

FH

University of
Applied Sciences

TECHNIKUM

WIEN

CHANGE OUR
CITY

FACHHOCHSCHULE
TECHNIKUM WIEN

ANNUAL REPORT
2020/21



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FOREWORD

The 2020/21 academic year was once again marked by the pandemic. Throughout the second year of the crisis, our flexible and adaptable approach enabled us to cope well with the continually evolving challenges we were faced with every day, whether studying, researching, or working here at the university. This is also demonstrated by the pleasing results of the student surveys that were conducted over the past three semesters, which revealed high levels of satisfaction with the online study arrangements and the overall conditions at the university.

Despite the continuing effects of the pandemic, things are still moving at pace at the university and there have been many new developments across the whole organization. This is the case not only in quantitative terms—such as the increase in student numbers—but also in terms of the way we are evolving into a more digital, more international, more innovative, and altogether more diverse university.

We have decided to present our university's intellectual capital report in this new magazine format because we believe it is an engaging way to record and reflect on the past academic year and to communicate all the changes that have happened. For example, on the following pages you will find articles about ongoing digitalization in teaching and examples of study programs dedicated to various aspects of

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Florian Eckkrammer and Gabriele Költringer

sustainability. Also included in the magazine are reports on research projects, an international Double Degree Program and—last but not least—the generation change in the Rectorate. In keeping with our mission statement “Change our tomorrow”, we are aiming to present a colorful cross-section of the multifaceted activities that take place within our organization. We hope you enjoy finding out more about another busy year at UAS Technikum Wien.

Vienna, December 2021

Gabriele Költringer
Managing Director

Florian Eckkrammer
Managing Director

Introducing UAS Technikum Wien

PORTFOLIO. UAS Technikum Wien offers a comprehensive range of courses and post-graduate programs, which prepare students for top technical roles in industry, and provides research expertise to a range of partner companies and organizations.

UAS Technikum Wien is Austria's university for technology and digitalization. Since it was founded in 1994, the university has produced over 13,000 graduates. We currently offer 30 Bachelor's and Master's degree programs and six Master's degree courses (continuing education), which prepare our graduates for top jobs in business and industry. Our university is a member of the Association of the Austrian Electrical and Electronics Industries (FEEL).

TEACHING

We do everything in our power to remove any obstacles for new students who are keen to learn. To ensure our students keep pace with the demands of their studies, we provide them with the opportunity to brush up their knowledge before their courses start. We offer warm-up courses in subjects such as mathematics, physics, and engineering to ensure they can hit the ground running when they start their programs. And we also continue to provide the best possible support throughout their studies.

For example, our Teaching and Learning Center provides dedicated learning support services and serves as an access point for all our students.

A LEADER IN R&D

Our university provides research expertise to a range of partner companies, organizations, and institutions. These activities range from innovation checks for small and medium-sized enterprises to transnational EU projects. UAS Technikum Wien has bundled its research capabilities into five key areas:

- Embedded Systems & Cyber-Physical Systems
- Renewable Urban Energy Systems
- Data-Driven, Smart & Secure Systems
- Tissue Engineering & Molecular Life Science Technologies
- Automation & Robotics

FUTURE

Technology currently dominates our daily lives—from smartphones, social media, and self-driving cars to electromobility and digitalization in industry. These developments are why many young people are interested in studying technology-related subjects. In the meantime, industry is crying out for graduates from a variety of technological fields. After all, the biggest problems of our age—from climate change to pandemics—heavily depend on technological solutions. ■





The Year in Time Lapse

BEST OF 2020/21. Awards, podcasts, and staff appointments have been prominent features of the past academic year at UAS Technikum Wien.

