representation within academic workers was in the category of scientific, research and development workers involved in pedagogical activity (47%); on the contrary, the lowest female representation was among professors (12.5%). The biggest number of female academic workers was within the age interval up to 29 years of age (121 women), while in the female researcher category the biggest representation was the group aged within the interval 30 - 39 years (46 women). In general, the share of women among academic and research workers is higher in lower age groups and decreases with the increasing age of the groups. The average age of academic workers in the year 2021 was 41.4 years. Detailed data broken down by faculties and other units of the school are provided in Table 6.2 of the Tables section.

Data on academic and research workers showing full time/part time employment and the highest achieved qualification in physical counts and detailed breakdown are provided in Table 6.3 in the Tables section. Full time employment (within the scope of 0.71 – 1.00 FTE) was the most frequent type of employment of academic and research workers at UCT Prague in 2021.

An overview of number of managers by bodies and organisational units at the level of the school and its parts, stating the number of women, is provided in Table 6.4 in the Tables section. At UCT Prague as a whole there are 309 persons in management positions, of which almost 18% are women. As for female representation in management positions at faculties, the average value is around 19 %, where the highest female representation in management positions is at the Faculty of Food and Biochemical Technology with almost 42%, followed by the Faculty of Environmental Technology with 15%, and by the Faculty of Chemical Engineering and the Faculty of Chemical Technology with the same representation of 9 % of women in management positions.

In the year 2021 there were working at UCT Prague 73 academic workers and 55 research workers with foreign citizenship; their work was based on a work contract. In total, the biggest number of academic and research workers with foreign citizenship worked at the Faculty of Chemical Technology (58) and at the Faculty of Chemical Engineering (39). The average calculated numbers of academic and research workers with foreign citizenship are provided in Table 6.5 in the Tables section.

In 2021 there were appointed at UCT Prague 7 professors and 12 associate professors, their average age being 44.7 years (professors) and 43.7 years (associate professors). More details regarding the number of newly appointed associate professors and professors at UCT Prague in the year 2021 are provided in Table 6.6 in the Tables section.

a) Career rules for academic workers and incentive tools for remuneration

The basic principles of the career rules of academic workers (years of experience, assessment of pedagogical, scientific and research activities, publication activity) are contained in the following internal regulations of UCT Prague:

- 20.07/01 Attestation of academic workers at UCT Prague
- 20.08/12 Attestation and periodic assessment of research, professional and technical workers at UCT Prague
- Selection process rules for filling positions of academic workers at UCT Prague
- 20.05/14 Selection process rules for appointment of heads of departments at UCT Prague
- 20.18/17 Selection process rules for filling management positions at UCT Prague

Each academic worker who meets the defined minimum qualification requirements has the option to submit a request for attestation or habilitation procedure, or for professor appointment; such request is submitted to the Dean of the respective faculty, or to the Vice-Rector in case of all-school departments. The request is evaluated and reviewed by a panel. In case of a positive result, the academic worker is then moved to a higher job position and the corresponding wage category.

Variable wage components (personal premium, bonuses) are a highly motivating tool for academic workers of UCT Prague. In the year 2021 the variable wage components of academic worker formed on average around 51.6 % of the total volume of wages paid out (personal premiums 17.4 % + bonuses 34.2 %). The amount of variable wage components depends on the activities and achieved performance in educational, but namely in scientific and research areas (projects, grants, publication activities). Assessment of performance of individual faculties, or departments, is performed annually and is reflected in the amount of funds used for personnel costs allocated within the UCT Prague´ s budget. In such assessment in the year 2021, pedagogical and creative scientific and research activities undertaken in the preceding 3 calendar years were assigned the following weight:

Area	Criterion description	Weight
Pedagogical activities	Time spent by teachers on lectures, seminars, basic and specialized laboratories during the semester; also, time spent on supervision of students´ theses and examinations	50 %
Scientific and research activities	Bibliometric assessment of publication activities	37 %
	Amount of overhead funds within special purpose support (grant activity)	11 %
	Amount of overhead funds obtained for work done for clients from practice within contracted economic activity	2 %

Calculated share of faculties in the total performance of the university is the main parameter for the process of reaching an agreement among the Rector and the Deans of the faculties. Subsequently, an “Agreement among the Rector and the Deans on Allocation of Personnel Costs” is signed for the respective calendar year. The amount of funds obtained for personnel costs defines also the amount available for variable wage components. Differences among faculties in

the average amount of yearly bonuses per one employee in the year 2021 amount to a difference of tens of thousands of Czech crowns.

When dividing above-tariff (bonus) wage components among individual academic workers in their workplaces, the most important criteria are undoubtedly the achieved publication activities, outcomes of scientific and research activities and pedagogical activities. These motivational tools supporting creative activities of academic workers are used by all faculties of UCT Prague.

The Rector´s award for extraordinary results in research and development or for other merits contributing to the development and promotion of UCT Prague and the Rector´s award for young academic workers up to 35 years) for extraordinary work results are awarded every year.

Furthermore, for example, the Dean of the Faculty of Environmental Technology awards the Dean´s Award, which is given to five members of the academia of the faculty who in the previous year achieved the highest number of points in the assessment of their activity according to the internal methodology of the faculty (publication activity, results of research, experimental development and innovations).

Since 2014 UCT Prague has been using for the assessment of the activities of its employees an all-school electronic form – Employee´s Profile. The form is being gradually improved based on the experience from previous years and namely based on the feedback from faculties.

The Employee´s Profile contains the following information:

- Basic information about the employee/workplace,
- Overview of creative activity (publication activity, submitted/implemented grants, supplementary economic activity),
- Overview of pedagogical activity (teaching, examining, supervision over qualification theses, practice and excursions, life-long learning and university of third age, summer school, youth academy, secondary school student professional activity, student research and professional activity),
- Overview of other activities (management position, engagement in the school´s bodies, committees and boards, representation of UCT Prague in professional associations and organisations, mass media and promotion activities, etc.),
- Financial data (financial share in R&D and educational projects, financial share in supplementary economic activity, financial value of contact lessons, paid personnel costs).

Over the last years, the Employee´s Profile form went through several changes. The need for data to be re-entered by the user was partially reduced, the possibility to enter data outside the defined areas was expanded. Information contained in other applications of the internal information system is transferred to the form automatically and then validated by the user. There were assessed the possibilities of quantification according to the defined assessment based on the number of assigned points. The Employee´s Profile was also enhanced by a system

filter enabling the users to choose elements that they consider relevant to their specific needs. The setup of data for the area of pedagogical activities was adjusted as well.

In addition to data verification by automated transfer from other electronic information system, which was set up during the year 2020, in the year 2021 correctness of the setup of data search, filtration options based on various criteria and data arrangement according to the requirements of individual recipients of the obtained information were verified.

Monitoring and assessment of performance of academic and research workers serve as a key element for evaluation of their performance and enabling their professional growth and personal development.

b) Ensuring development of pedagogical skills of academic workers

As follow-up to the carried out Pedagogical Skills Course, in 2021 individual couching was organized for academic workers who were interested in such activity. In total, 10 teachers took part in the activity. The concept of the course was continuously innovated and appropriate teaching and support materials and online sources were searched for. The focus was on the specifics of distant or hybrid learning. For next year we expect to make such support more effective by introducing targeted seminars and study materials.

In continuation to the research performed by the Department of Communication, a new course Catch-up Lesson Techniques was prepared in cooperation with students who have active experience in this area. Within preparation of this course the employees of the Department of Education passed theoretical findings to students and those, in turn, transferred their practical experience to pedagogues. The aim of this activity was to prepare the course Catch-up Lesson Techniques for training of employees and PhD students with expected implementation in the year 2022. In total, 8 persons were engaged in this activity.

c) Ensuring gender equality principles in human resources management

Creche “Zkumavka” (Test Tube), which has been in operation since 2013, provides all-day care for pre-school children of UCT Prague´s employees. The services provided by the childcare enable parents to return to work after maternal or parental leave and in cases when they are not able to place their child in a nursery or other establishment in their place of residence. The care is also provided for children of foreign employees taking part in research projects financed by grants to support mobility of researchers.

Considering the specific conditions of individual workplaces of the employer and the nature of work of the employees, the following may be agreed:

- Flexible weekly working hours, or other individual adjustment,
- Work to be performed in other agreed place (work from home) if the nature of the work allows that.

Last but not least, UCT Prague allows (again with regard to the conditions at the workplace and the nature of the work) parents returning after a maternal/parental leave to work part time, which for the necessary transition period enables them to achieve a better work-family harmony.

d) The issue of sexual and gender-based harassment

In connection with the issue of sexual and gender-based harassment, UCT Prague proceeds in compliance with the following internal regulations:

- Code of Ethics of UCT Prague - A/N/861/7/2018
- Prevention of sexual and gender-based harassment at UCT Prague – A/S/961/8/2018
- Rules of Procedure of the Ethics Committee of UCT Prague – A/N/961/9/2018.

By these documents UCT Prague declares that in compliance with general principles of human rights protection it will not tolerate sexual and gender-based harassment in any form; this applies to the institution´s environment as well as to any related environments. UCT Prague fully supports positive environment and respect to individuals. The regulation informs employees and students how to proceed in case of behaviour indicating sexually motivated harassment and gender-based harassment.

The Ethics Committee discusses cases in compliance with the regulations stated above, passes resolutions stating whether the respective case represents a breach of internal regulations or not and proposes measures or sanctions, as the case may be.

7) Internacionalisation

The long-term intention of UCT Prague is to be actively involved in international integration and to expand and deepen collaboration with partners from Europe and beyond in the areas of science, research and pedagogy. The fundamental pillars of these activities are international scientific and research projects, interuniversity agreements on cooperation, mobilities of students and employees, participation in the Erasmus+ programme, joint study programmes with universities abroad. In the year 2021 UCT Prague had more than 185 interuniversity agreements on cooperation and 167 bilateral Erasmus+ agreements. The continuing active participation of academic workers and students in international projects and programmes leads to establishing new contacts and expanding the areas of collaboration, both in terms of content and geography. The interest of foreign partners to enter in new agreements has decreased slightly as the COVID-19 pandemic affected the possibility to carry out such collaboration; for the part of UCT Prague, the priority is to enter into agreements envisaging mutual academic collaboration and reciprocity of student and research stays. Like in the preceding years, there were efforts focused on expanding the options for UCT Prague students to study at foreign universities. In the year 2021 the school continued to concentrate namely on expansion of the existing and entering into new agreements in the economy and business fields of study which were newly accredited at UCT Prague.

Big attention was paid to foreign students and visiting professional workers. Every year UCT Prague welcomes the interest of foreign students coming for short-term stays and internships, namely within the Erasmus+ programme, who choose courses from the accredited study programmes in English or who work on a laboratory project. The number of foreign students studying within the Erasmus+ programme at UCT Prague in 2021 was lower in comparison to the previous year, namely because of the continuing COVID-19 pandemic affecting the students´ interest in foreign mobilities.

In the year 2021, international master´s degree Erasmus Mundus programmes continued and applications were submitted for their continuation in the next period as well. Higher offer of study options for foreign students is also of benefit to Czech students, who can gain experience in working and studying in a multicultural environment and, as the case may be, to take part in lessons given in English. In addition, offer of study programmes in English contributes to strengthening of international reputation of UCT Prague.

In the year 2021, activities continued to expand the offer of double-degree study programmes. At master´s degree level, study plans of offered double-degree programmes were updated and negotiations started to establish new programmes with other foreign institutions. At doctoral study level, 10 students studied in a double-degree programme.

In the year 2021, UCT Prague was involved in 2 projects of International Credit Mobility. However, their implementation was delayed because of the continuing travelling restrictions. Then in 2021 steps were taken to prepare submission of application for the KA171 mobility programme of regional partnerships, which replaces the International Credit Mobility programme. Implementation of Erasmus KA2 project continued, namely in the area of preparation and development of education using digital tools in collaboration with other institutions involved.

Thanks to funds from the development programme of the MEYS within implementation of the Institutional, and despite the unfavourable epidemic situation for most of the year 2021, UCT Prague hosted 8 foreign experts (3 visits were virtual): Prof. Lise Appels from Katholieke Universiteit Leuven, Prof. Hailong Wang, Ph.D. from School of Environmental and Chemical Engineering, Foshan University; Prof. Dr. Michael Rychlik from Technical University of Munich, Assoc. Prof. Antonio Vicente Ph.D. from University of Minho, Josep Rubert Bassedas, Ph.D. from Wageningen University & Research, Prof. Dr. Jens-Uwe Grabow from Gottfried-Wilhelm-Leibniz-Universität Hannover, doc. Ing. Milan Čertík, Ph.D. from Slovak University of Technology in Bratislava, prof. Andrea Brancale from University of Cardiff.

As in previous years, UCT Prague continued providing support in the form of scholarships based on achieved good study results to students in bachelor´s, master´s and doctoral study programmes taught in English.

a) Support for participation of students in foreign mobility programmes

Student mobility was supported in the year 2021 within all three levels of study. With the support of funds from the OP funds from the project OP RDE "MOST" and funds from MEYS, 26 students of doctoral study programmes were able to go on long-term study stays, internships, workshops and training which were closely linked to their study and professional focus. The most frequent destinations were Germany, Belgium and Sweden. Such types of mobility are highly appreciated both by students and by supervisors as a source of valuable experience, opportunity to improve language skills and establishing new professional contacts, and as a motivation for further personal and professional development.

In long term, the biggest portion of student mobility is represented by outgoing mobilities within Erasmus+. Within this programme, the total of 66 students went to 17 countries for a study stay or a practical internship in the year 2021; students of UCT Prague went most frequently to Germany, Spain and Finland. The main benefit of the programme is significant personal development of the students who can verify their knowledge and skills in an international environment. Students are also promoters of the reputation of UCT Prague abroad – this is proved by annual high interest of incoming students (219 students in the year 2019). However, mobilities in the year 2021 were still affected by the COVID-19 pandemic, when a significant part of already approved outgoing and incoming mobilities could not happen and had to be cancelled.

UCT Prague supports study of its students abroad and motivates them to gain foreign experience. At the beginning of the summer semester the Department of International Relations organized an information meeting where students interested in outgoing mobilities could learn about the Erasmus+ programme, the internal programme MOBI and other opportunities to study abroad, such as offers from DAAD, CEEPUS, AKTION, AIA, Campus France and others.

Students considering travel abroad are supported by professional advice and recommendations from the staff of the Department of International Relationship as well as from faculty coordinators and Vice-Deans for Education with whom the student consult their study plans for the mobility period prior to their travel so that such plans conform to their specialisation at UCT Prague and the students could get the highest possible number of credit points recognized when they return. Academic recognition of study results from abroad is ensured by the Learning Agreement approved before the travel by guarantors of the respective courses and Vice-Deans for Education, in some cases heads of departments and supervisors – this depends on the type of study.

Within the Erasmus+ programme, over 200 students from partner universities studied at UCT Prague in the year 2021. The countries with highest representation were France, Spain and Poland. Besides study stays students are also interested in working on their laboratory project or final diploma thesis at UCT Prague.

Table 7.3 in the Tables section shows representation of students of the different types of study who during their successfully completed study in the year 2021 went abroad for a study stay or

internship exceeding at least 14 days. In case of graduates from doctoral study programmes, the table shows how many completed a stay or an internship abroad at least 1 month long.

Mobility of students, academic and other workers of UCT Prague broken down by countries is described in detail in Table 7.2 in the Tables section.

Employees of UCT Prague undertook in total 263 business trips abroad, the purpose of which was especially active participation in conferences, seminars and workshops. Other reasons for travels abroad were meetings with researchers working on the same project, discussions of professional groups and international scientific associations or preparation of new projects. Besides presentations of scientific results and development of research activity, the travels were focused on pedagogical activity at foreign universities, teaching within joint study programmes and defence of cotutelle doctoral theses. The completed travels abroad are of a considerable benefit to the development of the school and strengthen the school´s intention to develop its international activities in research and pedagogical activities. Exchange of professional experience, inspiration, establishing new contacts, improvement of language and communication skills and motivation of employees for their further work are the main benefits of such travels.

The most frequent destinations of business trips abroad were int the year 2021 Slovakia, followed by Germany and Italy. Within pedagogical or scientific cooperation UCT Prague received the total of 8 visits.

b) Support for outgoing mobilities of academic and non-academic workers

UCT Prague employees are informed about the offer of mobilities on the intranet of UCT Prague, where they can find all required information and where they can see also an electronic board with updated offers of academic and non-academic mobilities. In addition, e-mails are sent out to draw attention to current offers and calls. Employees can also rely on experts from the Department of International Relations, who are able to give advice in the area of outgoing mobilities of employee, including the related paperwork. The offer of mobilities for employees includes offers of the Erasmus+ programme, the Fulbright Commission, DAAD, AKTION and others.

Administrative steps to be taken in connection with receiving visits and sending employees abroad and issues associated with cases of parallel employment in more than one workplace in different countries were dealt with at UCT Prague in 2021 within the PRADIP (Guide through Administration for International Workers in Academic Environment) project of the MEYS programme INTER-EXCELLENCE, INTER-INFORM sub-programme, whose outcomes were published in the form of a webinar and publications of the Centre of Information Services of UCT Prague.

c) Ensuring integration of foreign members of the academia

To improve integration of foreign students in the student body and administrative systems, UCT Prague offers courses of the Czech language and the opportunity to participate in events organized by student interest groups of UCT, for example ESN UCT Prague (Erasmus Student Network), 4Students, UNI ART. The group ESN UCT Prague, which is focused on support for foreign students during their stay at UCT, receives very positively evaluation by the incoming students, not only for its "Buddy" programme run by volunteering students of UCT Prague who help their foreign fellows not during their first weeks of stay and thereon to solve a number of day-to-day study and life situations, but also for the number of leisure activities organized by the club for foreign students throughout the academic year. In spite of the continuing unfavourable epidemic situation in the year 2021, a few events in person were organized in compliance with the strict anti-epidemic measures.

Students paying for their studies as well as other foreign students have at their disposal a network of tutors, students of UCT Prague helping foreign students to adapt to the school´s environment and to cope with the study. Counselling services of the Counselling and Career Centre of UCT Prague are offered in the English language as well.

The Department of International Relations organizes, on a regular basis, information meetings for foreign students during which they deal with any problems the students may have in connection with their learning environment, they receive from students' feedback on their satisfaction with the study and offer them the opportunity to participate in improving the conditions of studying in a foreign language systematically, e.g. through cooperation with representatives of the Student Senate.

In the year 2021 efforts continued to develop a Welcome Centre within the Department of International Relations of UCT Prague, whose task is to provide comprehensive services and to assist foreign members of the academia of UCT Prague to integrate in the community. Within the Welcome Centre there were prepared further guides for (future) foreign members of the academia concerning administrative procedures at UCT Prague as well as practical aspects of life in the Czech Republic and various life situations that foreign members of academia may encounter during their stay. The Welcome Centre provides also visa services to future foreign employees who are to start their work at UCT Prague. In the year 2021, the Welcome Centre took care of more than 100 foreigners coming to UCT Prague.

d) Other important activities enhancing the internationalisation of UCT Prague´s activities

In 2021 support was provided for participation of research teams in international programmes and internationalisation of UCT Prague environment within the project "International Projects Support Office and Support for Integration of Foreign Researchers in the Czech Republic, Expanded by Information Platform for Support of Innovations in the Food Area (KOMPAS)" (INTER-INFORM, LTI20005). The key activities of the project were information seminars, individual consultations and administrative support for applicants and researchers awarded

grants for international cooperation, and training for new project administrators. Events held in English were specifically targeted at foreign researchers. The topics of the seminars and consultations were focused primarily on national and international funders whose programmes are relevant for them. Financial support obtained from such programmes would enable their smooth integration at UCT Prague (GAČR, TAČR, H2020 ERC, etc.).

Another key activity of the KOMPAS project was the creation and update of the information platform for support of innovations in the food area (www.inovacevpotravinach.eu). The information platform serves to share information on programmes offered by EIT Food and by Czech entities to support involvement of individuals and various entities in projects focused on innovation in agriculture and in the food industry. Since autumn 2021 the platform website has been presenting "Success Stories", which are podcasts and videos related to various programmes, namely EIT Food, supporting innovations and entrepreneurship. In 2021 the topics of the podcasts were experience from student mobilities and start-up competitions organized by EIT Food every year.

The involvement of UCT Prague in international cooperation programmes in the year 2021 is documented by Table 7.1 in the Tables section. Research teams of all faculties of UCT Prague and non-faculty units take active part in international cooperation programmes in the research, development and innovation areas. During the year 2021, 4 projects from the Horizon 2020 programme and 1 project from the Research Fund for Coal and Steel (RFCS) programme started implementation, 6 project proposals were submitted to Horizon 2020, 46 project proposals were submitted to Horizon Europe and 1 to the cooperation programme of the Czech Republic - the Free State of Saxony 2014 – 2020. In total, UCT Prague worked in the year 2021 on 21 international scientific and research projects of foreign funders, of which 19 projects were from Horizon 2020, 1 project was from the Research Fund for Coal and Steel (RFCS) programme and 1 project from the Czech Republic – the Free State of Saxony 2014 – 2020 cooperation programme and 10 projects were from other foreign funders. An overview of the projects is shown in the following table:

PAPILLONS	H2020-SFS-21-2020, Plastic in Agricultural Production: Impacts, Lifecycles and Long-term Sustainability prof. Ing. Jana Pulkrabová, Ph.D. (FFBT)
AtHyCor	RFCS-RPJ, Modelling of hydrogen activity from atmospheric corrosion in ultra-high strength steels for light structure application Ing. Tomáš Prošek, Ph.D. (Technopark Kralupy)
ORBIS	H2020-MSCA-RISE-2017, Open Research Biopharmaceutical Internships Support prof. Ing. František Štěpánek, Ph.D. (FCE)

2Exciting	H2020-MSCA-ITN-2020, Developing optoelectronics in two-dimensional semiconductors prof. Ing. Zdeněk Sofer, Ph.D. (FCT)
FOODSAFETY4EU	H2020-FNR-08-2020, FOODSAFETY4EU - Multi-stakeholder platform for food safety in Europe prof. Ing. Jana Hajšlová, CSc. (FFBT)
DocEnhance	H2020-SwafS-2018-2020, Enhancing skills intelligence and integration into existing PhD programmes by providing transferable skills training through an open online platform, prof. Dr. RNDr. Pavel Matějka (FCE)
ECC-SMART	NFRP-2019-2020, Joint European Canadian Chinese development of Small Modular Reactor Technology, doc. Ing. Jan Macák, CSc. (FET)
MicroBots4Enviro	H2020-MSCA-IF-2019, Versatile Micromotors for Photocatalytic Environmental Remediation, Huaijuan Zhou, Ph.D. (FCT)
NEWELY	H2020-JTI-FCH-2019-1, Next Generation Alkaline Membrane Water Electrolysers with Improved Components and Materials, prof. Dr. Ing. Karel Bouzek (FCT)
NEXTAEC	H2020-NMBP-ST-IND-2019, Materials for next generation alkaline electrolysers, prof. Dr. Ing. Karel Bouzek (FCT)
WIDER UPTAKE	H2020-SC5-2019-2, Achieving wider uptake of water-smart solutions, prof. Ing. Jiří Wanner, DrSc. (FET)
MetroFood PP	H2020-INFRADEV-2018-2020, METROFOOD-RI Preparatory Phase Project,

METRO FOOD Preparatory Phase	prof. Ing. Jana Hajšlová, CSc. (FFBT)
REPARES REPARES	H2020-WIDESPREAD-03-2018, Research platform on antibiotic resistance spread through wastewater treatment plants, doc. Ing. Jan Bartáček, Ph.D. (FET)
FRINGE FRINGE	H2020 FETOPEN-2018-2019-2020-01, Fluorescence and Reactive oxygen Intermediates by Neutron Generated electronic Excitation as a foundation for radically new cancer therapies, Ing. Robert Kaplánek, Ph.D. (FCE and FFBT)
TeacHy TeacHy	H2020-JTI-FCH-2017-1, Teaching Fuel Cell and Hydrogen Science and Engineering Across Europe within Horizon 2020, prof. Dr. Ing. Karel Bouzek (FCT)
FlowCamp FLOW CAMP REDOX FLOW BATTERY CAMPUS	H2020-MSCA-ITN-2017, European Training Network to improve materials for high-performance, low-cost next- generation redox-flow batteries, prof. Dr. Ing. Juraj Kosek (FCHI)
Foodsmartphone FoodSmartphone.eu	H2020-MSCA-ITN-2016, 720325, Smartphone analyzers for on-site testing of food quality and safety, prof. Ing. Jana Hajšlová, CSc. (FFBT)
EU-China-Safe EU CHINA SAFE	H2020-SFS-2016-2, Delivering an Effective, Resilient and Sustainable EU-China Food Safety Partnership, prof. Ing. Jana Hajšlová, CSc. (FFBT)
Biomates BioMates	H2020-LCE-2016-2017, 727463, Reliable Bio-based Refinery Intermediates, Ing. David Kubička, Ph.D. MBA. (Technopark Kralupy)
HBM4EU HBM4EU science and policy for a healthy future	H2020-SC1-2016-RTD, 733032, *European Human Biomonitoring Initiative,* prof. Ing. Jana Hajšlová, CSc. (FFBT)

SN CZ Ahoj sousede. Hallo Nachbar. Interreg V A / 2014 – 2020	Cooperation programme the Czech Republic – the Free State of Saxony 2014 – 2020/Kooperationsprogramm Freistaat Sachsen – Tschechische Republik 2014 – 2020, H2AC4schools – Challenge for Saxonian and Czech schools to build models of cars fuelled with hydrogen. / der projekt H2AC4 – Renn-Challenge für sächsische und tschechische Schulen zum ErFAHREN der E-Mobilität mit Wasserstoff, Mgr. Michal Janovský and Ing. Václav Bystrianský (UCT)

In the year 2021 UCT Prague continued to be involved in the group of Prague public higher education institutions called "Study in Prague" and in "Study in the Czech Republic", a project of the Czech National Agency for International Education and Research, whose aim is to promote study in the English language in Prague and in the Czech Republic respectively, and to improve the study conditions of foreign students at higher education institutions in the Czech Republic. These activities included also participation of UCT representatives in promotion activities of these initiatives, which took place on line because of the unfavourable epidemiologic situation, i.e. participation in education fairs. Within cooperation in a centralised development project under the leadership of the University of Hradec Králové, representatives of the Department of International Relations of UCT Prague took part in virtual mobility project. The current situation in the area of virtual mobilities at public higher education institutions in the Czech Republic was mapped and good practice of this new type of mobility was described.

Traditionally, representatives of UCT Prague attended a training on international exchange programmes organized by the Czech National Agency for International Education and Research. The training was namely aimed at successful applicants for grant in the Erasmus+ programme; in addition, there was also training for other programmes such as CEEPUS or AKTION.

Internationalisation of activities at UCT Prague is strengthened by participation in international conferences held by renowned world organisations engaged in internalisation of higher education institutions. In 2021 representatives of UCT Prague took part in a virtual conference organized by the European Association for International Education. Thanks to this event, representatives of UCT Prague could learn about the current trends in the area of internationalisation of the higher education sector and about the options of how to react to the continuing COVID-19 pandemic and reduce impacts on higher education institutions. They also had the opportunity to talk to representatives of non-partner higher education institutions and discuss the possibilities of starting to cooperate.

8) Research, development, artistic and other creative aktivity (under Section 1 of the Act no. 111/1998 Coll.)

Creative activities at UCT Prague are focused namely on good quality fundamental and applied research in the fields of chemistry, biochemistry, technical chemistry, chemical and biochemical

technologies, chemical engineering, material engineering, food production and environment. Therefore, there is high publication activity concentrated on articles in scientific journals, especially in periodicals with impact factor, monographs, chapters in monographs and outcomes applied as patents, utility models and other technical works. Traditional and very close cooperation with industry, active transfer of knowledge, participation in innovations and industrial research and development are typical characteristics of UCT Prague´s activities. In terms of finance, in the year 2021 creative activities focused on science, research and innovation amounted to approximately 54.5% of the school´s annual budget.

a) Measures adopted to enhance interconnection between creative and educational activities

At UCT Prague, creative scientific and research activity forms an integral part of the education process, namely within specialized instruction and students´ qualification theses. All diploma and dissertation theses and a major part of bachelor theses are based on independent theoretical and experimental scientific and research work performed by the students. The topics of the qualification theses reflect the needs of industrial practice or current research projects. For most courses taught at UCT Prague it is typical that the academic worker is involved in scientific research activity in the respective area. Results of the scientific research creative activity serve for continuous innovation of the courses and are consistently being incorporated in lectures, seminars and laboratory tasks.

Close interconnection between creative and educational activity in the year 2021 is evidenced by the involvement of more than 380 students of doctoral study and 160 students of master´s degree study in project teams of research projects funded by Czech and foreign funders.

b) Involvement of students in creative activity at UCT Prague

Talented students of bachelor´s, master´s and doctoral degree studies actively participate in the work on research and development projects. Students work as research assistants in departments and perform qualified activities in the laboratories. They present the results of their work at specialised seminars, at the Student Research Conference or even as co-authors of articles in scientific journals. In the year 2021, 535 students of bachelor´s and master´s degree programmes took part in the Student Research Conference. As for PhD students, publication activities form an integral part of their research education, they appear in their annual assessment and it is not possible to defend a dissertation thesis without performing the required publication activity.

c) Funds used for research, development and innovation

Special purpose funds for research, development and innovation (income) obtained by UCT Prague in 2021 from domestic and foreign sources was CZK 1,076.20 million, most of which was used by UCT Prague itself. Basic information on the composition of the special purpose funds is provided in the following table:

Source	Non-investment (million CZK)	Investment (million CZK)	Total (million CZK)
Domestic public sources	727.30	44.03	771.34
Operation programmes – research projects	28.23	6.11	34.33
H2020	22.01	0.00	22.01
Other sources	10.85	0.53	11.38
Contracted research	237.14	0.00	237.14
Total income from Research, Development, Innovation	**1 025.53**	**50.67**	**1 076.20**
Paid out to co-researchers	80.10	1.41	81.51
Funds paid out to co-researchers			**7.57%**

There were 297 scientific research projects running in the year 2021. The following table shows the statistics of the number of scientific research projects in the period 2017 – 2021 broken down by the providers of funding:

Funder	Number of projects in the years				
	2017	2018	2019	2020	2021
Grant Agency of the Czech Republic	95	92	103	94	98
Others including Ministry of Industry and Trade	22	52	38	40	27
Technology Agency of the Czech Republic	43	46	69	70	69
Ministry of Education, Youth and Sports	28	21	67	44	29
Ministry of Agriculture (NAZV)	7	6	13	13	13
Foreign grants	36	30	20	30	31
Ministry of Culture, Ministry of the Interior, Ministry of Agriculture, Ministry of Defence	31	31	24	23	29
Total	**255**	**278**	**335**	**332**	**297**

Every year, UCT Prague organizes or co-organizes a number of prestigious scientific conferences of specialized professional seminars or workshops with national and international participants. In the year 2021, there were again less such events organized than before the COVID-19 pandemic. The statistic details of conferences (co-)organized by UCT Prague, together with the form of delivery (physical or virtual), are provided in Table 8.1 in the Tables section. The table below shows the most important scientific conferences, seminars and workshops in which the employees of UCT Prague participated in the year 2021:

Conference	Date	Venue
24th Conference of the Association of Corrosion Engineers Corrosion and Anti-corrosion Protection of Materials	20 – 22/10/2021	Tábor
8th International Conference on Chemical Technology; ICCT 2021	03 – 05/05/2021	Virtual
HydrogenDays 2021	24/03/2021	Praha
29th ISE Topical Meeting	18/04/2021	Mikulov
10th Czech-Austrian workshop: New trends in photo and electro catalysis	08/12/2021	Hnanice
Modern Trends in Inorganic Technologies 2021	01/09/2021	Košice
Microscopy and Non-destructive Testing of Materials	19 – 22/10/2021	Hrubá Skála
Seminar to commemorate 100th anniversary of the birth of prof. Ing. Jaroslav Bauer, CSc.	07/10/2021	Prague, Strahov Monastery
BioTech2020 and 8th Czech-Swiss Symposium	16 – 19/06/2021	Virtual
8th International Conference on Chemical Technology	03 – 05/05/2021	Virtual
4th Annual conference of STRATAGEM	06 – 08/09/2021	Prague
58th International Conference on Oils and Fats	12 – 13/05/2021	Virtual
108th Cosmetology Seminar	18 – 20/10/2021	Valeč
EIT Food Additional activity: Training school on analytical approaches for food safety, authenticity and quality assessment	01 – 03/09/2021	Prague
Recent advances in food analysis (RAFA 2021)	03 – 04/11/2021	Virtual
EIT Food RIS Fellowships workshop	27/05/2021	Virtual
XXI EuroFoodChem	22 – 24/11/2021	Virtual

Conference	Date	Venue
China International Food Safety & Quality Conference (CIFSQ 2021)	27 – 28/10/2021	Peking
CzechFoodChem 2021	24 – 26/5/2021	Virtual
XXXV Conference and Symposium “Immunoanalysis 2021“	23.- 27/8/2021	Lubochňa

d) Support for students of doctoral study programmes and employees in postdoc positions

Students of doctoral study programmes (DSP) of UCT Prague are supported and motivated above all financially in the form of regular and other scholarships, employment, or other personnel costs (work contracts, agreements on work activities) when working on scientific research projects. Another important motivation element is the offer of study stays and work stays at prestigious foreign institutions and participation in conferences and workshops abroad.

Granting and payment of scholarships are regulated by the Scholarship Rules of UCT Prague. A significant part of the volume of scholarships consists of motivation doctoral scholarships awarded based on the results of research and pedagogical activities of PhD students; such scholarships are awarded by the Internal Grant Agency (IGA) of UCT Prague and funded by money from the Ministry of Education, Youth and Sport (MEYS) in the form of a subsidy designed for Specific University Research. IGA funds are distributed in the form of a grant competition (the rules are available at http://www.vscht.cz/homepage/igs/index/iga). Every year 20 DSP students with the highest number of points for study results and publication and research activity are involved in the school´s Emil Votoček Grant and they are awarded a prestigious doctoral scholarship at the amount of CZK 6,000/month. The total amount of funds allocated to UCT Prague in the year 2021 for specific university research was CZK 48.9 million. Scientific projects within IGA were supported with CZK 44.9 million, of which CZK 25.5 million were used for scholarships for PhD students and master´s degree students involved in student scientific projects, including scholarships from Emil Votoček Grant. Based on active involvement in teaching, PhD students are granted a doctoral scholarship for pedagogical activity, and in 2021 also a one-time special purpose scholarship at the amount of CZK 5,000, from the school´s IGA pedagogical project named Motivation Support for Pedagogical Work of DSP Students. The project was financed in the year 2021 from UCT Prague´s own resources.

Support for young workers belongs to the main priorities of the Long-term Intent of UCT Prague because participation of PhD students and postdocs in scientific research projects is really a key factor and without their involvement it would not be possible to maintain the current high share of science, research and innovations in the activities of UCT Prague. While support for PhD students in the form of scholarships is relatively effective, in case of postdoc positions the situation is rather more difficult because resources similar to the amount spent on DSP scholarship are missing. Young workers are placed in wage categories of assistant professors or

researchers with lower tariff wage. The only possibility is to grant individual personal premiums and bonuses adequately to the scientific research activities. With the aim to facilitate young scientists and researchers their start of research career, an internal competition for Junior Grants of the Rector of UCT Prague 2021 (JIGA). There were received 17 applications of young researchers who met the criteria of the competition. Based on the submitted project of own development, the committees of faculties selected 11 projects, which were supported by the total amount of CZK 2,400,000. The competition was financed from the subsidy for long-term concept-based development of research organisation.

In the year 2021 support for workers in postdoc positions continued within the framework of 4 projects focused on research mobility and financed from OP RDE: ChemJets2, CHEMFELLS4UCTP, CHEMFELLS III and Chemfells IV. In these projects, with the total budget of CZK 66.7 million, there were supported 20 mobilities (10 two-year mobilities, 6 mobilities of 20 months, 1 mobility of 5 months) of foreign researchers working at UCT Prague and 3 outgoing mobilities (2 two-year outgoing mobilities, 1 outgoing mobility of 12 months) of our researchers who travelled abroad.

In the year 2021 at UCT Prague there was 1 prestigious project H2020 Marie Skłodowska Curie Actions – Innovative Training Networks, which enables international and interdisciplinary mobility of PhD students.

In addition, activities of the Dagmar Procházková Fund continued, which is a fund established at UCT Prague to support scientific projects of academic workers with international experience from whom it can be expected that they will continue their professional career at UCT Prague. The fund enables workers in postdoc positions to make a career move. Within the framework of the Fund in the year 2021 there were 2 running grants, 1 grant was successfully completed and 1 new grant was awarded. The financial support for one grant is CZK 2.4 million.

UCT Prague also offered in 2021 a motivation scheme to support workers in engagement in international scientific and research projects. This scheme is focused on researchers, i.e. including postdocs, who are interested in international project cooperation but have not engaged in such projects or have not been successful yet.

Support for PhD students and postdocs is provided also through individual consultations on the possibilities of career development, opportunities of (national and international) funding of the research intents and outgoing mobilities. Such consultations are provided by the staff of the Department of Science and Research on a continuous basis. This department also organizes information seminars which are focused on certain topic, for example, seminar on available foreign mobilities (Erasmus, MSCA, COST, Fulbright, bilateral programmes), seminar on international opportunities in financing scientific and research projects (Horizon 2020, JPIs, ERA-NETs, COST), seminar on opportunities in funding for foreign postdocs working at UCT Prague, seminars on specific research areas of the Horizon 2020 programme (Secure, clean and efficient energy and EUROATOM). The department also administers the online application ANLUPA, which serves for searching for international funding opportunities and mobilities based on key words and enables sending notifications based on parameters chosen by the user.

The Counselling and Career Centre of UCT Prague https://pkc.vscht.cz/mentoring/PhDmentoring) offers PhD students and postdocs the chance to take part in their mentoring programme.

e) Methods of collaboration with application sphere in the creation and transfer of innovations and their commercialisation

UCT Prague traditionally belongs to top Czech research institutions with intensive cooperation with industry. UCT Prague researchers participate in a number of research projects funded from public resources within the framework of projects of domestic funders (e.g. Technology Agency of the Czech Republic, Ministry of Industry and Trade, Ministry of Agriculture, Ministry of the Interior, Ministry of Culture) as well as from non-public resources within the framework of direct contract-based cooperation with business entities. Research cooperation in work on projects results in a number of applied outcomes, which the school reports in the RIV (index of information on outcomes) database. An overview of the outcomes for the last four years is provided in the following table:

Number of applied outcomes in the years	**2018**	**2019**	**2020**	**2021**
P_Patent	21	14	14	13
F_Industrial design, utility model	24	30	23	23
Z_Variety, technology, breed, pilot operation	15	22	12	12
G_Functional sample, prototype	12	22	23	24
H_Results implemented by funder	0	1	0	7
N_Certified methodology	6	7	18	14
R_Software	0	4	2	2
Total	**78**	**100**	**92**	**95**

Joint research with industries and application sphere

Within the framework of application research, grants of at least three years of duration, concept research and development are performed with active involvement of doctoral and master´s degree students. Research contracted by business entities usually deals with current technological and analytical issues. The advantage is that UCT Prague is flexible and reacts quickly to new situations when handling the requirements of technological practice. This gives the school a competitive advantage over the other entities on the market. The basic strategy of UCT Prague for application of the results of research, development and innovation in practice includes:

- High quality of methodological and administrative support to academic workers in filing applications for patents and utility models, in negotiations with business entities on the possibilities of use of the applied research results, including financial and legal services.

- Functional system of internal regulations and standards – directive of UCT Prague no. 60.39/11 Protection and Application of Intellectual Property Rights (www.vscht.cz/veda-a-vyzkum/patenty-a-publikace).
- The Technology Transfer Office (TTO) has been in operation at UCT Prague since the year 2014. Its activity contributes to increased application of the research and development results in practice and ensures effective cooperation with the application sphere.
- The motivation system used to remunerate the activity of those involved in implementation of the outcomes of research, development and innovation in practice (the basic principles of remuneration are governed by the directive "Protection and Application of Intellectual Property Rights").

Overview of patent activity

In the year 2021 the Industrial Property Office of the Czech Republic (IPO CR) hold records of 196 valid intellectual property protection documents with the participation of UCT Prague.

An overview of patent activity for the year 2021 is provided in the following table:

IPO CR	Number of valid patents	81
	Total number of valid utility models and industrial designs	115
	Number of patents granted in the year 2021	13
	Number of patent applications with running proceedings	25
	of those number of industry designs filed in the year 2020	13
	Number of filed utility model applications	15
	Number of newly registered utility models in the year 2020	17

The aim of commercialisation of applied research and experimental development is to apply the results of research and development in practice.

Licensing of technologies of UCT Prague to the application sphere

From the Commercialisation Fund founded in 2018, UCT Prague in 2021 supported several technologies with the potential to be licensed. This was the start of the national phase of the international patent application of the invention PCT/CZ2020/050019 "*Method of production of a composite of yeast-derived beta glucan particle with incorporated poorly-water-soluble low-molecular-weight compound, pharmaceutical preparation and use thereof*". The start of the national phase expands the possibilities of the invention´s application and also places UCT Prague in a better position for negotiating the licence conditions during the current negotiations. Next, the Fund supported filing of an international patent application for the invention

PCT/CZ2021/050019 "*Device and method for preparation of liquid marbles*". Financing of the national phase was decided based on a thorough assessment of the application potential of the invention. The Fund also supported patent proceedings in the individual countries of national phases PCT/CZ2018/050035 "*Method of producing compounds of lithium and optionally of other alkali metals"*. In case of all applications stated above, detailed conditions of commercialisation are currently being negotiated.

UCT Prague continues with the strategy outlined in the previous years, when it started intensive cooperation with several entities who have experience in setting up university spin-offs and a wide network of contacts including contacts with investors or who are able to invest themselves. Thanks to the agreed cooperation, it is possible to help new companies whose aim is to commercialise industrial property originated at UCT and to find suitable contacts to license invents created at UCT.

During the year 2021 UCT entered into two licence agreements. The first one was based on cooperation in the TACR EPSILON project, where UCT together with the J. Heyrovský Institute of Physical Chemistry of the Czech Academy of Sciences licensed the know-how related to the development of a prototype of a distribution board which contains a replacement for the sulphur hexafluoride (SF6) gas. The licensor was the company Eaton Elektronika s.r.o. – commercial recipient of the project. In case of the second licence, UCT transferred the rights to use a patent co-owned with the Institute of Macromolecular Chemistry of the Czech Academy of Science, v.v.i. (public research institution) to the company TailorMem s.r.o. – spin-off of the Institute

Spin-offs at UCT Prague

As planned, several companies that are spin-offs of UCT Prague were established. They are LCA studio s.r.o., Levare s.r.o. and MarbleMat s.r.o. In all cases the rights to use the know-how originated at UCT Prague will be transferred in the form of a licence and UCT Prague will not make financial investment in the companies. Licence negotiations with the creators of the know-how are in the final phase.

To introduce a systematic approach to establishment of so-called untrue spin-offs at UCT Prague, the Technology Transfer Office contacted the Technology Transfer Office of Masaryk University. Together, based on the experience obtained in the year 2021, they will prepare during the year 2022 a draft of Methodological Instruction for Establishing Spin-offs without Share Acquisition by UCT Prague. The methodological instruction should facilitate understanding of the topic for other interested creators at UCT and thereby to support interest in entrepreneurship and this form of commercialisation of outcomes with application potential.

UCT Prague continues being part of Transfera. The membership enables the school to publish results with application potential in the Transfera´s database and to share findings and experience with other transfer offices.

Financial income from cooperation with industry

The income of UCT Prague obtained from contract research and development agreements within supplementary business activity reached in the year 2021 CZK 67.63 million. In comparison with the year 2020, the income from this activity increased by 18.44%. UCT Prague is traditionally oriented to cooperation with entities of the food industry (Fruta Podivín, a.s. Slovácká Fruta, a.s., Olma, a.s., 4MP Technologies Limited, Kostelecké uzeniny, a.s., Kmotr – masna Kroměříž a.s., Uzeniny Příbram a.s., MRÁZ AGRO CZ, s.r.o., Plzeňský prazdroj, Vodňanská drůbež, a.s., etc.), the pharmaceutical industry (for example Pharmafit Czech s.r.o., Interpharma Praha a.s.), companies in the environmental protection business (Pražské vodovody a kanalizace a.s., Severočeské vodovody a kanalizace a.s., Dekonta a.s., Spolana, s.r.o., etc.), in special organic and inorganic technologies and materials (AGC Flat Glass Czech a.s., Preciosa a.s., ÚJV Řež, a.s. Lafarge Cement, a.s., etc.) and fuel and energy complex (SABIC, Mero ČR a.s., ORLEN Unipetrol a.s., ČEZ a.s., MERCEDES-BENZ AG Werk, ŠKODA AUTO a.s., etc.).