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SEPTEMBER

Starting the academic year in the wake of the coronavirus

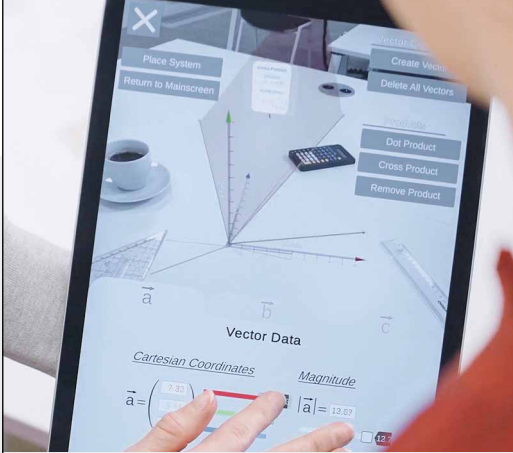
September

2020

SEPT. 24

Austrian Minister for Education visits our university





OCTOBER

UAS Technikum Wien wins the International eLearning Award for its Vector AR3 app and the 2020 KNX Award for the Smart Living Lab.



OCT. 13

The career fair was held online for the first time and was moderated by Mirjam Hie and Ali Mahlodji.

October



NOV. 2

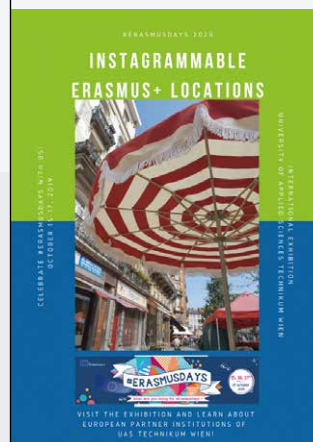
All courses move to distance learning.

December

November

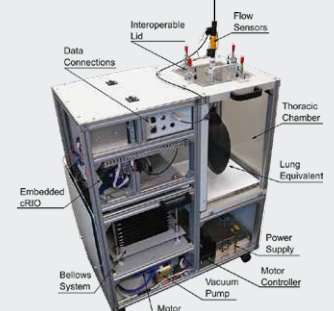
OCT. 15–17 ERASMUS DAYS 2020

Poster exhibition at the "Bridge" and launch of webinar series on internationalization as an interdisciplinary issue in higher education.



DEC. 21

A position paper is published by the Society for Aerosol Research, with the assistance of experts from our university.





MAR. 5 RANKED TOP IN “INDUSTRIEMAGAZIN”

UAS Technikum Wien ranked the best university of applied sciences in Austria.

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JAN. 25
FIT study
info day

FEB. 1
Restructure
of Executive
Board and
management
team.

MARCH

Violeta Kaličanin
assumes the
role of Head of
Finance and
Procurement.

MARCH

Sylvia Geyer
is elected
new Rector
and Stefan
Saueremann
Vice-Rector.

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February

January

2021

FEB. 3
Opening of
the Intensive
Care Unit and
Health & Care
Data Center.



March



MAR. 18/19
Digital open days



MAR. 8 INTERNATIONAL WOMEN'S DAY

Our university marks the day by focusing on raising the visibility of women in technology.

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APR. 21–23 EDUCON 2021

“Women in Engineering” is the theme of the conference co-organized by UAS Technikum Wien.



April

JUNE 2

Start-up partnerships are introduced as a new collaboration format.

JUNE 16

First episode of the Technikum Podcast is aired.

June

JULY 7

The continuing development of Master's programs, including Telecommunications and Internet Technologies, Internet of Things and Intelligent Systems, Game Engineering and Simulation, and AI Engineering is approved by AQ Austria.

May

MAY 7

WAFF enters into a partnership with Technikum Wien Academy.



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July

JULY 28

The renaming of the Master's program Mechatronics/Robotics to Robotics Engineering and the Master's program International Industrial Engineering to Industrial Engineering & Business is confirmed by AQ Austria.

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GENERATION CHANGE IN THE RECTORATE

PROFILES. In March, the staff at UAS Technikum Wien elected Sylvia Geyer as the new Rector and Stefan Sauermann as the new Vice-Rector from 2021 to 2025.

In March 2021, the staff at UAS Technikum Wien determined the succession of Rector Fritz Schmöllebeck and Vice-Rector Christian Kollmitzer, who completed their final academic year in the Rectorate following two successful decades in office. Sylvia Geyer was elected the new Rector of the university and Stefan Sauermann the new Vice-Rector.

Sylvia Geyer holds a doctorate in Business Informatics and has worked at UAS Technikum Wien for more than nine years, most recently as Head of the Competence Center Digital Business and User Experience and interim Head of the Department Computer Science. She has also devised and led several master's courses at the Technikum Wien Academy: Digital Business, Project and Process Management, Business Analytics, and most recently ERP Consulting.

Sylvia Geyer
was elected
as the new
Rector of the
university in
March 2021.



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Her teaching and research activities focus on digitalization, and specifically on processes, relevant business models, implementations in IT projects, digital communication, and the general topic of software support in companies. She has also developed the curriculum and led the team responsible for developing the Data Science Master's program, which has included ensuring the course gained accreditation.

"The complex world we live in today and the drive towards digitalization across society offer very special opportunities for a university specializing in technical courses," Sylvia Geyer explains. "The urgent need for skilled workers and the interdisciplinary challenges in today's labor market will be with us for many years to come. It's up to us to drive the multi-faceted, technical programs we already offer forward into the future and to develop our institution in the most sustainable way possible." ■



The complex world we live in today and the drive towards digitalization across society offer very special opportunities for a university specializing in technical courses.

SYLVIA GEYER
RECTOR

Stefan
Sauermann
is the new
Vice-Rector
from 2021
to 2025.



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NEW CHAIRMANSHIP AND EXECUTIVE BOARD

AN INTRODUCTION. In February 2021, Kurt Hofstädter succeeded Lothar Roitner as President, and Florian Eckkrammer joined Gabriele Költringer as a member of the management team at UAS Technikum Wien.

Florian Eckkrammer was appointed as the second Managing Director of UAS Technikum Wien on February 1, 2021. A native of Salzburg, he is a specialist in Business Informatics and has worked at our university since 2007, where he most recently headed up the Department Computer Science. His main duties on the Executive Board include overseeing the Teaching & Learning Center, research and development, internationalization, partnerships between the university and industry on a national and international level, and IT and process management. Gabriele Költringer continues to head up finance, human resources, marketing and communications, compliance and legal, and quality and facilities management. She will also continue to deal with matters concerning the public authorities.

KURT HOFSTÄDTER IS THE NEW PRESIDENT

In addition to the new management team, there were also changes to the Executive Board. Lothar Roitner, who has been President of UAS Technikum Wien since 2012, retired at the end of 2020. Kurt Hofstädter

has succeeded him as President. He is Director of Digital Strategy at Siemens AG Austria and Chairman of the Board of the Industrie 4.0 platform. "Digital transformation will occupy our energies and attention in Austria—and especially in industry in this country—for many years to come. We can only succeed if our education system produces enough highly qualified and well-trained specialists. UAS Technikum Wien plays a critical role here and is an important factor in the digitalization of Austria. I firmly believe that we will continue to make an important contribution to this by delivering high-quality teaching and research, by being a pioneer in digitalization and by having an international focus. I am pleased to be able to play my part in this." Kurt Hofstädter explains. ■

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Kurt Hofstädter is the new President of UAS Technikum Wien.