Income of UCT Prague obtained from organizing paid courses to deepen the qualification of employees of entities in the application sphere reached in the year 2021 CZK 14.15 million, of which CZK 11.15 million came from paid education and CZK 3 million from professional seminars, workshops and conferences.

Income of UCT Prague obtained as payment for activities performed within the framework of professional consultations and counselling or professional activities for entities of the application sphere reached in the year 2021 CZK 3.79 million.

More detailed and summary information on transfer of knowledge and outcomes of research to practice is provided in Table 8.4 in the Tables section.

f) Support for horizontal (cross-sector) mobility of students and academic workers and their education towards development of innovative entrepreneurship competences

Well trained staff is an important pre-requisite for the development of properly targeted internal education activities. Therefore, similarly to the year 2020 and despite the obstacles connected with the COVID_19 pandemic, UCT Prague in the year 2021 engaged in education of the key support personnel of the Transfer Technology Office, Department of Science and Research and in the area of protection, evaluation and management of intellectual property.

Since 2018 the offer of courses for PhD students was expanded by the course “Technology Transfer and Protection of Intellectual Property”. The course was taught for the first time in June 2019 and continued in the years 2020 and 2021. Furthermore, new courses Fundamentals of Management, Scientific Information and Dissemination of Outcomes, and Project Management were introduced in 2019 to the offer for PhD students, which may help students to get a better picture of the areas they need for innovative entrepreneurship. In 2021 an English version of these courses was offered as well.

9) Quality assurance and assessment of the perfomed activities

The Department of Quality Evaluation (hereinafter "DQE") started in 2021 to be involved in the process of electronic procedure of admission to study at UCT Prague. DQE is the guarantor and coordinator of recognition of previous foreign studies of candidates who apply to study in Czech and English study programmes in compliance with the Higher Education Act and the awarded institutional accreditation. In this matter, DQE cooperates with the Department of International Relations, the School of Business and the Department of Education. The year 2021 became a pilot year and ongoing optimisation and improvement of parameters of the admission procedure is expected. In the year 2021 an annual supplement to the Report on Assurance and Assessment of Quality of Educational, Creative and Related Activities (Supplement No. 3) as a tool of regular annual evaluation of the quality of educational, creative and related activities at UCT Prague.

a) Important events and fact related to quality assurance and assessment of the performed activities in the year 2021

In cooperation with a group of study programme guarantors, DQE coordinated the preparation of proposed indicators for regular assessment of the taught undergraduate study programmes. The resulting proposed structure of the "State of the Study Programme Annual Report", including the proposed indicators and draft methodology of assessment of the taught programmes, was reviewed by the guarantors of the study programmes and is being communicated with the management of UCT Prague and the faculties with the aim to create a functional and effective internal tool for assessment and development of quality of study programmes. In connection with forming a system of regular assessment of quality of the provided study programmes, the relevant current internal documents need to be revised. This means a revision of the internal regulation "Rules of Assurance and Assessment of Quality of Educational, Creative and Related Activities" with focus on streamlining and reducing the number of regular assessments that need to be performed not only in the pedagogical area. The revision will also affect the content of the original standard "Assessment, Approval and Management of Study Programmes". The documents that already went through the revision process in the year 2021 are: the regulation "Statutes of UCT Prague", where the revision concerned the power of the Internal Evaluation Board, the "Rules of Procedure of the Internal Evaluation Board of UCT Prague" and the "Study and Examination Rules of UCT Prague". Another demonstration of implementation of good practice in management documents related to the quality of study programmes in the year 2021 was the revision of the directive "Creation of Study Programmes" and the Rector´s decree "Procedure of Internal Accreditation of Study Programmes". In that period, DQE worked with the Department of Internal Audit on the topic "Internal Control System Audit", where assurance and assessment of quality of educational, creative and related activities are a subset of the control system.

The **Internal Evaluation Board of UCT Prague** (hereinafter the "IEB") held six meetings in the year 2021. It approved the intents to submit applications for study programme accreditation; it also approved study programmes for external and internal accreditation; it approved the record of

the per rollam vote of the IEB; it discussed and acknowledged changes in the current study programmes, which do not affect the change of graduate profile; it approved the final version of the proposed Supplement no. 3/2020.

The intents, approved by the Board, to submit applications for accreditation of new study programmes in the year 2021 were:

- Intent of FFBT – Bioanalytická laboratorní diagnostika ve zdravotnictví (N) (Bioanalytical laboratory diagnostics in health care)
- Intent of FET – Omezování klimatických změn (B) (Restriction of climate changes)
- Intent of FCE – Chemická kybernetika (B) (Cybernetics in chameistry)
- Intent for FFBT – Chemie a technologie potravin (B) (Food chemistry and technology)
- Intent for FFBT – Forenzní bioanalytická chemie (B) (Forensic bioanalytical chemistry)
- Intent of UCT – Economics and Management (AB, 4 years)

Study programmes approved by the Board for external and internal accreditation in the year 2021:

- D106 – Konzervační vědy v péči o hmotné kulturní dědictví (Conservation science in care for tangible cultural heritage) (in cooperation with the Czech Technical University in Prague and the Palacký Universtiy Olomouc)
- B205/AB205 – Management udržitelného rozvoje / Sustainability management
- N205/AN205 – Management udržitelného rozvoje / Sustainability management
- D203/AD203 – Management udržitelného rozvoje / Sustainability management
- N310 – Bioanalytická laboratorní diagnostika ve zdravotnictví (Bioanalytical laboratory diagnostics in health care)
- B406 – Chemická kybernetika (Cybernetics in chemistry)

A very important element in the system of quality assurance and assessment of pedagogical activities is feedback from students, which is in the form of surveys. Starting from the academic year 2016/2017 the number of questions in the survey was cut down to two in order to shorten the time required for answering. This was expected to increase the students´ interest in getting involved in the survey and providing their opinions and comments. The percentage of students taking part in the survey remains more or less the same, but the number of comments on courses has multiplied. Student organisations got actively involved in promoting the survey among students. We asked the students to give their opinion on distance learning which took place in the COVID-19 pandemic period and in the summer semester and to comment on whether the course is a follow up to their previous knowledge. The students provided their opinions and suggestions in comments on courses/teachers.

The quality of education in lectures and seminars a well as the quality of laboratory work in the winter and summer semesters 2020/2021 were evaluated based on the following two questions:

Teacher related question:

1. Evaluate the teacher in terms of the method and understandability of his/her teaching and communication with students (assessment 1-5, 1=A – the best, 5=F – the worst)

Course related question:

2. Evaluate the course in terms of concept and benefit as you perceive it. (assessment 1-5, 1=A – the best, 5=F – the worst)

Based on their opinion, students assigned to each question the assessment 1 through 5 and they can add more detailed comments on the lessons. The students can choose if they want to be anonymous or if they want to sign the comment. Teachers respond to the comments directly in the application Anketa (Survey). The system shows the total number of evaluators and the number of comments on the courses. The number of comments includes the responses of teachers to the individual comments of students.

In the winter semester 2020/21 assessment was done by 1031 students, which is 42% of all students. The results are provided in the following table.

Question number	**1**	**2**
Arithmetic average of assessment	1,6	1,8

In the summer semester 2020/21 assessment was done by 462 students, which is 33% of all students. The results are provided in the following table.

Question number	**1**	**2**
Arithmetic average of ssessment	1,5	1,7

The survey results indicate a generally positive assessment of the lessons. There was a significant increase in the number of comments on courses and teachers, almost all of which were positive.

Supplementary sources of information on quality of education include internal assessment organized in various forms by the individual departments. Furthermore, opinions of students, namely of student representatives in the academic senates, are considered as a valuable source of information. Another source for evaluation is derived from the opinions of students on the quality of education that they communicate during discussions with students.

To fight plagiarism in qualification theses, since the academic year 2016/17 UCT Prague has been using a plagiarism detecting system named Theses.cz. Students have to submit/load their theses electronically directly to SIS and from there the theses are sent to Theses.cz to be checked. The

result of the process is available to the student and the supervisor of the thesis in SIS usually within 24 – 48 hours from loading the thesis. Due to high volume of experimental work with unique data in the theses and minimum repetition of topics, plagiarism has not been a serious issue at UCT Prague.

Quality assurance and internal quality assessment includes the internal system managing financial control. UCT Prague complies with the Act on Financial Control no. 320/2001 Coll., as amended. The system consists of two principal parts, which are internal audit and management control. The execution of management control is governed by internal standards and the whole regime of management control complies with the current legislation. The financial control management system was in the year 2021 ensured by the whole management of UCT Prague and the Department of Supervision in the form of individual internal inspections and it was continuously monitored and tested within individual internal audits focused on specific areas of activities.

One of the most important components of internal management control was regulation of internal management procedures and setup of control via internal regulations. In the year 2021 the management of UCT Prague adopted the total of 43 internal regulations, standards, decree and directives. This internal regulation process was aimed at deepening the entire management system of UCT Prague and consequently at effective, purposeful and economic utilization of public funds.

The activities of the **Department of Internal Auditing** of UCT Prague in the period from 1 January to 31 December 2021 were performed in compliance with the defined annual plan and the long-term plan for the period 2021 – 2023 approved by the Rector of UCT Prague. Internal audits focused on effective performance of selected organisational units of UCT Prague and on the status of and compliance with internal documents. Furthermore, in compliance with the Act on Financial Control no. 320/2001 Coll., as amended, the internal audits focused on independent examination of adequacy and efficiency of the internal control system of UCT Prague. Three regular and one extraordinary internal audits were performed in the year 2021:

- **Audit of the internal control system at UCT Prague**
  In compliance with the defined task, the internal audit examined the internal control system at UCT Prague in terms of its fundamental components: control environment, quality assessment system, risk management system, control activities, information flow and monitoring. The internal audit resulted in the finding that all areas of the control system are continuously being optimised in compliance with the internal and external legislation. For each area there were given recommendations related namely to optimisation of the activities of the Department of Quality Evaluation, effective organisation of risk management and introduction of annual plans of internal control at UCT Prague.

- **Internal audits and controls at UCT Prague**
  The extraordinary internal audit analysed the organisation and the powers of the internal audit and internal control at UCT Prague and at some selected public higher education

institutions. The internal audit resulted in the finding that within UCT Prague it is possible to optimise the organisation, job description and the related documents of the Department of Internal Auditing and the Department of Supervision. The audit also showed the need to update the Statute of the Department of Internal Auditing of UCT Prague and the Internal Auditing Manual. The possibility of merging the Department of Internal Auditing with the Department of Supervision was assessed in detail.

- **Audit of the system of inventory-taking of assets, liabilities and receivables at UCT Prague**
  Internal audit also examined the inventory-taking of assets, liabilities and receivables at UCT Prague in terms of efficiency of the entire inventory-taking process. The internal audit resulted in the finding that inventory-taking is performed at UCT Prague as planed and incompliance with the internal and external legislation, the involved units of the Finance Department and all inventory-taking committees perform their work with high competence and responsibility. For each area of inventory-taking there were given recommendations, of which the most important one was the need to radically decrease the number of useless items of long-term assets.

- **Audit of creation and control of the budget of the Administration of University Facilities of UCT Prague**
  Internal audit assessed the preparation of and compliance with the operation and investment annual budget of the Administration of University Facilities for the year 2021, assessed their link to the Strategic Intent of Educational, Scientific, Research, Development, Innovation, Artistic or Other Creative Activities of UCT Prague 2021+ and examined compliance with external and internal legislation for creation of budgets and the internal control of utilization of funds. The internal audit resulted namely in the finding that the planned budget resources of the Administration of University Facilities took into account in the assessed period the external and internal conditions, which even during the state of emergency caused by COVID-19 resulted in relatively reliable planning. Therefore, it was possible to regulate cost items so that the achieved results would not lead to a dramatic financial loss. Based on the audit it was recommended to update the internal standard Organisational Rules of the Administration of University Facilities of UCT Prague.

The **Department of Supervision** in the year 2021 checked the funds provided by the Research, Development and Education Operational Programme reg. no. CZ.02.1.01/0.0/16_017/0002654, "INMODOS" and during the inspection they focused on expense transactions in utilisation of public funds. They inspected preliminary controls upon claims, expense documents pursuant to internal documents and agreements made within the INMODOS project. The inspection showed that preliminary control within the INMODOS project is well set up and no system fault was identified. As in the previous year, inspection of payment of receivables and the related reminders was performed for the period January – November 2021 in the Supplementary Economic Activity Records unit of the Finance Department. Part of the control was to verify the system set up in the previous year. These measures proved to be functional. The control was exercised on financial funds allocated within the centralized development programme for public higher education institutions for the year 2020. A subsequent control showed that the performed

financial transactions complied with the Act on Financial Control in Public Administration and on the Amendment to Some Acts, as well as with internal documents of UCT Prague.

The following financial controls were performed at UCT Prague in the year 2021:

- Control by the Ministry of Culture – the control was carried out by mail due to the escalating Covid pandemic; utilization of public funds allocated to research and development and provided for the project DG18P02OVVV062 in the year 2020; the control started on 1 February 2021. No faults were identified.
- Control by the Ministry of Industry and Trade – financial controls of utilization of a subsidy for the years 2018 -2020 provided for the support of research and development projects. The control involved the projects reg. no. FV40430 (01/2021), FV30300 (04/2021) and FV40393 (11/2021). All controls were by mail. No faults were identified.
- Control by the Ministry of Education, Youth and Sports – financial control of utilization of funds from the state budget, chapter 333, provided from the subsidy programmes Support to Gifted Students of Elementary and Secondary Schools in the Year 2020 and Support to National and International Rounds of Competitions and Shows in Interest Education for the Year 2020 – on-site control at UCT Prague. The control involved the projects reg. no. 0040/7/NAD2020 and 0125/8/SOU/2020 for the period 2020. The control started on 16 November 2021. The control identified a breach of budgeting rules at the amount of CZK 19,000.
- Control by the Ministry of Education, Youth and Sports, Department of OP Control – control under Section 8a of the Act on Financial Control in Public Administration and on the Amendments to Some Acts (the Act on Financial Control) no. 320/2001 Coll., as amended, of the project funded from the Research, Development and Education Operational Programme reg. no. CZ.02.2.69/0.0/0.0/18_056/0013354. The onsite control started on 23 November 2021. No faults were identified.
- Control by the Technology Agency of the Czech Republic, financial control of project – combined correspondence and physical form in the seat of UCT Prague, the controlled project was reg. no. TK01030128 for the implementation period 2018 – 2020, the control started on 10 February 2021. The control found out that another participant, LISS, a.s., did not present during the control a valid internal regulation for accounting of stock and binding methodology proving that full cost method had been applied to calculate overhead cost. The other participant thereby committed a breach of Article 17 para 7 letter a) of the General Terms and Conditions of the Agreement, because the reported overhead costs did not comply with the conditions under which the subsidy had been granted.
- Control by the Technology Agency of the Czech Republic, public administration control of project – onsite control at UCT Prague and onsite at another participant, VÚTS, a. s., the controlled project was reg. no. TJ02000143 for the current implementation period (2019 – 02/2021), control started on 27 April 2021. Based on the financial control of the project reg.no. TJ02000143 named “Marbles Dispenser for Preparation of Liquid Balls” it was found out that the works on the content part of the project were completed as planned. It was also found out that part of the provided funds was used by the recipient to pay non-eligible costs, which

amounted to CZK 247,899.71, of which CZK 210, 574.18 were paid from the subsidy. UCT Prague protested against the findings, but the objections were rejected.

- Control by the Technology Agency of the Czech Republic, public administration control of project – control in combined physical form both in the seat of the recipient, Centrum výzkumu Řež s.r.o., and in the seat of another participant, the control involved project reg. no. TK02030024 for the period 2019 – 2021, the control started on 7 October 2021. No faults were identified.

- Control by the Technology Agency of the Czech Republic, public administration control of project– control in combined physical form both in the seat of the recipient, Centrum výzkumu Řež s.r.o., and in the seat of another participant, the control involved project reg. no. TK02030023 for the implementation period 2019 – 2021, the control started on 1 December 2021. No faults were identified.

- Control by the Technology Agency of the Czech Republic, financial control of project – onsite control in the seat of the recipient, UCT Prague, the control involved project reg. no. TH02030874 for the implementation period 2017 – 2020, the control started on 8. 12. 2021. The control found identified at another participant, GEOtest, a.s., non-eligible costs in the year 2018 at the amount of CZK 6,957.44, of which CZK 4,497.29 were paid from the subsidy.

- Control by the Office of the Government of the Czech Republic, public administration control of project – control in correspondence form, the control involved examination of conditions stipulated by the Decision on Financing Antidrug Policy Programme from the State Budget for the Year 2020. the control involved project no. AA-07-20, the control started on 4. 11. 2021. No faults were identified.

- Audit of transaction no. OPPIK/2021/O/021 performed by the Audit Authority of the Ministry of Finance in a combined form in the seat of the main recipient, Vavex 1990 s.r.o., and in the seat of UCT Prague. Audit of request for payment no. CZ.01.1.02/0.0/0.0/15_019/0004801/2018/003/POST at the amount of CZK 772,594.80 was started on 27 April 2021. No faults were identified.

The utilization of subsidy of the year 2021 for applied research and development projects funded by the Ministry of Industry and Trade of the Czech Republic within the TRIO Programme is subject to audit by an independent auditor. Costs of the projects reg. no. FV30114; FV30300; FV40103; FV40151; FV40053; FV40392; FV40158; FV40201; FV30483; were audited by the firm CS AUDIT s.r.o. based on an audit agreement. The remaining 4 projects, whose part is being implemented at UCT Prague, were audited by an independent auditor at the place of the main recipient of the subsidy granted for the project implementation.

Utilisation of subsidy for the whole implementation period of research and development projects funded by the Ministry of the Interior are subject to audit by an independent auditor. Costs of the projects reg. no. VI20172020075; VI20172020109 were audited by the firm BT Audit, s.r.o. based on an audit agreement.

In connection with the obligation of all public higher education institutions to perform an audit of the financial statements for the given year, the company Interexpert Bohemia spol. s r.o. was selected in a tender.

10) National and international excellence

a) International and significant national research, development and creative activity, integration of research infrastructure in international networks and involvement of the school in professional networks

UCT Prague engages in partnerships and activities within large research and development infrastructures. Such partnerships are a tool for deeper integration in the European research space and they are important for increasing competitiveness of research teams and the school as a whole.

In the year 2021 teams of UCT Prague engaged in the form of consortium agreements in the following big infrastructures:

EATRIS-CZ	Czech National Node to the European Infrastructure for Translational Medicine	Consortium member	prof. Ing. Tomáš Ruml, CSc.	https://www.vyzkumne-infrastruktury.cz/biomedicina/eatris-cz-2/
ELIXIR-CZ	Czech National Infrastructure for Biological Data	Consortium member	doc. Ing. Vojtěch Spiwok, Ph.D.	https://www.vyzkumne-infrastruktury.cz/biomedicina/elixir-cz/
CZ_OPENSCREEN	National Infrastructure for Chemical Biology	Consortium member	doc. Mgr. Daniel Svozil, Ph.D.	https://www.vyzkumne-infrastruktury.cz/biomedicina/cz-openscreen-2/
CATPRO	Efficient Use of Energy Resources Using Catalytic Processes	Consortium member	doc. Ing. David Kubička, Ph.D.	https://www.vyzkumne-infrastruktury.cz/energetika/catpro/
METROFOOD-CZ	Infrastructure for Promoting Metrology in Food and Nutrition in the Czech Republic	Consortium member	prof. Ing. Jana Hajšlová, CSc.	https://www.vyzkumne-infrastruktury.cz/biomedicina/metrofood-cz/

EATRIS-CZ is one of the largest distributed research infrastructures in the Czech Republic and incorporates the most important centres of biomedical research in the Czech Republic. EATRIS-CZ provides cutting-edge research infrastructure and expertise along the entire translational value chain. Through 5 interrelated product platforms, EATRIS-CZ enables the development of drugs, vaccines and diagnostics to reach “the first-in-human application” and clinical “proof-of-concept” verification. The platform provides capacities for multidisciplinary research and development in key technologies (genomics, proteomics, metabolomics, high-capacity testing, complete drug development, molecular imaging and radiopharmaceuticals, early phase clinical trials and regulatory expertise). EATRIS-CZ also offers a wide range of its services, patient cohorts, interactions with key experts in research, industrial development and regulation. The EATRIS-CZ network also includes accredited centres with the possibility of producing and testing products in good manufacturing practice and good laboratory practice. EATRIS-CZ outcomes have led to a number of national and international projects, scientific publications, patents, clinical trials, the development of software tools and databases for clinical and preclinical data management,

cooperation with industrial partners and the development of specialized molecular diagnostics that allows for the practical implementation of personalized medicine in the Czech Republic.

ELIXIR-CZ is an open access research infrastructure for organizing, storing, sharing and facilitating the interoperability of data for further processing and analysis. It provides advanced tools and workshops that are related to data usage and provides specialized databases and tools for analysing biological data. The uniqueness of ELIXIR-CZ lies in the distinctive interconnection of expert teams of the consortium members providing operation of the offered services with e-infrastructure services providing technical solutions. ELIXIR-CZ is a national node contributing to the European research infrastructure for biological data *ELIXIR (European Life-Science Infrastructure for Biological Information)*. The platform ensures connections on the highest possible level and integration with other biomedical research infrastructures. It is a complementary and synergic research infrastructure for most biomedical research infrastructures operating at the national level in the Czech Republic.

CZ-OPENSCREEN operates the most advanced research infrastructure for basic and applied research in the fields of chemical biology and genetics in the Czech Republic and provides open access to its external users. Thereby it supports this new interdisciplinary research which bridges traditional natural sciences such as cell biology, molecular and structural biology, biochemistry, organic chemistry and chem/bioinformatics. The main focus of CZ-OPENSCREEN is to identify new molecular probes and to develop new tools for the research of chemical compounds as candidates for the development of new therapeutics; it also focuses on non-validated molecular targets, signalling pathways and neglected diseases. To those users from the biological and chemical community, CZ-OPENSCREEN offers standard biological and biochemical assays, in cooperation with users also development of new assays, high-throughput screening (HTS), profiling of chemical compounds on a panel of cell lines and medicinal chemistry optimization of newly identified biologically active compounds. CZ-OPENSCREEN is systematically building a library of chemical compounds including both diverse commercially available compounds as well as compounds synthesized in the Czech Republic.

CATPRO is a research infrastructure that focuses on the operation of research and development facilities related to the efficient use of carbonaceous raw materials through catalytic processes. One of the greatest challenges facing research and development in the field of transforming carbonaceous energy resources (including the use of biomass) for the production of advanced liquid fuels is that of transferring results achieved in the laboratory to the industrial sphere. CATPRO is proficient at enabling nearly all research, development and innovation activities necessary to overcome this barrier and that are necessary for the development of heterogeneous catalysts and catalytic processes. CATPRO provides expertise and services that include catalytic synthesis, intensification of catalyst preparation, catalyst shaping, testing and development, pilot scale catalytic testing and analysis, and identification of complex mixtures of reaction products. CATPRO´s activities concentrate research facilities for testing, synthesis and analytical characterization of catalysts, while testing devices are operated under real conditions and in continuous operation.

METROFOOD-CZ is a new and unique research infrastructure in the field of food and nutrition. Its main objective is to operate and promote new interdisciplinary research from primary agricultural production, food processing and technology to the areas of quality, authenticity, safety and traceability of food, raw materials, food products and supplements. The platform enables not only the use of top instrumentation for agricultural products and food analysis, the possibility of conducting experiments in experimental fields and stables, the development of new food products and the verification of innovative technologies, but also provides top experts in the agro-food sector and corresponding metrology. METROFOOD-CZ focuses on the development and validation of analytical methods for determining the quality, safety and authenticity of food, feed and raw materials, and the preparation of new reference materials for quality assurance in the field of food and natural products analysis. Within open access, METROFOOD-CZ offers its unique experimental and instrumental capacities to research and application users in the form of expert analyses, the use of unique analytical instrumentation, the development of new products and the testing of hygienic-toxicological, nutritional and sensory quality of food.

It is also important for UCT Prague to participate actively in the **EERA_CZ** project, which enables participation of Czech research organisations in the European Energy Research Alliance (EERA) and their membership in the consortiums of the Horizon 2020 programme. The structure creates a network of coordinators of energy research in the areas of joint programmes.

In the year 2021 UCT Prague was an active member of various international organisations working in the educational, scientific and research fields. The memberships in international associations broken down by individual faculties, non-faculty departments and the entire school, are clearly summarized in the following table:

Faculty	Number of memberships	Number of persons
FCT	30	21
FET	15	11
FFBT	55	63
FCE	7	7
Other non-faculty departments	1	2
TOTAL	**104**	**106**

Memberships of employees in professional national associations in the year 2021 for the individual faculties, other non-faculty departments and for the entire school are provided in the following table:

Faculty	Number of memberships	Number of persons

FCT	203	60
FET	45	62
FFBT	39	105
FCE	67	61
Other non-faculty departments	39	38
TOTAL	**393**	**326**

Besides professional associations, organisations and groups, in 2021 UCT Prague was also member of the following technology platforms:

Technology platform name	Acronym	Field	Established	Guaranteeing part of UCT
Česká technologická vodíková platforma (Czech Hydrogen Technology Platform)	ČTVP	Energy	2005	FCT
Česká membránová platforma (Czech Membrane Platform)	CZEMP	Membrane processes	2005	FCT
Czech Nuclear Education Network	CENEN	Nuclear energy	2005	FET
Česká technologická platforma pro potraviny (Czech Technology Platform for Foodstuffs)	ČTPP	Food production	2005	FFBT
Česká technologická platforma pro udržitelnou chemii (Czech Technology Platform for Sustainable Chemistry)	ČTP SusChem	Chemistry	2005	FFBT, FCT
Česká technologická platforma pro užití biosložek v dopravě a chemickém průmyslu (Czech Technology Platform for the Use of Biocomponents in Transport and Chemical Industry)	ČTPB	Biofuels	2008	FET
New European Research Grouping on Fuel Cells and Hydrogen AISBL	N.ERGHY	Hydrogen technologies	2009	FCT
Česká technologická platforma pro ekologické zemědělství (Czech Technology Platform for Organic Agriculture)	CTPEZ	Organic agriculture	2009	FFBT
Národní technologická platforma Asociace NGV (National Technology Platform NGV Association)	NGV	Use of natural gas for vehicles	2009	FET

Technology platform name	Acronym	Field	Established	Guaranteeing part of UCT
Česká asociace pro pyrolýzu a zplyňování (Czech Pyrolysis and Gasification Association)	CPGA	Waste management	2013	FET
Klastr WASTen, z.s. (Cluster WASTen, z.s.)	WASTEN	Waste	2015	FET
Klastr CZECHIMPLANT (Cluster CZECHIMPLANT)	CZECHIMPLANT	Production of medical devices	2017	FCT

b) National and international awards

Some awards were already mentioned in Part A. Annual Report on Activities – Main Part (sections 1.1, 1.3, 4.2 and 5.4). A detailed overview of national and international awards in the year 2021 awarded for achievements in educational, scientific and research areas to students and employees of UCT Prague is provided in the following table.:

Award	Awarded person	Description	Faculty
Crytur 2021 Award – Thesis Supervisor	doc. Ing. Ondřej Jankovský, Ph.D.	Supervisor of the best diploma thesis	FCT
Crytur 2021 Award	Ing. Anna-Marie Lauermannová	Best diploma thesis	FCT
The Czech Silicate Society – Best Diploma Thesis	Ing. Anna-Marie Lauermannová	Best diploma thesis	FCT
Hlávka Foundation Award – Josef Hlávka Award	Michal Lojka	Award for young talented researchers up to 33 years of age	FCT
Young Scientist Award ECerS 2021	doc. Ing. Ondřej Jankovský, Ph.D.	The Early Career Award - The European Ceramic Society	FCT
Young Scientist Poster Award, The 14th international Conference on Solid State Chemistry (SSC) 2021	Ing. Jakub Cajzl Ph.D.	Award for best poster presentation at the conference	FCT
ESEE 2021 BEST POSTER AWARD	Ing. Michaela Plevová	Best poster ESEE 2021	FCT
Best student poster	Ing. Daniel Budáč	Best poster Trendy 2021 Košice	FCT
Best student poster	Mgr. Vojtěch Miloš	Best poster Trendy 2021 Košice	FCT
Best poster	Ing. Martin Ďurovič	Best poster HydrogenDays 2021	FCT
Hans-Walter-Hennicke-Preis	Ing. Soňa Hříbalová	Presentation at the DKG conference (Deutsche keramische Gesellschaft	FCT
Czech Glass Association Award for Diploma Thesis	Ing. Tomáš Pipota	Diploma thesis	FCT

The Czech Silicate Society Award	Ing. Soňa Hříbalová	Award for presentation at the Inorganic Non-metal Materials seminar	FCT
The Czech Chemical Society Medal	prof. RNDr. Bohumil Kratochvíl, DSc.	For long-term dedication to the work for the Czech Chemical Society and for management of the journal Chemické listy	FCT
Rector´s Award	Ing. Ondřej Kundrát, Ph.D.	For outstanding pedagogical activity at UCT Prague	FCT
Rector´s Award	Bc. Jiří Šimánek	For outstanding promotion of the school in sport	FCT
French Embassy Award for Chemistry	Ing. Martin Tlustý	Second place of the Jean-Marie Lehn award for chemistry	FCT
Ivan Dlouhý Award	Ing. Veronika Marková	Best diploma thesis in the field of chemical technology with the use of mathematical modelling	FCT
Ivan Dlouhý Award	Ing. Filip Čejka	Best diploma thesis in the field of chemical technology with the use of mathematical modelling	FCT
Czech Glass Society Award	Ing. Karolína Pánová	Presentation at the Inorganic Non-metal Materials seminar	FCT
IWA Honorary Membership	prof. Ing. Jiří Wanner, DrSc.	For long-term merits in water science and practice and for devoted work for the association	FET
Schulz Medal	prof. Ing. Pavel Jeníček CSc.	For long-term creative research and pedagogical activity in the field of water technology	FET
French Embassy Award "Make our planet great again"	Ing. Markéta Andreides	For scientific contribution of the paper “Optimization of the microaeration for Biogas Desulfurization”	FET
Metrohm 2021 Award	Ing. Miloš Auersvald	Award for the best publication of a young electroanalytical chemist	FET
CzWA President Award	Ing. Barbora Šátková	Second place for the best presentation for authors of up to 35 years of age, Water 2021 Conference	FET
CzWA President Award	Ing. Anna Mágrová	Third place for the best presentation for authors of up to 35 years of age, Water 2021 Conference	FET
Ministry of Education, Youth and Sports Medal, First Class	prof. Ing. Milan Pospíšil, CSc.	For long-term outstanding pedagogical activity	FET
Ministry of Education, Youth and Sports Award	doc. Ing. Petra Lipovová, Ph.D.	Award for outstanding education activity at a higher education institution	FFBT
GA CR President´s Award	prof. Ing. Tomáš Brányik, Ph.D.	Award for outstanding research in biotechnologies	FFBT
Best Presentation Award	Ing. Simona Lucáková	Bažant Postgraduate Conference 2021	FFBT

Julie Hamáčková Award	doc. Ing. Petra Lipovová, Ph.D.	Award for outstanding contribution of female employees of UCT Prague to science, research, pedagogy and innovation	FFBT
Julie Hamáčková Award	Ing. Kamila Zdeňková, Ph.D.	Award for outstanding contribution to promotion of equal opportunities in work relationships and research at UCT Prague	FFBT
Harvey W. Wiley Award 2021	Ing. Kateřina Maštovská, Ph.D.	Award for outstanding contribution to the area of food safety	FFBT
Josef Hlávka Award	Ing. Hana Raschmanová, Ph.D.	Best dissertation thesis	FFBT
Karel Preis Award	prof. Ing. Alena Čejková, CSc., Ing. Anna Miškovská	Award for the best general overview article in the Chemické listy journal	FFBT
AOAC INTERNATIONAL/Eurofins Foundation "Testing for Life" Student Award	Ing. Leoš Uttl	Award for innovative work in analytical chemistry	FFBT
AOAC INTERNATIONAL/Herbalife Nutrition Student Scholarship	Ing. Jakub Tomáško	Support for students in science in the area of analytical chemistry	FFBT
Best Poster Award	Ing. Simona Lencová	Award for the best poster at the conference World Microbe Forum (ASM and FEMS collaboration)	FFBT
AOAC Harvey W. Wiley Scholarship	Ing. Kateřina Šebelová	Support for students in science in the area of analytical chemistry	FFBT
Best Poster Award	Ing. Milada Šolcová	2nd place at the conference Biotech 2020 and 8th Czech-Symposium with Exhibition	FFBT
IUCR Journals Prize for the Best Student Lecture	Ing. Kristýna Adámková	Award for the best presentation at the conference 23rd Heart of Europe Crystallography Meeting (HEC23)	FFBT
Best Presentation Award	Ing. Markéta Šimková	Advanced Analytics in Life Science, Milovy - Interdisciplinary Meeting of Young Scientists 2021	FFBT
Best Poster Award	Ing. Nikola Vrzáčková	3rd place at the conference Biotech 2020 and 8th Czech-Symposium with Exhibition	FFBT
AOAC INTERNATIONAL/SCIEX Rising Star Award	Ing. Klára Navrátilová	Award for outstanding research in food analysis	FFBT
The Parc Awards	Ing. Tereza Boleslavská	Student Choice Award – 1st place	FCE
The Parc Awards	Ing. Jan Jirát	Student Choice Award – 2nd place	FCE
The Parc Awards	Ing. Jakub Petřík	Student Choice Award – 3rd place	FCE
The Parc Awards	Ing. Jiří Kolář	Expert Choice Award	FCE
Karel Štulík Award 2021	Bc. Lenka Filipiaková	Special jury award	FCE

Karel Štulík Award 2021	Bc. Ivan Kopal	Special sponsor award	FCE
STC 2021 Conference	Ing. Jiří Suchan	AGTC Poster prize	FCE
M3S Conference	Ing. Dániel Gardenö	2nd place for the best oral presentation	FCE
Competition for Best Young Author in Spectroscopy 2020	Ing. Karolína Salvadori	1st place	FCE
Bažant PhD Students Conference	Ing. Karolína Salvadori	1st place	FCE
Medical Research and Development 2020	doc. RNDr. Dr. David Sýkora	Honourable mention	FCE
Josef Hlávka Award	Ing. František Králík, Ph.D.	Josef Hlávka Award	FCE
Josef Hlávka Medal	prof. RNDr. Štěpán Urban, CSc.	Josef Hlávka golden medal	FCE
2021 ISAL Distinguished Early-Career Investigator Award	doc. Ing. Jitka Čejková, Ph.D.	Award for young researchers	FCE
Metrohm 2021 Award	Ing. Marie Švecová, Ph.D.	Award for best publication of young electroanalytical chemist in the section of UV-VIS-NIR spectroscopy and Raman spectrometry	FCE
Rector´s Award 2021	prof. RNDr. Bc. Petr Slavíček, Ph.D.	For outstanding research outcomes and successful science communication	FCE
2021 Humboldt Alumni Award	RNDr. Michal Kolář, Ph.D.	Experience sharing platform to foster a better academic culture	FCE
AAPS PharmSci 360 AAPS	Ing. Ondřej Navrátil	Best Abstract Award	FCE
AAPS PharmSci 360 AAPS	Ing. Erik Sonntag	Best Abstract Award	FCE
SVOČ 2021 in mathematics and informatics	Ing. Lukáš Šatura	3rd place in the section "Applied mathematics – numerical analysis and mathematical models of dynamics"	FCE
Rector´s Award	Doc. RNDr. Ing. Hana Scholleová, Ph.D.	Rector´s award for outstanding pedagogical activity at UCT Prague	School of Business
Medal of the Minister of Industry and Trade	Ing. Ivan Souček, Ph.D.	Medal of the Minister of Industry and Trade for merits in the chemical industry	School of Business

c) International assessment of the school or its part, including foreign accreditations

In the year 2021 UCT Prague was again actively involved in international rankings of quality of universities in order to obtain comparison with similarly oriented higher education institutions in the Czech Republic and abroad.

In the international Times Higher Education World University Rankings (THE WUR) the school was among the best world universities on the place 1201+. Of eighteen Czech universities which appeared on the published list of 2,112 best universities in the world, UCT Prague ranked ninth, which was two places below the previous year.

In addition to the world ranking, UCT Prague ranked also in the regional THE Emerging Economies, which evaluates developing countries of several types. In 2021 UCT Prague improved in internationalisation and income from industry and slightly deteriorated in the evaluation of teaching, research and citations and in the total number of points. This resulted in a dropdown from the group 301-350 to the group 351-400. The methodology of this ranking is many aspects identical to the world ranking. The biggest difference is lower weight of citations and higher importance of internationalisation of universities and income from industry.

ARWU, also known as "Shanghai ranking", collects data only from publicly available sources without sufficient information and assistance from the individual universities. In the year 2021 the ranking evaluated again seven Czech universities. In the year 2020 UCT Prague occupied the position 901-1,000 in the world; in the year 2021 it did not make it among to the top 1,000 universities.

In QS University Rankings Emerging Europe and Central Asia (EECA) UCT Prague occupied a 62nd position among the top 450 best institutions, which meant it was seventh of the eighteen evaluated Czech universities. This represents an improvement by 2 positions in comparison to the previous year.

UCT Prague was successful in confirming its position in the QS World University Rankings. The first time it ranked there was in the year 2019 and it improved its position the year after. The third time it managed to keep its position of the second best evaluated Czech university by sharing the 373th place in 2021. The good ranking is mostly due to the low number of students per one academic worker. Individual support during education and natural involvement of students in research brought UCT Prague to the 26th place in the world and first in the Czech Republic.

UCT Prague has been taking part in institutional ranking of U-Multirank for five years. The university also takes part in field of study rankings, however in this year´s offer there was no appropriate study programme to link to. In general, field of study rankings include a student survey, which is one of the sources for final assessment of the study programmes included in the given field of study. The outcomes of such survey serve as a feedback from students which can be used to improve the quality of the instruction as well and of the study conditions. In the year 2021 UCT Prague received 11 assessments of "A" type, which was the highest number among Czech universities.

Comparing of quality of universities based on indicators calculated in the individual rankings is one of the sources of information for ensuring a comprehensive evaluation of the university and can serve as an impulse for the university management to adopt measures for maintaining the

high quality of the main activities of the university and possibly to adopt measures to strengthen its performance in the areas where space for improvement has been identified

11) Third role

a) Activities and results in the area of transfer of findings to practice

Traditionally and for a long time, UCT Prague belongs to higher education institutions with the most intensive collaboration with industry both in the Czech Republic and abroad. This is evidenced by one of the highest shares of supplementary business activity including applied research and experimental development, consultancy and educational activities for industry, which represents almost 4% of the total annual budget of the university (for more details see Chapter 8 e, f). Knowledge transfer to practice is in the form of direct contract research and development activity financed from non-public funds as well as in the form of expert consultations and counselling and training courses deepening the qualification of employees of entities operating in the application sphere. In case of research activities within the framework of supplementary business activity, UCT Prague strives to maximum extent apply the policy of contract-based share in the delivered commercializable outcomes, which in most cases means very demanding and tough negotiations with the other party to the contract paying for the research from their own funds and not very open to agreements on the university´s future co-ownership of the intellectual property. Partnership of UCT Prague with the application sphere within projects of applied research paid from public funds (Technology Agency of the Czech Republic, Ministry of Industry and Trade, Ministry of Agriculture) is a different story. In these projects, knowledge transfer between the university and the partner from the industrial practice is based on an agreement on use of the resulting know-how and negotiating the terms and conditions of the agreement is usually easier than in case of supplementary business activity.

The **Faculty of Chemical Technology (FCT)** closely cooperated in the year 2021 with chemistry, materials, automobile, electrotechnical and energy oriented commercial entities. The cooperation was based partly on contract research, partly on wider joint projects co-financed from public funds. The obtained outcomes serve primarily to strengthen the innovation process in the industrial sphere and to transfer the knowledge acquired within the research sphere to the industrial practice. This process significantly enhances the competitiveness of national commercial entities within the framework of global economy. As far as professional structure is concerned, the shared knowledge incudes the areas which are characteristic of the FCT research base. That means primarily material engineering and chemical technologies focused on increasing effectiveness and energy and raw material efficiency, human health, namely pharmaceutical technologies and biomaterials, but also protection and improvement of environment.

A wide range of recipients of the outcomes of the research and development carried out at the faculty represents a dynamic set of commercial entities, including e.g. ORLEN Unipetrol, Škoda Auto, Preciosa, TEVA, Zentiva, AGC, ČEZ, ÚJV Řež and others. Then there is a variable group of

commercial entities participating in collaborative projects funded by the European Union within the framework programme H2020. These provide a wider, or even global, framework to the cooperation of FCT with commercial entities.

In addition, FCT workers significantly contribute (despite the anti-epidemic restrictions) to the promotion of new research trends and outcomes both within the professional community and among general public. A typical example would be active involvement in organizing national and international conferences and professional meetings. The faculty prepared or participated in the preparation of, for example, “Hydrogen Days 2021” (24 – 25/03/2021, Prague), “29th Topical Meeting of the International Society of Electrochemistry” (18 – 21/04/2021, Mikulov), “ICCT 2021“(03 – 05/05/2021, Mikulov) and “24th AKI Conference AKI” (20. - 22. 10. 2021, Tábor).

FCT departments also participated in research aiming at fighting the COVID-19 pandemic or its impacts. For example, we can mention a project focused on functional photoactive antimicrobial surfaces, cooperation in the development of sensors for epidemiological monitoring of viral respiratory diseases, or the use of ozone for decontamination of air and surfaces.

The **Faculty of Food and Biochemical Technologies (FFBT)** has been for a long time an important partner for cooperation with a number of entities in the food or biotechnological application sphere, which includes international companies as well as medium to small businesses. Important partners include, for example, Polabské mlékárny a.s., Hamé s.r.o., Fruta Podivín a.s., Oxalis, spol. s.r.o., Mondelez CR s.r.o., Madeta a.s., Mlékárna Olešnice a.s., Ecofuel Laboratories s.r.o., Penam a.s., Dekonta a.s., Plzeňský Prazdroj a.s., Budějovický Budvar n.p., Pivo Praha s.r.o., Pivovar Holba a.s., Pivovar ZUBR a.s., Biomedica s.r.o., EPS s.r.o., Orkla Foods Česko a Slovensko, Contipro a.s., Bidfood s.r.o., Coca-cola HBC Česko a Slovensko, s.r.o., VITAVE Tech s.r.o., Rawvolution s.r.o., GoodMills Česko s.r.o., Lyckeby-Amylex a.s., Emco, s.r.o., Pražská čokoláda Steiner & Kovařík s.r.o., Rabbit, s.r.o., Mrazírna Vestec, AGRO Jesenice u Prahy a.s., Chemservis spol, s.r.o., UNITED BAKERIES a.s. and many others. Cooperation with state authorities should be mentioned as well, such as collaboration with the Czech Agriculture and Food Inspection Authority, the National Institute of Public Health, State Veterinary Institute, etc.

The cooperation of FFBT with external partners was oriented in 2021 towards technology innovations, special analyses, biochemical or microbiological tests, advice, expert examination, consultation and assessment activities, namely in the area of biochemical, biotechnological and food processes and biomonitoring. Extensive cooperation of FFBT with the application sphere was conducted in the areas of human health, preparation of biologically active compounds, environmental biotechnologies, recycling of industrial waste, environmentally friendly biotechnologies for the production of renewable sources of energy, production of food and enhancement of its nutrition value, including quality control, safety, authenticity and sensory quality of food or biomonitoring of humans.

In these areas FFBT delivered to external partners various trainings, provided consulting and performed a number of expert examinations and analyses. Important activities included also implementation of certified methodologies, proven technologies, innovation of pilot operations,

creation of prototypes or functional samples (10 outcomes in total). There were granted 2 patents (without implementation) and 3 utility models and industrial design (with implementation and financial benefit).

Also, three accredited laboratories of the faculty were significantly involved in cooperation with external partners by carrying out certified analyses of food, food supplements and natural substances, microbiological assessment of food and water and determination of presence of GMO´s in food and raw materials, as well as testing of properties of packaging materials in terms of their impact on the quality of the food.

Awareness campaigns and informing the general public in mass media on food quality and safety, as well as active work of the faculty´s representatives in government agencies (e.g. the Food Industry Chamber of the Czech Republic, Ministry of Agriculture, National Innovation Platform) and professional societies.