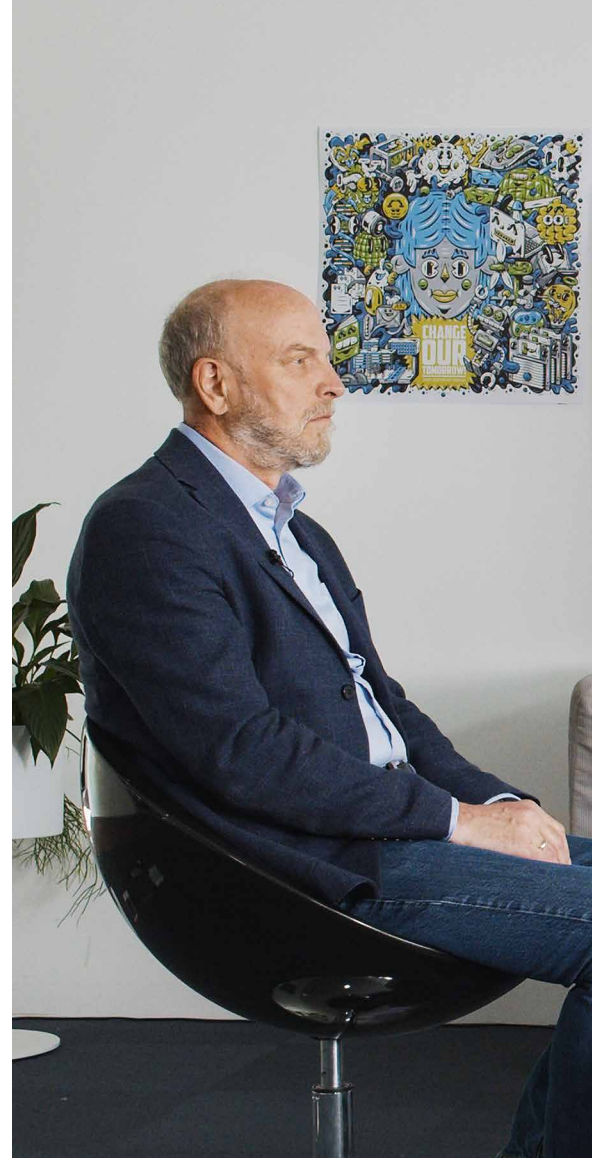
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Florian Eckkrammer was appointed as the second Managing Director at the university in February 2021.

“There was an Innate Degree of Trust from the Early Days”

A FOND FAREWELL. Fritz Schmöllebeck and Christian Kollmitzer completed their final academic year as Rector and Vice-Rector in 2020/21. In this interview, they reminisce on their time in office.



Mr. Kollmitzer, can you remember what you were doing on July 6, 1994?

Christian Kollmitzer: Yes, this was the day I started at UAS Technikum Wien. It was an eventful year for me. I had left my job at Philips and started teaching at TGM (HTL [polytechnic] in Vienna) at Easter and at the University of Applied Sciences in the fall.

When did you first hear about the opening of a university of applied sciences near TGM?

Kollmitzer: When I joined TGM at Easter, there were rumors that a new university of applied sciences was going to be built.

What was the set-up like at TGM back then?

Kollmitzer: Things were more informal and there was plenty of scope for creativity. The first students were very keen and had gone through a ranking and selection

process. It was a very nice place to teach. It still is, but the first cohort is always really special. They were like a tight-knit community of pioneers.

Did you also join the organization during these pioneering days, Mr. Schmöllebeck?

Fritz Schmöllebeck: I signed my first employment contract in 1996, but I had worked there as a contractor lecturer since 1994. I worked at the Vienna University of Technology (TU Wien) for many years after I had completed my studies. In 1993/94, I spent a year at Alcatel SEL in Germany as part of a European program for scientists.

When I came back, I had a similar experience to Christian. There were rumors at TGM and I remember thinking that this could be something really special. It seems



Fritz Schmöllebeck (right) and Christian Kollmitzer have played a key role in shaping the past three decades at the university, including two decades in a leadership role in the Rectorate.

that the brief one-year work placement in industry had fired me up enough to understand the benefits that connecting theory can bring. As I mentioned before, it was really great.

From 2000 onward, you cannot fail to see the new dynamic that came from the milestones that were set, such as when we officially became a university of applied sciences.

Schmöllebeck: Kurt Sohm was Executive Director of the UAS Board. We got chatting during a break from a meeting. We were being very cautious. Kurt was keen to press ahead, believing it couldn't be that difficult to write a ten-page application to become a university of applied sciences.

Kollmitzer: There were many happy coincidences. The fact that we met and

somehow complement each other quite well and slow each other down a little—yes, that's a happy coincidence. We've never really had to argue with one another, have we?

Schmöllebeck: No.

Kollmitzer: But we've disagreed about things.

Schmöllebeck: Yes, funnily enough, we've often said publicly: "No, I don't see it that way," but we've never been reproached for that. There was still an innate degree of trust from the early days.

Kollmitzer: Trust is a good word; it was absolutely fundamental. And there was also the whole team. We could be one hundred percent confident they were all trying to do their best.





I remember trudging through the half-finished new building wearing yellow construction helmets and admiring our suspended lecture hall.

CHRISTIAN KOLLMITZER
FORMER VICE-RECTOR

It was the first Viennese institution to become a university of applied sciences and the Bologna Process was also implemented more quickly than elsewhere.

Schmöllebeck: I firmly believed in this common European system, which is also similar to the Anglo-American system. I realized how brilliant it was and knew we had to do it. It's actually incredible now that I look back on it. We broke down boundaries between all the study programs. We threw everything we had into one pot and made something new from it. Everyone went along with it back then—we all had our own concerns of course.

Kollmitzer: The whole team was convinced that we needed to do it. We knew that if we stalled, as other educational institutions do, we were just wasting energy.

A lot also happened in terms of location and construction in the 2000s.

Kollmitzer: We offered many new student places between 2002 and 2004. That's when it became clear that Meldemannstrasse and TGM were becoming too small for us. The Board and management team were courageous at the time. So, they decided to construct a new building. It was a fantastic time. I remember all the planning and arguing with the architects. And trudging through the half-finished new building wearing yellow construction helmets and admiring our suspended lecture hall.

Schmöllebeck: This was the first time our identity emerged. You wouldn't believe how important it is to be together under one roof. A meeting place where everyone can come together. Before then, everything was more disconnected. Even carrying in the moving boxes was a special moment.

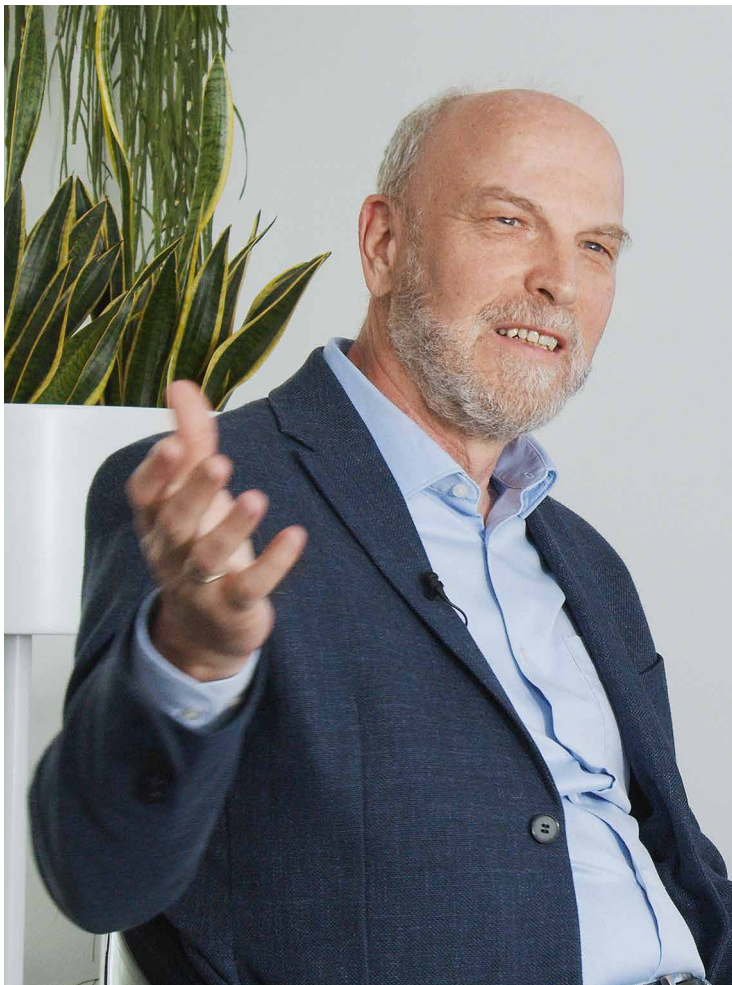
We started the 2010s full of optimism. And there was soon another construction site at Höchstädtplatz...

Kollmitzer: We changed our minds about what we wanted to build several times. It was initially going to be roughly a few thousand square meters. We could see that student numbers were continuing to rise during the planning phase. We realized we needed the space and we could also afford it.