In the year 2021 FFBT also organized a number of national and international events, which were almost all carried out on-line due to the epidemic situation. The most important events in terms of number of participants include “Virtual event highlighting current Trends & Views on Recent Advances in Food Analysis (RAFA 2021)” with 1,600 participants and the international on-line conference “The BioTech 2020 and 8th Czech-Swiss Symposium” (200 participants), which was moved from the year 2020 to the year 2021. Selected papers from this conference were published in a special issue of the journal Biotechnology Advances (IF 14.227).

Other events included e.g. an instructive workshop “Microbial Ecology in Bioremediation” for students of the Lille University (France), “17th International Conference on Polysaccharides and Glycoscience”, “58th International Conference on Oils and Fats”, “CzechFoodChem 2021 - Symposium on new trends in food production and assessment“, “Safe nutrition 2021 – Trends in cereals technology“, or a series of events organized by EIT Food Hub Czech Republic focused on support for students and entrepreneurs, the aim of which is to promote innovation in agriculture and food industry.

Some events which were held in-person included e.g. “108th Cosmetology seminar” (in cooperation with the Czech Society of Cosmetology) or the “40th Brewing and Malting Seminar” (in cooperation with the brewery Plzeňský Prazdroj a.s. and the Research Institute of Brewing and Malting).

Employees of UCT Prague also took part in the preparation of the second edition of the text book on the theory and practice of beer production “Pivovarství - teorie a praxe výroby piva” (chief editor Gabriela Basařová †). There could be mentioned also the preparation of a number of popularisation and professional publications, e.g. publications of the Czech Technology Platform for Foodstuffs “Obiloviny v lidské výživě - Inovace a nové trendy v cereální technologii” (Cereals in human nutrition – Innovations and new trends in cereals technology).

FFBT was also significantly involved in activities related to mitigation of impacts of the pandemic caused by the coronavirus SARS-CoV-2. These were namely research projects

financially supported by (I) the Ministry of the Interior, “Biosensors for epidemiological monitoring of viral respiratory diseases “(2021-2022) and (ii) TACR, “Technologies for removal of antibiotic resistance from waste water treatment sludge applied in agriculture” (2020-2023). Within the second project, an accredited method for determination of virus in waste waters was prepared as one of the outcomes. Presence in mass media can be mentioned as well, which involved e.g. assessment of contamination of respiratory masks by microorganisms in case of improper use. Furthermore, FFBT students worked as volunteers, assisting in clinical laboratories for SARS-CoV-2 diagnostics.

Traditionally, the activities of research groups of the **Faculty of Chemical Engineering (FCI)** result in a number of outcomes which are applicable in practice. One of the examples of technologies used in practice in the year 2021 is the Interphase Mass Transfer Laboratory headed by prof. Dr. Ing. Tomáš Moucha (Department of Chemical Engineering), which developed a device to measure concentration of hydrogen in the primary circuit of the nuclear power plant Dukovany. A functional sample of this device was successfully verified by experimental tests in Dukovany. Based on the tests, development of a final prototype will follow. Another example: the Department of Analytical Chemistry developed a set of certified methodologies for detection of peroxide explosives, contactless collection of odour traces and for introduction of digital odour signature as evidence in proceedings. These methodologies, which were certified by the Police Presidium of the Czech Republic, are of high practical importance for forensic practice.

FCI units also took part in research fighting against the COVID-19 pandemic or its impacts. The research team of doc. Ing. Vladimír Scholtz, Ph.D. (Department of Physics and Measurement) continued in further enhancement of a device he had developed for generating low-temperature plasma to disinfect face masks and respirators for their repeated use. The aim was to increase the disinfection efficiency and to characterize the effects for various microorganisms by analysing active compounds of the plasma, to adjust the device for easier application in other situations and also to map degradation of sensitive materials that might be interesting in terms of their disinfection, e.g. electronic devices and parts, paper, etc. In cooperation with private sector there was created a prototype of a commercial device for low-temperature disinfection of various objects. In connection with the COVID-19 pandemic, Ing. Ondřej Kašpar, Ph.D. (Department of Chemical Engineering) from the Laboratory of Biomimetic Engineering focused one of his research projects on the development of a new hygienic disinfectant based on microparticles with prolonged protective effect which would not contain alcohol. The aim of that project is also to prepare rigorous methodology of mechanical and antibacterial testing of such products, which should help in objective testing across various workplaces. Employees of the Department of Computing and Control Engineering developed software for automated analysis of CT images of patients with COVID-19. The software was provided to the Radiodiagnostics Clinic of the hospital Fakultní nemocnice Královské Vinohrady v Praze.

The **Faculty of Environmental Technology (FET)** communicates findings in the area of environmental issues through a number of conferences, seminars and professional journals under the auspices of FET. Thereby the results of e.g. water and fuel analyses, designs of technical

solutions for environmental protection and assessment of life cycle of products and services found their way to practice. Outcomes in the implementation phase of research and development projects are transferred to practice as well. In the year 2021 this included e.g. development and implementation of a purification device for treatment of waste gasses resulting from the Claus process in sulphur collectors, which was the work of the group headed by doc. Ing. Karel Ciahotný, CSc. (Department of Gaseous and Solid Fuels and Air Protection). The device was produced and now it will be installed in the refinery of PK Orlen in Kralupy. The production and installation are done by the company Trox Příbram. It is an adsorption unit which will be able to catch not only sulphur vapours but also residual concentrations of H2S and SO2 coming out together with sulphur from the Claus unit. Another example was the cooperation of the group headed by prof. Ing. Vladimír Kočí, Ph.D. MBA (Department of Environmental Chemistry) who within contract research processed life cycle analyses for the cluster WASTen. Those were projects of assessment of environmental impact of new technologies using waste materials and assessment of the use of miscanthus on post-mining sites with subsequent use of biomass in paper industry and for the production of biochar. Furthermore, studies of environmental impact assessment for plastic packaging material used for yogurt products were carried out for the Plastic Cluster and for food supplements for My Trime.

Within the framework of **knowledge transfer to practice in connection with COVID-19 pandemic**, FET was granted a patent for a device removing pathogens from air (authors doc. Ing. Tomáš Hlinčík, Ph.D., doc. Ing. Pavel Ulbrich, Ph.D., prof. Ing. Milan Pospíšil, CSc.). It is a device which is able to remove safely pathogens from air when air-conditioning and ventilation are used, which is the case of a number of sites including offices, trains or airplanes. The principle of the device consists in high-temperature elimination of pathogens, e.g. viruses or bacteria, by using a metal grid made of resistance wires. The device was developed in reaction to the coronavirus SARS-CoV-2 pandemic in the year 2020 and the patent was granted in the year 2021. The group headed by prof. Ing. Jan Bartáček, Ph.D. (Department of Water Technology and Environmental Engineering) intensively worked on monitoring of the presence of the SARS-CoV-2 virus in waste water in the Prague sewer network and in the waste water from elementary schools and nursing homes. The results showed that waste water monitoring can perfectly describe the scope of the epidemy and its progress in individual schools and is more effective than indiscriminate use of antigen tests, especially in the time when the epidemic is retreating.

Knowledge transfer to practice, obtaining and coordinating of cooperation of the university with practice, including commercial research and development, is supported also by **Technopark Kralupy**. Unlike the vast majority of technology parks in the Czech Republic, it does not offer research premises to external entities Kralupy, but is ready to offer its contract partners variable and operative research services in the areas of chemical technology and material research precisely specified according to the partner´s requirements, the so-called tailor-made research, engaging young researchers managed by experienced experts from practice. Its management and organisation are fully adjusted to the needs of commercial research.

b) Regional presence

Cooperation with the Prague municipality was traditionally focused on coordination of activities oriented towards promotion of Prague abroad as a university city with top research. However, in general and in long term, cooperation with the Prague authorities is significantly less intensive than it tends to be in other regions.

UCT Prague is traditionally very active in communicating chemistry and other natural sciences and technical fields. In the year 2021 popularization events were organized (see Part C Chapter 2c Other educational activities implemented in 2021 and Part A Chapters 5 and 8) with impact not only on the Prague region, but also on the Central Bohemia region and the Ústí nad Labem region. UCT Prague is a patron of more than 30 secondary schools not only in Prague, but also in all regions of the Czech Republic. The University of the Third Age also ranks among successful science communication events with positive impacts on the region.

In the year 2021 UCT Prague was again actively involved in the project of innovation vouchers in Prague and the Central Bohemia region, whose aim is to support collaboration between businesses and higher education institutions or research organisations. An entrepreneur receives an innovation voucher, which is a one-time subsidy for cooperation with a provider of knowledge, such cooperation being based on knowledge transfer in the form of purchase of research and development services. Technopark in Kralupy nad Vltavou plays an important role in the implementation of the innovation vouchers project.

There was also cooperation with the Prague City Hall represented by Institut plánování a rozvoje (the Institute of Planning and Development) and with the authorities of Prague 6 district in searching a solution for the development of the Dejvice Campus of higher education institutions and development on the square Vítězné náměstí (design of transport, preparation of a transport-free and leisure zone in the Technická street, co-organisation of cultural and sport events). UCT Prague also actively cooperates with town representatives in Kralupy nad Vltavou, where UCT Prague runs the technology park Technopark Kralupy in whose modern facilities popularization and educational activities are organized for elementary and secondary schools as well as for public in general. Similarly to the year 2020, popularization activities in the year 2022 were rather limited because of the restrictions caused by the COVID-19 pandemic.

In the year 2021 intensive cooperation with the public administration and the regional school system in the Ústí region continued thanks to the University Centre Litvínov of UCT – the Faculty of Mechanical Engineering of CTU – ORLEN Unipetrol and in cooperation with the research centre UNICRE in popularization of chemistry, chemical technologies and other natural sciences and technical fields in the region. Development of activities in the area of the secondary school student competition SOČ and regional chemistry Olympiads.

c) Supraregional presence and importance

Although the seat of UCT Prague is in the capital, it is a higher education institution with significant supraregional impact because most students come from other places than Prague. On average, the applicants for bachelor´s degree study come from the following regions:

Prague	Southern Bohemia	Southern Moravia	Karlovy Vary	Vysočina	Hradec Králové	Liberec	Moravian-Silesian	Olomouc	Pardubice	Plzeň	Central Bohemia	Ústí nad Labem	Zlín	Abroad
22%	3%	2%	2%	2%	4%	4%	4%	2%	2%	5%	20%	7%	2%	20%

For a long time there has been strong representation namely of applicants from Northern and Central Bohemia, which corresponds with the industrial orientation of both regions and also reflects the activities of the University Centre Litvínov UCT – Faculty of Mechanical Engineering of CTU – ORLEN Unipetrol, focused on obtaining applicants for study at UCT Prague. According to our statistics, these are also the regions to which many of our graduates go after their studies.

As for scientific and research cooperation, more than 2/3 of our partners in applied research are from regions outside Prague; therefore, also in this area of activities the impact of UCT Prague is of a supraregional nature. UCT Prague occupies in a number of namely technological fields a unique position within the Czech Republic (e.g. water technology, fuel technology, inorganic technology, biotechnology, food technology). On the labour market the demand for graduates from virtually all study programmes offered at UCT Prague is higher than the current interest to study these programmes, namely there is demand for technologically oriented specialisations. Nevertheless, UCT Prague believes that maintaining university instruction of these “traditional” fields is necessary for educating high quality human resources for the needs of the Czech Republic. If such technical fields disappeared, the Czech Republic would become totally dependent on exclusively foreign know-how.

12) Activities in connection with impact of the pandemic caused by SARS-CoV-2

The pandemic affected the entire school´s operation in the year as well. Fundamental changes regarding the forms of education established in the previous year continued, day-to-day management was affected again and regimes for ensuring the operation of support workplaces were set up. Scientific and research work was affected and the impact of the unfavourable epidemic situation on activities connected with the school´s internationalization was still significant.

a) Educational activity

Educational activity in the years 2020 and 2021 were strongly affected by extraordinary measures adopted by the Ministry of Health Care of the Czech Republic in connection with the unfavourable development of the epidemic situation caused by the incidence of COVID-19 disease. Classes continued to be given as scheduled in the distant form, except for laboratory instruction which was carried out in blocks with a limited number of students in the laboratory, but individual blocks interfered with the examination period. This fact was very inconvenient for students in terms of planning and preparation for exams. Therefore, the first part of the examination period was extended till the first week of July. Teachers were allowed, upon agreement with the respective Dean, to hold exams even during summer holidays. The time schedule of the academic year 2020/21 **A/V/961/16/2020** was several times updated by amendments reacting to the current epidemic situation.

To support distance learning, teachers used the **website "Distance learning at UCT"**, where the necessary information for teachers and students was continuously updated. The systems used for distance learning were e-learning, MS Teams and MS Stream. Teachers used also other internet platforms, e.g. YouTube. An **MS Teams Manual** was created by K3S students (an association of student senates and interest groups), who had actively used the system before and had good experience. In the year 2021 there was used the **informative website "Koronavirus"**, where all current measures valid at UCT were posted.

The winter semester 2021/22 was carried out in the form of in-class lessons under strict hygienic measures. Students who fell ill or had to stay in quarantine for a long time were usually allowed, upon agreement with the teacher, to fulfil study obligations during the semester later and, if necessary, they could extend their examination period.

In spite of all measures, possibilities to use individual consultations and individual approach, the academic failure in the first years of bachelor´s study increased. The reason behind it was underestimation of the workload that university study brings in connection with previous distance learning at secondary schools.

A positive impact of pandemic with forced distance learning was **the creation of new and amendments of the existing support study materials in the Moodle system** (http://e-learning.vscht.cz/), recording of video lectures especially for common core courses and **gaining practical experience with blended learning**, which will probably be used more in the future.

In the second year of pandemic as well, the Counselling and Career Centre made effort to support students and maintain its services available in distant form. All counselling services were available to students online; because of increased demand, this trend continued along with the in person form even when the pandemic restrictions were lifted.

The **project of study group tutoring** (for more details see Chapter 3, paragraph e) for first year students was successfully implemented and was expanded for students of the second year as well to ensure adaptation to the continuing educational process (still partly in the distance form).

During lockdown tutors met with their groups in the form of online conferences; the meetings supported socialisation and motivation to study.

In the spring time senators and tutors kept meeting their fellow students in the form of **Carbonline**, which had been introduced the year before, to discuss the topic of distance learning. The meetings included discussion about circumstances of new restrictions, new rules, advice, tips and tricks, sharing of problems and solutions. Usually they ended up with an informal part.

In May, **Hanami,** the traditional festival to celebrate spring, had to move online as well. That was how it became a festival with a programme focused on mental health support, mental hygiene and emotional resilience - the only one of its kind in the Czech Republic. More information and the programme can be found at http://hanami.vscht.cz/.

Online educational and motivating activities of UCT Prague were mentioned by the Centre for Higher Education Studies as **examples of good practice** in the area of support services connected with the COVID-19 pandemic.

As the pandemic restrictions were being lifted, the school focused on **restart and support of activities of student interest groups**, which had suffered by the fact that due to the coronavirus restrictions new young members did not have the opportunity to take part in traditional student events. Therefore, they didn´t have experience with organizing such events (e.g. school ball) and it was necessary to support their know-how in communal creative activity, which was done in the form of consultations on possible steps and by supporting opportunities to organize cultural events.

One of the reactions to the COVID-19 pandemic was that UCT Prague offered free catch-up lessons of natural sciences to applicants to study and consultations regarding the secondary school leaving exams. Over 300 secondary school students used these two opportunities.

The Department of Education and Human Sciences reacted to the decreasing wellbeing of students and, in cooperation with the Counselling and Career Centre, co-participated in two seminars within the so-called Survival Kit held in hybrid form.

The first lecture was Effective Learning with the aim to familiarize students with effective learning methods, to show how to connect them with chemistry and technical thinking and apply them to learning strategies during the semester.

The second seminar How to Survive the Examination Period covered pedagogical and psychological techniques of effective planning of the examination period and students´ mental health care.

As both seminars were assessed as important, they are planned for the next academic year as well. In the future, the seminars will be complemented with interactive study materials in e-learning.

a) Research activity

Research activities of students and employees of UCT Prague continued to be affected by the bad epidemic situation. Limited lessons and still limited travel opportunities resulted in limited scientific and research activity. However, a number of conferences and seminars were held online.

The following projects related to the topic of SARS-CoV-2 coronavirus were carried out at UCT Prague:

Code	Title	Principal investigator
VI04000090	Biosenzory pro epidemiologický monitoring virových respiračních onemocnění (Biosensors for Epidemiological Monitoring of Viral Respiratory Diseases)	RNDr. Miroslav Ledvina, CSc.
VI04000074	Hodnocení funkčnosti fotoaktivních antimikrobiálních povrchů z hlediska ochrany veřejného zdraví (Methodology for Assessing the Functionality of Antimicrobial Photoactive Surfaces from a Public Health Protection Perspective)	prof. Dr. Ing. Josef Krýsa
VI04000023	Možnosti využití ozónu pro dekontaminaci ovzduší a povrchů nejen složkami IZS ČR (Possibilities of use of ozone for decontamination of air and surfaces not only by the Integrated Rescue System)	Ing. Martin Kuchař, Ph.D.
GF21-39019L	Dekontaminace citlivých materiálů nízkoteplotním atmosférickým plazmatem pro účinnou a dostupnou eliminaci virů (Decontamination of Sensitive Materials by Low-Temperature Atmospheric Plasma for Effective and Affordable Elimination of Viruses)	doc. Ing Vladimír Scholtz, Ph.D.
SS01020112	Technologie pro odstranění antibiotické resistence z čistírenských kalů aplikovaných v zemědělství (Technology for the Removal of Antibiotic Resistance from Sewage Sludge Applied in Agriculture)	prof. Ing. Jan Bartáček, Ph.D.

The method of detection of RNA virus SARS-CoV-2 in waste waters, developed in the last-mentioned project, was used in pilot projects implemented by UCT Prague during the year 2021 in cooperation with Pražské vodovody a kanalizace, a.s. for monitoring of waste waters from selected elementary schools and nursing homes and exhibited very promising results.

b) Third role of the school, including other activties

The involvement of UCT Prague in knowledge transfer to practice in connection with COVID-19 or in mitigation of impacts of the pandemic is described in more detail in Part C, Chapter 11 a.

In 2021, **employees, students and the public** (students´ parents, partner institutions and businesses) **were informed** about the current measures taken by UCT Prague and the rules and organisational issues in the school´s life in connection with the pandemics **via the school´s continuously updated public websites** and social networks, which were at the same time used for coordinating volunteer groups. Internally, instructions, manuals and other information was provided to the respective target groups by e-mail, the school´s channels on social networks and

the EMIL application, such communication channels being effective namely for urgent communications.

The SARS-CoV-2 pandemic continued in the year 2021 to have a significant impact on management of mobilities and internationalization. Employees on business trips and students of UCT Prague during foreign mobilities were provided with **updated information and assistance to ensure such foreign travels and mobilities.** Contact with outgoing mobility students was maintained via remote communication e-tools and the students were provided with **targeted information service and support** and their **situation was monitored in cooperation with the host institutions**. Students visiting UCT Prague within the Erasmus+ programme were provided with a similar information service regarding the current anti-pandemic measures and exchange of information with the sending institution was ensured. During their stay abroad, students of UCT Prague could use remote communication to use the services of the psychologist of UCT Prague.

In connection with the pandemics, **intensive communication** took place **with foreigners – newly accepted employees and students prior to their arrival** from abroad (information on the opening hours of embassies, measures in connection with arrival to the Czech Republic and in the Czech Republic) so that they would be able to start their studies at UCT Prague in time.

Thanks to cooperation with CzechELib (National Licensing Centre for Electronic Information Resources established as part of the National Library of Technology) it was possible in the year 2021 **to use Shibboleth authentication** for a vast majority of electronic information resources (EIR). This technical solution enabled **students and employees of UCT Prague to have easy remote access to most EIR** (i.e. From home, outside the UCT Prague domain) during the lockdown and, at the same time, it prevented overload of the VPN server which started to have such problem. As a result, students were not limited in their access to professional EIR.

The management of UCT Prague also decided **temporarily to provide access to electronic versions of text books** issued by UCT Prague, which facilitated study of students as they did not have the chance to borrow the study materials from the ChemTK integrated library or read the materials there.

During the spring semester 2021, students could already use the entire EIR portfolio although restrictions related to physical access to the UCT Prague domain remained and a vast majority of teaching activities had to face frequent physical absence of students from the institution´s premises for most of the semester.

D. Tables

Tab. 2.1: Accredited study programmes (numbers)

UCT Prague		Bachelor's study programmes		Master's study programmes		Follow-up master's study programme		Doctoral study programmes		TOTAL
		FT	PT/D	FT	PT/D	FT	PT/D	FT	PT/D	
FCT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02	1								1
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	1				3		9	7	20
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	10	1			8		14	14	47
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCT total	X	12	1	0	0	11	0	23	21	68
FET										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	5	1			6		10	10	32
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FET total	X	5	1	0	0	6	0	10	10	32
FFBT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	2				9		14	14	39
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	6	1			4		10	10	31
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FFBT total	X	8	1	0	0	13	0	24	24	70
FCE										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	4				2		8	8	22
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	5	1			7		10	10	33
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCE total	X	9	1	0	0	9	0	18	18	55
Studies outside faculties										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01	1								1
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04	2				2				4
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07									0
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
Studies outside faculties total	X	3	0	0	0	2	0	0	0	5
UCT Prague										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00	0	0	0	0	0	0	0	0	0
Education	01	1	0	0	0	0	0	0	0	1
Arts and humanities	02	1	0	0	0	0	0	0	0	1
Social sciences, journalism and information	03	0	0	0	0	0	0	0	0	0
Business, administration and law	04	2	0	0	0	2	0	0	0	4
Natural sciences, mathematics and statistics	05	7	0	0	0	14	0	31	29	81
Information and Communication Technologies	06	0	0	0	0	0	0	0	0	0
Engineering, manufacturing and construction	07	26	4	0	0	25	0	44	44	143
Agriculture, forestry, fisheries and veterinary	08	0	0	0	0	0	0	0	0	0
Health and welfare	09	0	0	0	0	0	0	0	0	0
Services	10	0	0	0	0	0	0	0	0	0
UCT total	X	37	4	0	0	41	0	75	73	230

FT = full-time PT/D = part-time / distance

Note: * = A faculty or another constituent part of university implementing an accredited study programme.

Tab. 2.2: Study programmes in a foreign language (numbers)

UCT Prague		Bachelor's study programmes		Master's study programmes		Follow-up master's study programme		Doctoral study programmes		TOTAL
		FT	PT/D	FT	PT/D	FT	PT/D	FT	PT/D	
FCT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05					1		4	3	8
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	2				2		7	7	18
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCT total	X	2	0	0	0	3	0	11	10	26
FET										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	2				2		5	5	14
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FET total	X	2	0	0	0	2	0	5	5	14
FFBT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05							7	7	14
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	2				1		5	5	13
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FFBT total	X	2	0	0	0	1	0	12	12	27
FCE										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05							4	4	8
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	2				2		5	5	14
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCE total	X	2	0	0	0	2	0	9	9	22
Studies outside faculties										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04	1				1				2
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07									0
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
Studies outside faculties total	X	1	0	0	0	1	0	0	0	2
UCT Prague										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00	0	0	0	0	0	0	0	0	0
Education	01	0	0	0	0	0	0	0	0	0
Arts and humanities	02	0	0	0	0	0	0	0	0	0
Social sciences, journalism and information	03	0	0	0	0	0	0	0	0	0
Business, administration and law	04	1	0	0	0	1	0	0	0	2
Natural sciences, mathematics and statistics	05	0	0	0	0	1	0	15	14	30
Information and Communication Technologies	06	0	0	0	0	0	0	0	0	0
Engineering, manufacturing and construction	07	8	0	0	0	7	0	22	22	59
Agriculture, forestry, fisheries and veterinary	08	0	0	0	0	0	0	0	0	0
Health and welfare	09	0	0	0	0	0	0	0	0	0
Services	10	0	0	0	0	0	0	0	0	0
UCT total	X	9	0	0	0	9	0	37	36	91

FT = full-time PT/D = part-time / distance

Note: * = A faculty or another constituent part of university implementing an accredited study programme.

Tab. 2.3: Joint/Double/Multiple Degree study programmes implemented with universities abroad	
UCT Prague	
Name of programme 1	**Erasmus Mundus Master in Membrane Engineering for a Sustainable World (EM3E-4SW)**
Partner organizations	University de Montpellier, Universite Toulouse 3 Paul Sabatier, Universidade Nova de Lisboa, Universidad de Zaragoza, University of Twente
Associated organizations	University della Calabria, KU Leuven
Category of programme (Joint/Double/Multiple Degree)	Joint Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	18
Name of programme 2	**Erasmus Mundus International Master in Environmental Technology and Engineering (IMETE)**
Partner organizations	Ghent University, IHE Delft Institute for Water Education
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Joint Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	49
Name of programme 3	**Double Master Degree**
Partner organizations	ENSCR (École Nationale Supérieure de Chimie Rennes), Francie
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	0
Name of programme 4	**Master of Science in Chemistry and Chemical Technologies / Master GPBP – Génie des Procédés et des Bioprocédés**
Partner organizations	(ENSIC) École Nationale Supérieure des Industries Chimiques, Francie
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	0
Name of programme 5	**Master of Science in Biotechnology and Food Science / and Laurea Magistrale in Molecular and Industrial Biotechnology**
Partner organizations	Università degli Studi dell'Insubria, Itálie
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	0
Name of programme 6	**Chemistry, specialization: Organic chemistry / Transition Metals in Molecular Chemistry (T2MC)**
Partner organizations	Université Bourgogne Franche-Comté
Associated organizations	University of Dijon
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	9
Name of programme 7	**Synthesis and Manufacturing of Pharmaceuticals, Specialization Manufacturing of Pharmaceuticals / Life Sciences, Specialization Pharmatechnology or Chemistry**
Partner organizations	University of Applied Sciences and Arts Northwestern Switzerland
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	2
Name of programme 8	**Biotechnology of Pharmaceuticals / Master of Science in Life Sciences**
Partnerské organizace	University of Applied Sciences and Arts Northwestern Switzerland
Přidružené organizace	
Druh programu (Joint/Double/Multiple Degree)	Double Degree
Typ programu (bakalářský, navazující magisterský, magisterský, doctoral)	follow-up master's
Počet aktivních studií k 31. 12.	2
Name of programme 9	**Chemical Engineering and Bioengineering / Chemical Engineering and Biotechnological Processes**
Partner organizations	Università degli Studi di Cagliari
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	follow-up master's
Number of active studies as on 31 January	3
Name of programme 10,11	**Chemie a chemické technologie / Chemistry and Chemical Technologies (FCT)**
Partner organizations	STU Bratislava; KU Leuven
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	0
Name of programme 12,13	**Chemie a technologie materiálů / Chemistry and Technology of Materials (FCT)**
Partner organizations	ENSC Lille; Normandie Université; Universitá Politecnica delle Marche
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	1
Name of programme 14,15	**Chemie / Chemistry (FCT)**
Partner organizations	Normandie Université; Universität Regensburg; Université Bourgogne Franche-Comté; KU Leuven
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	0
Name of programme 16,17	**Chemie a technologie ochrany životního prostředí / Environmental Chemistry and Technology (FET)**
Partner organizations	ENSCR Rennes; KU Leuven
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	3
Name of programme 18,19	**Biotechnologie / Biotechnology (FFBT)**
Partner organizations	STU Bratislava
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	1
Name of programme 20,21	**Biochemie a bioorganická chemie / Biochemistry and Bioorganic Chemistry (FFBT)**
Partner organizations	ENSCR Rennes; UI Tromsø
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	1
Name of programme 22,23	**Chemické a procesní inženýrství / Chemical and Process Engineering (FCE)**
Partner organizations	KU Leuven
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	2
Name of programme 24,25	**Chemie / Analytical and Physical Chemistry (FCE)**
Partner organizations	ENSCR Rennes; Universität Regensburg; Université Bourgogne Franche-Comté; KU Leuven; UI Tromsø
Associated organizations	
Category of programme (Joint/Double/Multiple Degree)	Double Degree
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	2

Summary information to tab. 2.3					
UCT Prague	**Bachelor's study programm**	**Master's study programme**	**Follow-up master's study**	**Doctoral study programm**	**Total**
Number of study programmes			**9**	**16**	**25**
Number of active studies in these study programmes			83	10	**93**

Note: DSPs in Czech and DSPs in English are counted separately

Tab. 2.4: Accredited study programmes implemented with another university or public research institution* based in CZ	
UCT Prague	
Name of study programme 1,2	**Chemie/Chemistry (FCHT) P1417**
ISCED-F broad field	**0531**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	39
Name of study programme 3,4	**Chemie P0531D130017/ Chemistry P0531D130018 (FCHT)**
ISCED-F broad field	**0531**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	38
Name of study programme 5,6	**Chemie a technologie materiálů /Chemistry and Technology of Materials P2833**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	37
Name of study programme 7,8	**Chemie a technologie materiálů P0711D130007 / Chemistry and Technology of Materials P0711D130008**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	39
Name of study programme 9,10	**Chemie a chemické technologie/Chemistry and Chemical Technologies P2832**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	14
Name of study programme 11,12	**Chemie a chemické technologie P0711D130005 / Chemistry and Chemical Technologies P0711D130006**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	20
Name of study programme 13,14	**Syntéza a výroba léčiv/Synthesis and Production of Drugs (FCHT) P2824**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	39
Name of study programme 15,16	**Bioinformatika P0588D030001/ Bioinformatics P0588D030002**
ISCED-F broad field	**0588**
Partner university/institution*	CAS, CTU
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	13
Name of study programme 17,18	**Chemie/Chemistry (FPBT) P1417**
ISCED-F broad field	**0531**
Partner university/institution*	CAS; Institute of Hematology and Blood Transfusion of the Ministry of Health of the Czech Republic; Crop Research Institute
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	65
Name of study programme 19,20	**Mikrobiologie/Microbiology P1528**
ISCED-F broad field	**0511**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	26
Name of study programme 21,22	**Biochemie a biotechnologie/Biochemistry and Biotechnology P2836**
ISCED-F broad field	**0512**
Partner university/institution*	CAS; Crop Research Institute
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	20
Name of study programme 23,24	**Chemie a technologie potravin/Food Chemistry and Technology P2906**
ISCED-F broad field	**0721**
Partner university/institution*	CAS; Crop Research Institute; Food Research Institute Prague
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	50
Name of study programme 25,26	**Syntéza a výroba léčiv/Synthesis and Production of Drugs (FPBT) P2824**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	0
Name of study programme 27,28	**Mikrobiologie P0511D130021 / Microbiology P0511D130022**
ISCED-F broad field	**0511**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	13
Name of study programme 29,30	**Biotechnologie P0711D130019 /Biotechnology P0711D130020**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	22
Name of study programme 31,32	**Biochemie a bioorganická chemie P0512D130009 / Biochemistry and bioorganic chemistry P0512D130010**
ISCED-F broad field	**0512**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	22
Name of study programme 33,34	**Chemie/Chemistry (FCHI) P1417**
ISCED-F broad field	**0531**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	54
Name of study programme 35,36	**Chemické a procesní inženýrství/Chemical and Process Engineering P2837**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	65
Name of study programme 37,38	**Syntéza a výroba léčiv/Synthesis and Production of Drugs (FCHI) P2824**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	15
Name of study programme 39,40	**Chemie P0531D130021/Chemistry P0531D130022**
ISCED-F broad field	**0531**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	23
Name of study programme 41,42	**Chemické a procesní inženýrství P0711D130015 /Chemical and Process Engineering P0711D130016**
ISCED-F broad field	**0711**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	31
Name of study programme 43,44	**Molekulární chemická fyzika a senzorika P0531D130027/ Molecular Chemical Physics and Sensorics P0531D130028**
ISCED-F broad field	**0531**
Partner university/institution*	CAS
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	18
Name of study programme 45	**Konzervační vědy v péči o hmotné kulturní dědictví (Conservation Sciences in the Care of Tangible Cultural Heritage) P0531D130067**
ISCED-F broad field	**0531**
Partner university/institution*	University of Pardubice
Type of programme (bachelor's, master's follow-up master's, doctoral)	doctoral
Number of active studies as on 31 January	3

Note: *– For example, these are accredited study programmes implemented together with CAS or other public research institutions based in CZ.

Summary information to tab. 2.4					
UCT Prague	**Bachelor's study programme**	**Master's study programme**	**Follow-up master's study programme**	**Doctoral study programme**	**Total**
Number of study programmes				**45**	**45**
Number of active studies in these study programmes				666	**666**

Note: DSPs in Czech and DSPs in English are counted separately

Tab. 2.5: Accredited study programmes implemented with a secondary vocational school	
UCT Prague	
Name of study programme 1	**Konzervování - restaurování objektů kulturního dědictví - uměleckořemeslných děl (Conservation – Restoration of Cultural Heritage Objects – historical artwork)**
ISCED-F broad field	**02**
Partner university/institution*	Akademie - VOŠ, Gymn. a SOŠUP Světlá nad Sázavou, Vyšší odborná škola textilních řemesel a Střední umělecká škola řemesel, Střední uměleckoprůmyslová škola a Vyšší odborná škola v Turnov
Type of programme (bachelor's, master's follow-up master's, doctoral)	bachelor's
Number of active studies as on 31 January	4
Name of study programme 2	**Konzervování-restaurování uměleckořemeslných děl (Conservation – Restoration of Historical Artwork)**
ISCED-F broad field	**02**
Partner university/institution*	Akademie - VOŠ, Gymn. a SOŠUP Světlá nad Sázavou, Vyšší odborná škola textilních řemesel a Střední umělecká škola řemesel, Střední uměleckoprůmyslová škola a Vyšší odborná škola v Turnov
Type of programme (bachelor's, master's follow-up master's, doctoral)	bachelor's
Number of active studies as on 31 January	32

Summary information to tab. 2.5					
UCT Prague	**Bachelor's study programme**	**Master's study programme**	**Follow-up master's study**	**Doctoral study programm**	**Total**
Number of study programmes	**2**				**2**
Number of active studies in these study program	36				**36**

Tab. 2.6: Lifelong learning (LLL) courses at university (number of courses)									
UCT Prague		**Professionally oriented courses**			**Interest-oriented courses**				
		up to 15 hours	**16 to 100 hours**	**over 100 hours**	**up to 15 hours**	**16 to 100 hours**	**over 100 hours**	**U3V**	**TOTAL**
ISCED-F broad fields	**code**								
Generic programmes and qualifications	00								0
Education	01					10	14		24
Arts and humanities	02								0
Social sciences, journalism and information	03								0
Business, administration and law	04								0
Natural sciences, mathematics and statistics	05	2	22	14				3	41
Information and Communication Technologies	06							2	2
Engineering, manufacturing and construction	07								0
Agriculture, forestry, fisheries and veterinary	08								0
Health and welfare	09								0
Services	10								0
TOTAL	X	2	22	14	0	10	14	5	67

Tab. 2.7: Lifelong learning (LLL) courses at university (number of participants, natural persons)										
UCT Prague		**Professionally oriented courses**			**Interest-oriented courses**					**Of which number of participants accepted to study programmes pursuant to Section 60 of the Higher Education Act**
		up to 15 hours	**16 to 100 hours**	**over 100 hours**	**up to 15 hours**	**16 to 100 hours**	**over 100 hours**	**U3V**	**TOTAL***	
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									
Education	01					183	172		355	
Arts and humanities	02									
Social sciences, journalism and information	03									
Business, administration and law	04									
Natural sciences, mathematics and statistics	05	23	189	521				76	809	
Information and Communication Technologies	06							70	70	
Engineering, manufacturing and construction	07									
Agriculture, forestry, fisheries and veterinary	08									
Health and welfare	09									
Services	10									
TOTAL*	X	23	189	521		183	172	146	1,234	

Note: * = Since natural persons are reported who could have participated in more than one course, the total number may not correspond to the sum total of the preceding rows or columns; it reflects the real number of participants in the courses, i.e. one natural person may have been included several times.

Tab. 3.1: Students in accredited study programmes (number of studies)

UCT Prague		Bachelor's study programmes		Master's study programmes		Follow-up master's study programmes		Doctoral study programmes		TOTAL
		FT	PT/D	FT	PT/D	FT	PT/D	FT	PT/D	
FCT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02	36				47				83
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	24				225		80	13	342
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	470						120	30	620
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCT total	X	530	0	0	0	272	0	200	43	1045
Including number of female students at FCT	X	295				156		99	23	573
Including number of foreign students at FCT	X	93				46		55	8	202
FET										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	109				108		67	51	335
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FET total	X	109	0	0	0	108	0	67	51	335
Including number of female students at FET	X	54				57		36	23	170
Including number of foreign students at FET	X	19				37		23	8	87
FFBT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	477				259		118	46	900
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	107				111		62	30	310
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FFBT total	X	584	0	0	0	370	0	180	76	1210
Including number of female students at FFBT	X	410				290		109	44	853
Including number of foreign students at FFBT	X	90				51		38	13	192
FCE										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	326				94		77	20	517
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	175				123	1	93	28	420
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCE total	X	501	0	0	0	217	1	170	48	937
Including number of female students at FCE	X	248				101		59	11	419
Including number of foreign students at FCE	X	92				39		47	10	188
Studies outside faculties										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01	2								2
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04	176				131				307
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07									0
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
Total studies outside faculties	X	178	0	0	0	131	0	0	0	309
Including number of female students	X	99				77				176
Including number of foreign students	X	65				45				110
UCT Prague										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00	0	0	0	0	0	0	0	0	0
Education	01	2	0	0	0	0	0	0	0	2
Arts and humanities	02	36	0	0	0	47	0	0	0	83
Social sciences, journalism and information	03	0	0	0	0	0	0	0	0	0
Business, administration and law	04	176	0	0	0	131	0	0	0	307
Natural sciences, mathematics and statistics	05	827	0	0	0	578	0	275	79	1759
Information and Communication Technologies	06	0	0	0	0	0	0	0	0	0
Engineering, manufacturing and construction	07	861	0	0	0	342	1	342	139	1685
Agriculture, forestry, fisheries and veterinary	08	0	0	0	0	0	0	0	0	0
Health and welfare	09	0	0	0	0	0	0	0	0	0
Services	10	0	0	0	0	0	0	0	0	0
UCT TOTAL	X	1902	0	0	0	1098	1	617	218	3836
Including total of female students	X	1106	0	0	0	681	0	303	101	2191
Including total of foreign students	X	359	0	0	0	218	0	163	39	779

Note: * = A faculty or another constituent part of university providing an accredited study programme.
FT = full-time
PT/D = part-time / distance

Tab. 3.2: Self-paying students** (number of studies)

UCT Prague		Bachelor's study programmes		Master's study programme		Follow-up master's study programmes		Doctoral study programmes		TOTAL
		FT	PT/D	FT	PT/D	FT	PT/D	FT	PT/D	
FCT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05					1		4		5
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	5				2		1		8
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCT total	X	5	0	0	0	3	0	5	0	13
FET										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	1				5		1		7
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FET total	X	1	0	0	0	5	0	1	0	7
FFBT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	11				10		1		22
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FFBT total	X	11	0	0	0	10	0	1	0	22
FCE										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	9				6		1	1	17
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCE total	X	9	0	0	0	6	0	1	1	17
Studies outside faculties										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04	31				22				53
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07									0
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
Total studies outside faculties	X	31	0	0	0	22	0	0	0	53
UCT Prague										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00	0	0	0	0	0	0	0	0	0
Education	01	0	0	0	0	0	0	0	0	0
Arts and humanities	02	0	0	0	0	0	0	0	0	0
Social sciences, journalism and information	03	0	0	0	0	0	0	0	0	0
Business, administration and law	04	31	0	0	0	22	0	0	0	53
Natural sciences, mathematics and statistics	05	0	0	0	0	1	0	4	0	5
Information and Communication Technologies	06	0	0	0	0	0	0	0	0	0
Engineering, manufacturing and construction	07	26	0	0	0	23	0	4	1	54
Agriculture, forestry, fisheries and veterinary	08	0	0	0	0	0	0	0	0	0
Health and welfare	09	0	0	0	0	0	0	0	0	0
Services	10	0	0	0	0	0	0	0	0	0
UCT TOTAL	X	57	0	0	0	46	0	8	1	112

Note: * = A faculty or another constituent part of university providing an accredited study programme.
Note: **= Self-paying students means a person (student) who pays for his/her studies in foreign language himself/herself and the university does not include such person in the students count report used for determining the state subsidy amount for educational activity.
FT = full-time
PT/D = part-time / distance

Tab. 3.3: Academic failure * in the first year of study** (%)													
UCT Prague	**Bachelor´s study programmes**			**Master's study programmes**			**Follow-up master's study**			**Doctoral study programmes**			
	FT	**PT/D**	**TOTAL**	**FT**	**PT/D**	**TOTAL**	**FT**	**PT/D**	**TOTAL**	**FT**	**PT/D**	**TOTAL**	**TOTAL**
FCT	59,4%		59,4%				10,6%		10,6%	0	80,0%	16,9%	40,5%
FET	59,3%		59,3%				10,2%		10,2%	15,4%	25,0%	17,6%	30,9%
FFBT	57,9%		57,9%				10,1%		10,1%	14,3%	40,0%	16,7%	37,1%
FCE	45,6%		45,6%				7,4%		7,4%	4,4%	33,3%	6,3%	31,3%
Studies outside faculties	38,5%		38,5%				42,3%		42,3%				40,7%
UCT TOTAL	53,4%		53,4%				16,8%		16,8%	10,9%	42,9%	14,4%	36,8%

Note: * = Academic failure means the percentage calculated from the studies started in the calendar year n and the sum of academic failures of this group in the calendar years n and n+1. See the M

Note: ** = This includes all students who enrolled to study at the university in the calendar year n, regardless of whether it is their first enrolment at a university or not

Note: *** = A faculty or another constituent part of university providing an accredited study programme

FT = full-time

PT/D = part-time / distance

The TOTAL value is not a sum or average of the preceding values (e.g. for FT and PT/D in certain type of studies). A separate calculation needs to be done for each field of the table.

Example:

In the year 2020 (in the period from 01/01 to 31/12.) there were enrolled 500 full-time bachelor´s studies at the faculty. In the same and the following year 180 failed and left. The study failure of this group of students in the first year is 180/500=0.36, which means 36 %.

Tab. 3.4: Student scholarships* by the purpose of scholarship (number of natural persons)		
UCT Prague		
Purpose of scholarship	**Number of students**	**Average scholarship amount****
for outstanding study results under Section 91 para 2 letter a)	**770**	**11 078 050**
for outstanding scientific, research, development, artistic or other creative outcomes under Section 91 para 2 letter b)	**23**	**1 446 000**
for research, development and innovation activity pursuant to a special legal regulation, Section 91 para 2 letter c)	**1 356**	**38 386 334**
in case of the student´s difficult social situation under Section 91 para 2	**400**	**1 020 140**
in case of the student´s difficult social situation under Section 91 para 3	**9**	**212 500**
in other cases, worthy of special consideration, under Section 91 para 2	**3 631**	**25 789 452**
of that accommodation scholarship	**3 085**	**16 964 958**
to support studies abroad under Section 91 para 4 letter a)	**121**	**8 225 361**
to support studies in the Czech Republic under Section 91 para 4 letter b)	**101**	**1 691 728**
for students of doctoral study programmes under Section 91 para 4 letter	**735**	**71 472 329**
other scholarships	**463**	**1 522 716**
TOTAL***	**7 609**	**27 476 673**

Note: * = Regardless of the source of funding, only excluding funds from MEYS.
Note ** = Total sum paid out for the given type of scholarship in the year divided by the total number of natural persons who received at least one scholarship in that year. If one person received several payments, the person is counted only once but the calculation includes all amounts paid to such person.
Note: *** = As this shows natural persons who may be recipients of several scholarships, the number of students is not a sum of the preceding columns, but it reflects the actual number of students.

Example: The university paid out scholarships for outstanding study results under Section 91 para 2 letter a) in the given year the total of CZK 15,000. This type of scholarship was paid to 3 students, two of whom obtained such scholarship once and the third student three times. The average amount of the scholarship was CZK 5,000 (= 15,000/3).

Tab. 4.1: Graduates from accredited study programmes (number of graduations)

UCT Prague		Bachelor's study programmes		Master's study programmes		Follow-up master's study programmes		Doctoral study programmes		TOTAL
		FT	PT/D	FT	PT/D	FT	PT/D	FT	PT/D	
FCT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02	7								7
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	4				19		2	12	37
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	116				122		5	12	255
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCT total	X	127	0	0	0	141	0	7	24	299
including the number of female students at FCT	X	*74*				*81*		*2*	*12*	169
including the number of foreign students at FCT	X	*19*				*40*		*3*	*6*	68
FET										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	23	1			53	2	2	9	90
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FET total	X	23	1	0	0	53	2	2	9	90
including the number of female students at FET	X	*9*	*1*			*23*	*2*	*0*	*4*	39
including the number of foreign students at FET	X	*2*				*31*	*1*		*1*	35
FFBT										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	45				101		4	13	163
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	148	1			88		0	5	242
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FFBT total	X	193	1	0	0	189	0	4	18	405
including the number of female students at FFBT	X	*157*	*1*			*154*		*1*	*11*	324
including the number of foreign students at FFBT	X	*26*				*31*			*5*	62
FCE										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01									0
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04									0
Natural sciences, mathematics and statistics	05	28				37		1	10	76
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07	77	2			44		2	6	131
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
FCE total	X	105	2	0	0	81	0	3	16	207
including the number of female students at FCE	X	*42*				*37*			*4*	83
including the number of foreign students at FCE	X	*13*				*12*			*1*	26
Studies outside faculties										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00									0
Education	01	4								4
Arts and humanities	02									0
Social sciences, journalism and information	03									0
Business, administration and law	04	11				24				35
Natural sciences, mathematics and statistics	05									0
Information and Communication Technologies	06									0
Engineering, manufacturing and construction	07									0
Agriculture, forestry, fisheries and veterinary	08									0
Health and welfare	09									0
Services	10									0
Total studies outside faculties	X	15	0	0	0	24	0	0	0	39
Including the number of female students	X	*5*				*12*				17
Including the number of foreign students	X	*0*				*3*				3
UCT Prague										
ISCED-F broad fields	**code**									
Generic programmes and qualifications	00	0	0	0	0	0	0	0	0	0
Education	01	4	0	0	0	0	0	0	0	4
Arts and humanities	02	7	0	0	0	0	0	0	0	7
Social sciences, journalism and information	03	0	0	0	0	0	0	0	0	0
Business, administration and law	04	11	0	0	0	24	0	0	0	35
Natural sciences, mathematics and statistics	05	77	0	0	0	157	0	7	35	276
Information and Communication Technologies	06	0	0	0	0	0	0	0	0	0
Engineering, manufacturing and construction	07	364	4	0	0	307	2	9	32	718
Agriculture, forestry, fisheries and veterinary	08	0	0	0	0	0	0	0	0	0
Health and welfare	09	0	0	0	0	0	0	0	0	0
Services	10	0	0	0	0	0	0	0	0	0
UCT TOTAL	X	463	4	0	0	488	2	16	67	1040
Including the total number of female students	X	**287**	**2**	**0**	**0**	**307**	**2**	**3**	**31**	**632**
Including the number of foreign students	X	**60**	**0**	**0**	**0**	**117**	**1**	**3**	**13**	**194**

FT = full-time, PT/D = part-time / distance; the number of successfully completed studies (not natural persons) are reported for the period 01/01 – 31/12.
Note: * = A faculty or another constituent part of university providing an accredited study programme.

Tab. 5.1: Demand for study

UCT Prague		Bachelor's study programmes				Master's study programmes				Follow-up master's study programmes				Doctoral study programmes			
		Number of applicants (natural persons)	Number of applications	Number of admissions	Number of enrolments	Number of applicants (natural persons)	Number of applications	Number of admissions	Number of enrolments	Number of applicants (natural persons)	Number of applications	Number of admissions	Number of enrolments	Number of applicants (natural persons)	Number of applications	Number of admissions	Number of enrolments
FCT																	
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02	26	26	19	17												
Social sciences, journalism and information	03																
Business, administration and law	04																
Natural sciences, mathematics and statistics	05	48	48	30	15					34	35	25	23	31	31	28	27
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07	770	864	626	280					147	195	169	102	44	44	40	35
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
FCT total	X	833	938	675	312		0	0	0	168	230	194	125	75	75	68	62
FET																	
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02																
Social sciences, journalism and information	03																
Business, administration and law	04																
Natural sciences, mathematics and statistics	05																
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07	180	192	148	68					58	73	57	43	27	27	20	19
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
FET total	X	180	192	148	68		0	0	0	58	73	57	43	27	27	20	19
FFBT																	
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02																
Social sciences, journalism and information	03																
Business, administration and law	04																
Natural sciences, mathematics and statistics	05	835	888	547	244					237	342	245	121	42	42	34	30
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07	161	161	115	57					123	135	99	53	24	24	22	16
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
FFBT total	X	946	1 049	662	301		0	0	0	292	477	344	174	66	66	56	46
FCE																	
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02																
Social sciences, journalism and information	03																
Business, administration and law	04																
Natural sciences, mathematics and statistics	05	494	494	330	183					115	150	124	48	25	25	25	25
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07	198	218	177	90					106	120	92	67	22	22	18	18
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
FCE total	X	623	712	507	273		0	0	0	198	270	216	115	47	47	43	43
Studies outside faculties																	
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02																
Social sciences, journalism and information	03																
Business, administration and law	04	317	317	172	118					166	173	93	79				
Natural sciences, mathematics and statistics	05																
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07																
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
Total studies outside faculties	X	317	317	172	118		0	0	0	166	173	93	79		0	0	0
UCT Prague	***- the total for UCT Prague is not the sum of individual faculties!***																
ISCED-F broad fields	**code**																
Generic programmes and qualifications	00																
Education	01																
Arts and humanities	02	26	26	19	17												
Social sciences, journalism and information	03																
Business, administration and law	04	317	317	172	118					166	173	93	79				
Natural sciences, mathematics and statistics	05	1 240	1 430	907	442					336	527	394	192	98	98	87	82
Information and Communication Technologies	06																
Engineering, manufacturing and construction	07	1 182	1 435	1 066	495					402	523	417	265	117	117	100	88
Agriculture, forestry, fisheries and veterinary	08																
Health and welfare	09																
Services	10																
UCT Prague TOTAL	X	2 369	3 208	2 164	1 072					746	1 223	904	536	215	215	187	170

Note: * = A faculty or another constituent part of university providing an accredited study programme
FT = full-time

Tab. 6.1: Academic workers, researchers and other employees in total (average converted numbers*)

UCT Prague	Academic workers								Researchers and professional workers**			Other employees*****	TOTAL employees
	TOTAL academic workers	Professors	Associate professors	Assistant professors	Assistants	Lecturers	Scientific, research and development workers involved in pedagogical activity	Visiting professors	Postdocs***	Research workers not falling into any other category	Other scientific, research and development workers****		
FCT****	202,070	19,758	28,289	53,108	2,000		98,915		56,950	10,792	21,740	25,633	317,185
Female employees at FCT	74,253	0,000	8,367	20,266	0,000		45,620		18,834	4,520	14,220	16,350	128,177
FET****	69,941	4,583	14,379	29,932	3,042		18,005		15,465	0,650	1,400	8,370	95,826
Female employees at FET	27,148	0,500	2,229	13,515	1,042		9,862		4,965	0,650	1,202	7,000	40,965
FFBT****	147,645	19,900	31,927	35,010	1,866		58,942		33,102	1,500	10,954	9,743	202,944
Female employees at FFBT	81,851	4,450	15,656	23,852	1,866		36,027		15,204	1,500	7,550	9,324	115,429
FCE****	153,806	18,175	22,450	51,679	1,292		60,210		20,809	3,500	12,100	10,211	200,426
Female employees at FCE	45,407	2,000	2,200	21,645	0,492		19,070		6,692	1,200	8,200	9,611	71,110
Total for other workplaces	130,242	9,383	11,150	51,299	6,850		51,560		13,037	2,985	14,286	286,441	446,991
Female employees in other workplaces	63,298	2,000	5,517	29,828	2,600		23,353		4,054	1,410	8,340	165,140	242,242
TOTAL	**703,704**	**71,799**	**108,195**	**221,028**	**15,050**	**0,000**	**287,632**	**0,000**	**139,363**	**19,427**	**60,480**	**340,398**	**1 263,372**
Total female employees	**291,957**	**8,950**	**33,969**	**109,106**	**6,000**	**0,000**	**133,932**	**0,000**	**49,749**	**9,280**	**39,512**	**207,425**	**597,923**

Note: * = Average converted number means the total number of actually worked hours for the reporting period from 01/01 to 31/12. (by all employees within the category; including DPČ contracts and excluding DPP contracts) divided by the total yearly

Note: ** = Researcher in this case means a research worker who is not an academic worker under Section 70 of the Higher Education Act no. 111/1998 coll.

Note: *** = An employee of a research institution or a higher education institution up to 5 years after being awarded a PhD degree or its equivalent. He/she works on a specific task as part of a research team of the given institution usually under the

Note: **** = The category "Other scientific, research and development workers" includes technical and professional staff who are not directly involved in research, but are indispensable for the research activity (e.g. operation of a research facility).

Note: ***** = Other employees means all other employees who are not directly involved in education and research. They are namely administrative, technical and other staff.

Note: ****** = A faculty or another constituent part of university providing an accredited study programme.

Tab. 6.2: Age structure of academic workers, researchers and other employees (number of natural persons*)

	Academic workers														Researchers and professional workers**									
	Professors		Associate professors		Assistant professors		Assistants		Lecturers		Scientific, research and development workers involved in pedagogical activity		Visiting professors		Postdocs***		Research workers not falling into any other category		Other scientific, research and development workers****		Other employees*****			
UCT Prague	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women	TOTAL	women
up to 29 years					2	0	4	2			260	121			12	5	18	11	11	8	21	10	**328**	**157**
30-39 let	1		12	4	130	52	10	5			95	46			118	44	3	2	10	7	45	34	**424**	**194**
40-49 years	16	1	49	15	125	54	7				46	21			12	4	2	1	23	16	92	78	**372**	**190**
50-59 years	24	1	43	19	58	34	2	1			17	12					0	0	23	14	92	74	**259**	**155**
60-69 years	36	5	23	8	32	15	2	2			11	2			1		0	0	9	5	63	31	**177**	**68**
over 70 years	19	5	10	2	10	1	0				4	2					0	0	7	1	18	7	**68**	**18**
TOTAL	**96**	**12**	**137**	**48**	**357**	**156**	**25**	**10**	**0**	**0**	**433**	**204**	**0**	**0**	**143**	**53**	**23**	**14**	**83**	**51**	**331**	**234**	**1628**	**782**

1048 430 249 118

Note: * = Total number of employees/workers regardless if they are full-time. This includes only employment relationship, without persons working based on a DPP or a DPČ contract. It does not include other types of contractual relationships under the Civic Code that have the character of purchase of services.

Note: ** = Researcher in this case means a research worker who is not an academic worker under Section 70 of the Higher Education Act no. 111/1998 coll.

Note: *** = An employee of a research institution or a higher education institution up to 5 years after being awarded a PhD degree or its equivalent. He/she works on a specific task as part of a research team of the given institution usually under the supervision of experienced researchers and publishes outcomes individually or within the creative team. He/she has a fixed term contract with the research institution (for the duration of 1-3 years) for one to three subsequent periods

Note: **** = The category "Other scientific, research and development workers" includes technical and professional staff who are not directly involved in research, but are indispensable for the research activity (e.g. operation of a research facility).

Note: ***** = Other employees means all other employees who are not directly involved in education and research. They are namely administrative, technical and other staff.

Tab. 6.3: Number of academic workers and researchers by the scope of their working hours and the highest achieved qualification (number of natural persons by working hours)

UCT Prague	Academic workers								Researchers*		TOTAL	women
FCT												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE (full time employment)	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**Scientific workers***	**women**		
up to 0.3	2		4	1	6	2			36	14	**48**	**17**
0.31–0.5	1		2	1	5	2			40	17	**48**	**20**
0.51–0.7	1		1		3	1	1	1	20	9	**26**	**11**
0.71–1	20		31	8	74	31	2		110	56	**237**	**95**
more than 1											**0**	**0**
TOTAL	**24**	**0**	**38**	**10**	**88**	**36**	**3**	**1**	**206**	**96**	**359**	**143**
FET												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**		
up to 0.3	1		1	1	2	1			8	7	**12**	**9**
0.31–0.5	2	1	3		4	2			13	6	**22**	**9**
0.51–0.7					2	2			14	2	**16**	**4**
0.71–1	4		13	2	26	10	7	5	17	10	**67**	**27**
more than 1											**0**	**0**
TOTAL	**7**	**1**	**17**	**3**	**34**	**15**	**7**	**5**	**52**	**25**	**117**	**49**
FFBT												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**		
up to 0.3	1		4	3	6	5			35	19	**46**	**27**
0.31–0.5	7	2	6	2	7	3			25	17	**45**	**24**
0.51–0.7	4	1	3	1	1	1			7	4	**15**	**7**
0.71–1	16	3	30	15	50	25	2	2	68	48	**166**	**93**
more than 1											**0**	**0**
TOTAL	**28**	**6**	**43**	**21**	**64**	**34**	**2**	**2**	**135**	**88**	**272**	**151**
FCE												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**		
up to 0.3	5		6	1	13	6	1		36	13	**61**	**20**
0.31–0.5	2		4		15	9	1	0	36	13	**58**	**22**
0.51–0.7	1				9	4	1		18	4	**29**	**8**
0.71–1	18	2	20	2	44	17	3	1	48	18	**133**	**40**
more than 1											**0**	**0**
TOTAL	**26**	**2**	**30**	**3**	**81**	**36**	**6**	**1**	**138**	**48**	**281**	**90**
Other workplaces in total*												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**		
up to 0.3			5	3	4	0	2		2	0	**13**	**3**
0.31–0.5	3		8	5	9	7	2	1	16	7	**38**	**20**
0.51–0.7			1	1	1	1	1		1	1	**4**	**3**
0.71–1	8	2	9	4	27	18	26	16	44	20	**114**	**60**
more than 1											**0**	**0**
TOTAL	**11**	**2**	**23**	**13**	**41**	**26**	**31**	**17**	**63**	**28**	**169**	**86**
UCT Prague												
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		other					
FTE	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**	**TOTAL**	**women**		
up to 0.3	9	0	14	8	18	8	2	0	81	40	**124**	**56**
0.31–0.5	15	3	19	8	25	14	2	1	94	47	**155**	**73**
0.51–0.7	6	1	5	2	7	5	2	1	42	16	**62**	**25**
0.71–1	66	5	83	29	177	84	37	23	239	134	**602**	**275**
more than 1	0	0	0	0	0	0	0	0	0	0	**0**	**0**
TOTAL	96	11	151	50	308	147	49	26	594	285	**1198**	**519**
UCT TOTAL	**96**	**11**	**151**	**50**	**308**	**147**	**49**	**26**	**594**	**285**	**1198**	**519**

Note: only the highest achieved academic title is reported

Note: * = Researcher in this case means a research worker who is not an academic worker under Section 70 of the Higher Education Act no. 111/1998 coll.

Note: ** = A faculty or another constituent part of university providing an accredited study programme

Tab. 6.4: Managers (natural persons)

UCT Prague	Rector/ Dean	Vice-Rector/Vice-Dean	Academic senate	Scientific/Artistic/Academic Board	Bursar / Secretary**	Board of Trustees	Director of institute, higher education agricultural farm or forest and other workplaces	Head of department/institute/research workplace****	TOTAL managers *****
University (name) - University/Rector´s Office level, not data for constituent parts of the	1	4	24	39	1	9			78
women		1	5	3	1	1			11
FCT*	1	3	11	35	1			12	63
women		0	4	1	1			0	6
FET*	1	3	9	34	1			5	53
women		0	3	4	1			0	8
FFBT*	1	3	11	37	1			7	60
women		1	7	14	1			2	25
FCE*	1	3	13	31	1			6	55
women		0	3	1	1			0	5
University institutes and agricultural or forest farms									0
women									0
Other workplaces in total***								12	12
women								5	5
Faculties*, university departments and other workplaces in total	4	12	44	137	4		0	42	231
women	0	1	17	20	4		0	5	44
UCT Prague TOTAL***	5	16	68	176	5	9	0	42	309
women	0	2	22	23	5	1	0	5	55

The table records only constituent parts of the higher education institution and workplaces for educational, research, development, innovation, artistic or other creative activities or for the provision of information services or technology transfer. It does not include data for administrative activity, facilities for cultural and sport activities, accommodation and boarding or for ensuring the operation of the school.

Note: * = only faculties and constitutional parts under such faculties (according to the characteristic stated above)

Note: ** = under the Higher Education Act, Section 25, Article 2.

Note: *** = workplace for educational and research, development and innovation, artistic or other creative activity or for the provision of information services or technology transfer pursuant to Section 22 para c) of the Act no. 111/1998 Coll.

Note: **** = the listed and similar workplaces for educational and research, development and innovation, artistic or other creative activity or for the provision of information services or technology transfer pursuant to Section 22 para c) of the Act no. 111/1998 Coll., that report to a constituent part of the school

Note: ***** = the total amount does not necessarily reflect the real state of natural persons (one person may fill in more positions within UCT or a faculty), it is simply a sum of cells.

Tab. 6.5: Academic workers and researchers with foreign citizenship (average converted numbers******)

UCT Prague	Academic workers						Researchers and professional workers**			Other employees*****
	Professors	Associate professors	Assistant professors	Assistants	Lecturers	Scientific, research and development workers involved in pedagogical activity	Postdocs***	Research workers not falling into any other category	Other scientific, research and development workers****	
FCT	*0*	*0*	*4*	*0*	*0*	*19,33*	*9,8*	*4,923*	*0*	*0,9*
including: Germany								*0,623*		
Poland							*0,25*			
Austria							*0,7*			
Slovakia			*2*			*3,92*				
other EU countries						*5*	*1*	*2*		*0,9*
other non-EU countries			*2*			*10,41*	*7,85*	*2,3*		
women (regardless of citizenship)			*2*			*9,4*	*5,3*	*1,2*		
FET	*0*	*0*	*3*	*0*	*0*	*4,4*	*2*	*0*	*0*	*0*
including: Germany										
Poland										
Austria										
Slovakia			*2*			*0,5*				
other EU countries										
other non-EU countries			*1*			*3,9*	*2*			
women (regardless of citizenship)			*1*			*2,4*	*1*			
FFBT	*0*	*0*	*3*	*0*	*0*	*8,2*	*1*	*1,9*	*0*	*0*
including: Germany										
Poland										
Austria										
Slovakia			*1*			*0*		*1*		
other EU countries						*2,8*				
other non-EU countries			*2*			*5,4*	*1*	*0,9*		
women (regardless of citizenship)			*1*			*3,7*	*1*	*0,9*		
FCE	*1*	*2*	*5,85*	*0,12*	*0*	*14*	*1,65*	*0*	*0,9*	*1*
including: Germany										
Poland			*1,95*							
Austria										
Slovakia	*1*	*1*	*2,5*	*0,12*						*1*
other EU countries						*6,3*				
other non-EU countries		*1*	*1,4*			*7,7*	*1,65*		*0,9*	
women (regardless of citizenship)		*1*	*3,8*	*0,12*		*5,8*	*1,65*		*0,9*	
Other workplaces total	*1*	*0*	*3*	*2*	*0*	*2,3*	*1*	*0*	*5*	*0,12*
including: Germany										
Poland							*1*			
Austria										
Slovakia	*1*		*2*							
other EU countries						*1*				
other non-EU countries			*1*	*2*		*1,3*		*0*	*5*	*0,12*
women (regardless of citizenship)			*1*			*0,7*	*1*	*0*	*2*	*0,12*
UCT TOTAL	*2*	*2*	*18,85*	*2,12*	*0*	*48,23*	*15,45*	*6,823*	*5,9*	*2,02*
including: Germany	0	0	0	0	0	0	0	0,623	0	0
Poland	0	0	1,95	0	0	0	1,25	0	0	0
Austria	0	0	0	0	0	0	0,7	0	0	0
Slovakia	2	1	9,5	0,12	0	4,42	0	1	0	1
other EU countries	0	0	0	0	0	15,1	1	2	0	0,9
other non-EU countries	0	1	7,4	2	0	28,71	12,5	3,2	5,9	0,12
women (regardless of citizenship)	0	1	8,8	0,12	0	22	9,95	2,1	2,9	0,12

Note: * = A faculty or another constituent part of university providing an accredited study programme.

Note: ** = Researcher in this case means a research worker who is not an academic worker under Section 70 of the Higher Education Act no. 111/1998 coll.

Note: *** = An employee of a research institution or a higher education institution up to 5 years after being awarded a PhD degree or its equivalent. He/she works on a specific task as part of a research team of the given institution usually under the supervision of experienced

Note: **** = The category "Other scientific, research and development workers" includes technical and professional staff who are not directly involved in research, but are indispensable for the research activity (e.g. operation of a research facility).

Note: ***** = Other employees means all other employees who are not directly involved in education and research. They are namely administrative, technical and other staff.

Note: ****** = Average converted number means the total number of actually worked hours for the reporting period from 01/01 to 31/12. (by all employees within the category; including DPČ contracts and excluding DPP contracts)

Tab. 6.6: Newly appointed associate professors and professors (count)

UCT Prague	Number			Average age of the newly appointed***
	At UCT Prague		Employees of UCT Prague appointed at other higher education	
	Total	Employees of UCT Prague		
FCT				
Professors appointed in the year 2021	***1***	***1***		50
women	***0***	***0***		
Associate professors appointed in the year 2021	***5***	***5***		42,4
women	***1***	***1***		46
FET				
Professors appointed in the year 2021	***2***	***2***		45,5
women				
Associate professors appointed in the year 2021	***1***	***1***		46
women	***0***			
FFBT				
Professors appointed in the year 2021	***3***	***3***		43
women	***1***	***1***		53
Associate professors appointed in the year 2021	***5***	***5***		42,4
women	***3***	***3***		45
FCE				
Professors appointed in the year 2021	***1***	***1***		43
women				
Associate professors appointed in	***1***	***1***		44
women	***0***	***0***		
Other non-faculty workplaces				
Professors appointed in the year 2021				
women				
Associate professors appointed in the year 2021	***0***	***0***		0
women	***0***	***0***		
TOTAL professors	7	7		44,71
women	1	1		53
TOTAL associate professors	12	12		43,7
women	4	4		45,2

Note: *= Includes all habilitations and appointments in the given year and at the given university regardless of whether the newly appointed professors and associate professors were employed at this university

Note: **= Number of professors and associate professors who are employed at UCT Prague but were appointed at other higher education institution.

Note: *** = Average age is calculated from the total number of newly appointed at UCT Prague (faculties or total number).

Tab. 7.1: Involvement in international cooperation programmes (regardless of the source of funding)				
UCT Prague	**H2021/ 7th framework programme of the European Commission**			
	TOTAL	**Including Marie-Curie Actions**	**Other**	**TOTAL**
Number of projects*	19	4	9	28
Number of outgoing	0	0	91	91
Number of incoming students***			219	219
Number of outgoing academic workers and researchers****	0	0	263	263
Number of incoming academic workers and researchers*****	0	0	8	8
Subsidy in thousands of CZK******	22 006,65	3 082,34	14 437,27	36 443,92

Note: * = Projects running in the given year.
Note: ** = Outgoing students (i.e.. number of travels) who in the year 2021 went for a stay abroad; it includes also students whose stay started in the year 2020. Only students whose stay was longer than 4 weeks (28 days) are reported. If the school reports also stays with other duration, such fact should be stated in the notes.
Note: *** = Incoming students (i.e.. number of arrivals) who arrived in the year 2021; it includes also students whose stay started in the year 2020. Only students whose stay was longer than 4 weeks (28 days) are reported. If the school reports also stays with other duration, such fact should be stated in the notes.
Note: **** = Outgoing academic workers (i.e.. number of travels) who in the year 2021 went for a stay abroad; it includes also workers whose stay started in the year 2020.

Note: ***** = Incoming academic workers (i.e.. number of arrivals) who arrived in the year 2021; it includes also workers whose stay started in the year 2020.

Note: ****** = The amounts represent total project funding, including co-funding by MEYS.

Tab. 7.2: Mobilities of students, academic and other workers by countries***** (regardless of the source of funding) (the schools just fills in the table with the respective values, without changing anything)											
UCT Prague	Number of outgoing students*			Number of incoming students**			Number of outgoing workers***	Number of incoming workers****	Number of other outgoing workers***	Number of other incoming workers****	
Country	Total	Graduate internships (included in	Virtual[1] (of the total)	Virtual[1] (of the total)	Total						TOTAL for country
Islamic Republic of Afghanistan											0
Republic of Albania											0
Antarctica											0
Peoples Democratic Republic of Algeria											0
American Samoa											0
Principality of Andorra											0
Republic of Angola											0
Antigua and Barbuda											0
Republic of Azerbaijan											0
Republic of Argentina											0
Commonwealth of Australia											0
Republic of Austria	4					1	0				13
Commonwealth of the Bahamas											0
Kingdom of Bahrain											0
People's Republic of Bangladesh											0
Republic of Armenia											0
Barbados											0
Kingdom of Belgium	6					13	1				38
Bermuda											0
Kingdom of Bhutan											0
Plurinational State of Bolivia											0
Bosnia and Herzegovina											0
Republic of Botswana											0
Bouvet Island											0
Federative Republic of Brazil											0
Belize											0
British Indian Ocean Territory											0
Solomon Islands											0
British Virgin Islands											0
Republic of Kosovo											0
Sultanate Brunei Darussalam											0
Republic of Bulgaria							3				3
Republic of the Union of Myanmar											0
Republic of Burundi											0
Republic of Belarus											0
Kingdom of Cambodia											0
Republic of Cameroon											0
Canada											0
Republic of Cabo Verde											0
Cayman Islands											0
Central African Republic											0
Democratic Socialist Republic of Sri Lanka											0
Republic of Chad											0
Republic of Chile											0
People's Republic of China						1					1
Republic of China (Taiwan)											0
Easter Island Territory											0
Christmas Island											0
Republic of Colombia											0
Territorial The Comoros											0
Mayotte Department											0
Republic of the Congo											0
Democratic Republic of the Congo											0
Cook Islands											0
Republic of Costa Rica											0
Republic of Croatia						2	1				3
Republic of Cuba											0
Republic of Cyprus											0
Czech Republic											0
Republic of Benin											0
Kingdom of Denmark						1	0				50
Commonwealth of Dominica											0
Dominican Republic											0
Republic of Ecuador											0
Republic of El Salvador											0
Republic of Equatorial Guinea											0
Federal Democratic Republic of Ethiopia											0
State of Eritrea											0
Republic of Estonia	1					1	1				4
Faroe Islands											0
Falkland Islands (Islas Malvinas)											0
South Georgia and the South Sandwich Islands											0
Republic of Fiji											0
Republic of Finland	7					1					8
Åland autonomous region											0
French Republic	8					45	8	1			106
French Guiana											0
French Polynesia											0
French Southern and Antarctic Territories											0
Republic of Djibouti											0
Gabonese Republic											0
Georgia											0
Republic of the Gambia											0
Palestinian Autonomous Territories											0
Federal Republic of Germany	16					8	10				34
Republic of Ghana											0
Gibraltar											0
Republic of Kiribati											0
Hellenic Republic (Greece)	1					2	4				7
Greenland											0
Grenada											0
Guadeloupe											0
Guam Territory											0
Republic of Guatemala											0
Republic of Guinea											0
Co operative Republic of Guyana											0
Republic of Haiti											0
Heard Island and McDonald Islands											0
Holy See (Vatican City State)											0
Republic of Honduras											0
Hong Kong Special Administrative Region of the People's Republic of China											0
Hungary							2				2
Republic of Iceland											0
Republic of India								1			1
Republic of Indonesia											0
Islamic Republic of Iran											0
Republic of Iraq											0
Ireland	1										1
State of Israel							1				1
Republic of Italy	7					13	11				31
Republic of Côte d'Ivoire											0
Jamaica											0
Japan											0
Republic of Kazakhstan											0
Hashemite Kingdom of Jordan											0
Republic of Kenya											0
Democratic People's Republic of Korea											0
Republic of Korea	1										1
State of Kuwait											0
Kyrgyz Republic											0
Lao People's Democratic Republic											0
Republic of Lebanon											0
Kingdom of Lesotho							1				1
Republic of Latvia											0
Republic of Liberia											0
State of Libya											0
Principality of Liechtenstein											0
Republic of Lithuania	3					3	7				19
Grand Duchy of Luxembourg											0
Macao Special Administrative Region of the People's Republic of China											0
Republic of Madagascar											0
Republic of Malawi											0
Malaysia											0
Republic of Maldives											0
Republic of Mali											0
Republic of Malta							1				1
Martinique											0
Islamic Republic of Mauritania											0
Republic of Mauritius											0
United Mexican States							2				2
Principality of Monaco											0
Mongolia											0
Republic of Moldova							3				3
Montenegro											0
Montserrat											0
Kingdom of Morocco											0
Republic of Mozambique											0
Sultanate of Oman											0
Republic of Namibia											0
Republic of Nauru											0
Federal Democratic Republic of Nepal											0
Netherlands	2					1	1				4
Country of Curaçao											0
Aruba											0
Saint Martin (NL)											0
Bonaire St Eustatius and Saba											0
New Caledonia											0
Republic of Vanuatu											0
New Zealand											0
Republic of Nicaragua											0
Republic of the Niger											0
Federal Republic of Nigeria											0
Niue											0
Norfolk Territory											0
Kingdom of Norway	7					1	1				9
Commonwealth of the Northern Marianas											0
The United States Minor Outlying Islands											0
Federated States of Micronesia											0
Republic of the Marshall Islands											0
Republic of Palau											0
Islamic Republic of Pakistan											0
Republic of Panama											0
Independent State of Papua New Guinea											0
Republic of Paraguay											0
Republic of Peru											0
Republic of the Philippin											0
Pitcairn Islands											0
Republic of Poland						20	5	2			27
Republic of Portugal	8					12	5				25
Republic of Guinea-Bissau											0
Democratic Republic of Timor-Leste											0
Commonwealth of Puerto Rico											0
State of Qatar											0
Réunion Region											0
Romania											0
Russian Federation						1	0				1
Republic of Rwanda											0
Collectivité territoriale de Saint-Barthélemy											0
Saint Helena, Ascension and Tristan da Cunha											0
Saint Kitts and Nevis											0
Anguilla											0
Saint Lucia											0
Saint Martin											0
Territorial Collectivity of Saint-Pierre and Miquelon											0
Saint Vincent and the Grenadines											0
Republic of San Marino											0
Democratic Republic of Sao Tome and Principe											0
Kingdom of Saudi Arabia											0
Republic of Senegal											0
Republic of Serbia							4				4
Republic of Seychelles											0
Republic of Sierra Leone											0
Republic of Singapore											0
Slovak Republic						3	26	1			30
Socialist Republic of Viet Nam											0
Republic of Slovenia	1					3	3				7
Federal Republic of Somalia											0
Republic of South Africa											0
Republic of Zimbabwe											0
Kingdom of Spain	9					38	9	1			57
Republic of South Sudan											0
Republic of the Sudan											0
Sahrawi Arab Democratic Republic											0
Republic of Suriname											0
Spitsbergen and Jan Mayen											0
Kingdom of Eswatini											0
Kingdom of Sweden	4					1	0				50
Swiss Confederation	4							1			5
Syrian Arab Republic											0
Republic of Tajikistan											0
Kingdom of Thailand											0
Republic of Togo											0
Tokelau											0
Kingdom of Tonga											0
Republic of Trinidad and Tobago											0
United Arab Emirates											0
Republic of Tunisia											0
Republic of Turkey						18		1			19
Turkmenistan											0
Turks and Caicos Islands											0
Tuvalu											0
Republic of Uganda											0
Ukraine											0
Republic of North Macedonia											0
Egyptski arabski republika											0
United Kingdom of Great Britain and Northern Ireland	1						1				2
Bailiwick Guernsey											0
Bailiwick Jersey											0
Isle of Man											0
United Republic of Tanzania											0
United States of America							6				6
United States Virgin Islands											0
Burkina Faso											0
Oriental Republic of Uruguay											0
Republic of Uzbekistan											0
Bolivarian Republic of Venezuela											0
Wallis Islands and Futuna											0
Independent State of Samoa											0
Republic of Yemen											0
Republic of Zambia							1				1
Other											0
Total	94	0	0	0	210		147	8	0	0	459

Note: * = Outgoing students (ie. number of travels) who in the year 2021 completed a stay abroad; it includes also students whose stay started in the year 2020. Only students whose stay was at least 2 weeks long (14 days) are included in the figures.

Note: ** = Incoming students (ie. number of arrivals) who arrived in the year 2021; it includes also students whose stay started in the year 2020. Only students whose stay was at least 2 weeks long (14 days) are included in the figures.

Note: *** = Outgoing academic/other workers (ie. number of travels) who in the year 2021 completed a stay abroad; it includes also workers whose stay started in the year 2020. Only workers whose stay was at least 5 days long are included in the figures.

Note: **** = Incoming academic/other workers (ie. number of travels) who arrived in the year 2021; it includes also workers whose stay started in the year 2020. Only workers whose stay was at least 5 days long are included in the figures

Note: ***** = Table 7.2 Mobilities of students, academic and other workers by countries provides a list of all countries, ; the purpose was to facilitate processing of the obtained data by MEYS. At the same time, it should not mean additional workload on higher education institutions when filling in the sheet. In case of no mobility for the given country, please leave the field blank.

Note: ****** = Graduate internship means a practical internship in a foreign company or organisation lasting 2 - 12 months which starts after successful completion of studies and ends within one year from graduation. Graduate internship is carried out based on a three-party agreement, the parties being the student, the sending higher education institution and the host organisation, institution, company.

Note: 1 = If there was no virtual mobility at your school, fill in a zero. If there was such mobility but no information is available, provide a qualified estimate and make a comment on the cell/cells/column (e.g. qualified estimate). If it is not possible to provide a qualified estimate, leave the cell empty and comment on the cell/cells/column (e.g. n/a).

Tab. 7.3: Mobilities of graduates** (number and percentage of completed studies)

UCT Prague	Bachelor's study programmes		Master's study programmes		Follow-up master's study		Doctoral study programmes		TOTAL**	
	percentage	number	percentage	number	percentage	number	percentage	number	percentage	number
FCT*				***number***						
Percentage [%] and number of graduates who during their studies undertook an outgoing mobility at least 14 days long	1,6%	2,0	0,0%	0,0	18,4%	26,0	10,3%	3,0	**10,4%**	**31,0**
Percentage [%] and number of students of doctoral studies whose outgoing mobility reached at least 1 month (i.e.. 30 days)							10,3%	3,0	**10,3%**	**3,0**
FET*										
Percentage [%] and number of graduates who during their studies undertook an outgoing mobility at least 14 days long	0,0%	0,0	0,0%	0,0	8,6%	5,0	33,3%	3,0	**8,8%**	**8,0**
Percentage [%] and number of students of doctoral studies whose outgoing mobility reached at least 1 month (i.e.. 30 days)							33,3%	3,0	**33,3%**	**3,0**
FFBT*										
Percentage [%] and number of graduates who during their studies undertook an outgoing mobility at least 14 days long	1,0%	2,0	0,0%	0,0	24,3%	46,0	10,5%	2,0	**12,4%**	**50,0**
Percentage [%] and number of students of doctoral studies whose outgoing mobility reached at least 1 month (i.e.. 30 days)							10,5%	2,0	**10,5%**	**2,0**
FCE*										
Percentage [%] and number of graduates who during their studies undertook an outgoing mobility at least 14 days long	5,6%	6,0	0,0%	0,0	17,3%	14,0	16,7%	3,0	**11,2%**	**23,0**
Percentage [%] and number of students of doctoral studies whose outgoing mobility reached at least 1 month (i.e.. 30 days)							16,7%	3,0	**16,7%**	**3,0**
UCT Prague										
Percentage [%] and number of graduates	***2,2%***	***10,0***	***0,0%***	***0,0***	***19,4%***	***91,0***	14,7%	11,0	**11,2%**	**112,0**
Percentage [%] and number of students of doctoral studies whose outgoing mobility reached at least 1 month (i.e.. 30 days)							14,7%	11,0	**14,7%**	**11,0**
UCT Prague	2,2%	10,0	0,0%	0,0	19,4%	91,0	14,7%	11,0		

Note: * = A faculty or another constituent part of university providing an accredited study programme.

Note: ** = The total values for faculty (last field in the top row of each faculty) and for UCT Prague (all empty fields for the school in the structure of the Annual Report) are not a sum or average of the preceding values in rows or columns. Valued for these cells need to be calculated separately.

Tab. 8.1: Conferences (co)organized by the university (numbers)				
Higher education institution (name)	With number of participants higher than 60		International conferences**	
	Physical***	Virtual***	Physical***	Virtual***
FCT	*1*	*3*	*2*	*3*
FET	*2*	*6*	*0*	*0*
FFBT	*3*	*5*	*4*	*7*
FCE	*0*	*0*	*0*	*0*
Other workplaces in total	*0*	*0*	*0*	*1*
TOTAL	6	14	6	11

Note: * = A faculty or another constituent part of university providing an accredited study programme

Note: ** = International conference means a conference in which at least one foreign speaker participates and where all papers are localized into at least one of the following languages - English, French, German, or other language typical for focus of the conference, e.g. for philology.
Note: *** = A conference will fall into the category if at least 50% participants (you can estimate) participated in the given form. The categories are exclusive.

Tab. 8.2: Experts from application sphere * involved in teaching and practical training in accredited study programmes (numbers)

UCT Prague	Persons with employment relationship with UCT or its constituent part			Persons without employment relationship with UCT or its constituent part		
	Number of persons involved in teaching	Number of persons involved in supervising theses	Number of persons involved in ensuring internships***	Number of persons involved in teaching	Number of persons involved in supervising theses	Number of persons involved in ensuring internships***
*FCT**	*23*	*2*	*0*	*39*	*9*	*80*
women	*5*	*0*	*0*	*20*	*3*	*32*
*FET**	*8*	*1*	*1*	*2*	*3*	*3*
women	*5*	*0*	*0*	*0*	*2*	*1*
*FFBT**	*8*	*0*	*0*	*8*	*5*	*148*
women	*3*	*0*	*0*	*1*	*2*	*81*
*FCE**	*2*	*2*	*0*	*14*	*10*	*40*
women	*1*	*0*	*0*	*3*	*4*	*15*
*Studies outside faculties**	*6*	*1*	*0*	*24*	*0*	*0*
women	*2*	*1*	*0*	*4*	*0*	*0*
TOTAL	47	6	1	87	27	271
women	16	1	0	28	11	129

Note: * = Experts from application sphere involved in at least one third of the hours allocated to at least one course or who supervise a student´ theses. If the worker is an employee of UCT Prague/faculty, he/she should have another employment outside UCT Prague / faculty of at least the same FTE percentage.
Note: ** = A faculty or another constituent part of university providing an accredited study programme/specialization
Note: *** = These are persons with direct responsibility for the student´s performance of professional hands-on work.

Tab. 8.3: Study specialisations/programmes****with obligatory professional practice *** for at least 1 month* (numbers)							
		Number of active studies					
		Bachelor's study		Master's study		Follow-up master's study	
UCT Prague	Number of study specializations/programmes****	Academic profile	Professional profile	Academic profile	Professional profile	Academic profile	Professional profile
FCT	*5*					*114*	
FET	*2*					*14*	
FFBT	*8*					*180*	
FCE	*2*					*48*	
Studies outside faculties	*1*					*12*	
TOTAL	17					368	

Note: * = The duration of the individual internships may have been shorter, but their total must be at least 1 month

Note: ** = A faculty or another constituent part of university providing an accredited study programme/specialization.

Note: *** = Obligatory practice is such hands-on work which is part of the accreditation of the given study specialization; it may be part of some course or a separate course. It is specialized professional practice.
Note: **** = the school will provide information related to the lowest accredited unit - for specialization; if the study programme is not divided in specializations, then the data will be for the study programme.

Tab. 8.4: Transfer of knowledge and research outcomes to practice

UCT Prague				
	In the Czech Republic	Abroad	TOTAL number	TOTAL income in CZK
Number of new spin-off/start-up companies*			3	
Patent applications filed	13	2	15	
Granted patents**	13	3	16	
Registered utility models	17	0	17	
Licence agreements in force as at 31/12.	15	1	16	
New licence agreements	2	0	2	371 263,41
Contract research***, consultations and consulting services***			4 208,00	237 143 855,65
Paid training courses for employees of application sphere entities***			968	14 150 245,24

Note: *= These are new spin-off/start-up businesses supported by the school in the year 2021 (numbers).

Note: **= In case of a European patent, it is reported only once in the "Abroad" field, regardless of the number of designated countries.

Note: ***= The definition of items related to the income and value in the table correspond to the Annual Financial Report for the year 2021 (Table 6). Private higher education institutions will fill in these fields upon their discretion.

Licence agreement is defined as granting the right, to the agreed extent and on the agreed territory, to obtain or to provide a licence to some of the protections of intellectual and industrial property. Licence agreements are made in the form of written agreements on patented inventions, utility models, industrial designs, topography of semiconductor products, new varieties of plants, animal breeds and trademarks. The licensor authorizes the licensee to exercise the intellectual and industrial property rights in the agreed scope and on the agreed territory and the licensee undertakes to provide certain payment (licence fees) or other assets. The licensee is not in the danger of being accused by the licensor of any breach of intellectual property right or copyright.

Contract research is commissioned researched based no cooperation (interaction) specifically meeting primarily the research needs of entities of the application sphere and the higher education institution carries out such research for the private sphere entity according to the entity´s requirements and needs. The entity provides funds to the higher education institution for the research. Typically it involves larger projects, original research, and a written report. Usually, commissioned research is ordered by one external organisation (for its needs). It is not important whether the money paid by the application sphere entity for the research came from public or private funds. The case when a higher education institution receives special purpose support for applied research shall not be considered contract research.

Paid training courses deepen the qualification of employees of application sphere entities (e.g. company´s training courses). Application sphere entity means a legal person whose main activity is not research and development. It may be a business entity, public administration authority, not-for-profit organisation, etc. - always under the condition that the main activity is not research. Incomes will include "tailor-made" training courses, i.e.. upon agreement with the organisation for its employees. It is not quantification of costs incurred to the participants in the training courses who are employed with the company that meets the definition above. On the contrary, these are courses that were created upon agreement with the company because the company wanted to train its employees.

Consultations and consulting services are based on providing expert opinion or activities depending to high extent on the intellectual input resources from the higher education institution to the client. Against payment and in compliance with market conditions, the higher education institution provides consultations and consulting services to application sphere entitles. The main required outcome of consultation is not the creation of new knowledge but understanding of certain situation or condition.

Summary information for Table 8.4

New licence agreements, contract research, consultations, consulting and paid training courses for employees of application sphere entities	Total count	Total income in CZK
	5178	251 665 364,30
	Average income per 1 order	
	48 602,81	

Tab. 12.1: Accommodation, boarding	
UCT Prague	**Number**
Total capacity of the school´s dormitories	**1 650**
Number of beds in rented facilities	**0**
Number of filed accommodation applications/reservations as at 31/12/2021	**1 848**
Number of satisfied accommodation applications/reservations as at 31/12/2021	**1 736**
Number of beddays in the year 2021	**407 438**
Total number of terminated agreements (pandemic)*	**0**
Total number of amended agreements (pandemic)**	**330**
Total number of agreements with exceptions (pandemic)***	**0**
Number of main courses served in the year 2021 to students	**33 618**
Number of main courses served in the year 2021 to the school´s employees****	**1 907**
Number of main courses served in the year 2021 to other clients	**2 448**

Note: * = Number of agreements terminated during the year because of the government´s anti-pandemic restrictions applied to accommodation.

Note: ** = Number of agreements amended during the year because of the government´s anti-pandemic restrictions applied to accommodation. This might be not a formal amendment, but also the performance - typically, reduction in price for accommodation if the student keeps the accommodation but does not physically use it.

Note: *** = Number of agreements which remained in force because they had an exception from the ban on accommodation resulting from the government´s anti-epidemic restrictions applied to accommodation. This is the case of e.g. students who were ordered mandatory work, volunteers, students who declared the dormitory to be their home address, etc.

Note: ****= Records kept only till 07/2021 because of transfer to payment of a monthly lump sum as meal allowance to employees.

Tab. 12.2 Libraries	
UCT Prague	**Number**
New library items for the year	611
physical items	503
e-books in permanent purchase	108
Library fund in total	102 526
physical items	90 604
e-books in permanent purchase	11 922
Number of subscribed periodicals:	
- physical	43
- electronic (estimate)*	15
- in both forms**	0

Note: * = These are only periodicals to which the library subscribes itself (or which the library receives as a gift or exchange) in the paper form or electronic version.; it does not include other periodicals to which library users have access within full-text resources consortia.

Note: ** = The number of titles in both forms include only the titles where both forms are paid separately (i.e.. if the library subscribes to a print and the electronic version is a free bonus, only the printed form is reported, etc.).

Note: = Electronic items include only individually purchased titles, not books and periodicals which are part of "package" subscriptions from publishers of professional and scientific literature.