Schmöllebeck: One decisive factor was whether or not we need to construct a bridging structure to Marchfeldstrasse. We didn't know if we could afford it. The building now forms a bridge to our old location, the Globus Building.

By then, they were not just focusing on what was happening at Höchstädtplatz.

Schmöllebeck: We have consciously played our part in developing the sector. We did it for our own benefit in the beginning, especially when we were fighting for more opportunities to deliver sandwich courses... an area of business we wanted to develop. Later on, Angelika Ott and I, in particular, became involved with the Conference of Universities of Applied Sciences and focused a lot of our energies on building networks across the sector. Changes needed to be increasingly made to our general conditions that were impossible for one organization to introduce alone. You have to organize yourselves and work together.





Kollmitzer: I think that much of the credit for this goes to you, because during the many years you were on the Executive Board, you played a decisive role in shaping the universities of applied sciences.

How would you continue to describe the 2010s?

Kollmitzer: From a purely statistical point of view, things slowly stagnated. We therefore saw significantly less growth than before, but growth nonetheless. Index adjustments and changes to funding rates have helped us financially time and time again. And everything has become more and more professional.

Schmöllebeck: I would agree with that. We have seen significant professionalization in virtually all internal areas. In terms of the range of courses offered, we have learned to offer new courses and to restructure the portfolio. And we have also expanded our continuing education offerings considerably.

Kollmitzer: We also experimented with the way we structured our courses with options

such as distance learning programs, dual degree programs, and joint degrees. And we also placed much more emphasis on didactic measures.

And then we were faced with a whole new challenge in 2020 when the coronavirus hit.

Schmöllebeck: It just went “Bang!” and we suddenly found ourselves in crisis mode. We had to decide how to organize the following week and what we needed to do to protect students and staff. This was a very challenging time for me, but it wasn’t terrible. Everyone had their hands full. It sort of felt like driving a car on the highway and then having to concentrate really hard to stay in your lane. The excellent collaborative relationships between the management team bore fruit once again, for example, the great working relationship I had with Gabriele Költringer and later Florian Eckkrammer. It’s no surprise that everyone unites and pulls together in our organization, especially in a situation like this. It’s simply part of our DNA. ■



It’s no surprise that everyone unites and pulls together in our organization.

FRITZ SCHMÖLLEBECK
FORMER RECTOR

New Digital Teaching and Learning Concepts



TEACHING. Even without increased online teaching due to the coronavirus pandemic, digitalization is continuing to play a significant role in teaching at UAS Technikum Wien.

Digitalization is continuing to advance at a rapid pace in all areas of our lives and is also playing an increasingly important role in teaching at UAS Technikum Wien. Initiating a move towards a digitally supported, skills-oriented, and student-centered study program was an obvious step given that the university has many years of experience delivering distance learning. But digitalization in teaching is not just an end in itself at our university. It is implemented systematically to create benefits such as dislocated and asynchronous study. The overarching goal is always to help students achieve their learning goals in the best way possible.

INTERWEAVING CLASSROOM TEACHING AND SELF-STUDY

Since 2019, all Bachelor courses have been systematically redeveloped. In addition to the student-centered structure, the main focus of these changes is to facilitate a blended learning format—a didactic concept that combines elements of online and in-person teaching and learning in the most beneficial way possible. A more flexible and individualized type of learning is created through interweaving periods of classroom teaching and self-study, and by leveraging the appropriate online learning environment.

Digitalization processes usually involve major structural changes. The entire university is involved in this change project and working hard to ensure it is a successful part of our teaching strategy. To secure long-lasting improvements in teaching, we have introduced a sophisticated process that ensures the requirements can be addressed by all stakeholders. The needs of everyone involved and their

communication requirements were firmly established after an initial orientation phase.

Our Teaching & Learning Center (TLC) is available to all parties, such as team leaders, the development team, program and course directors, lecturers, e-learning coordinators and students, along with numerous support services, and is responsible for managing the project.

AN AUTOMATED FEEDBACK SYSTEM

An automated feedback system is one of the digital tools that will support teaching at UAS in the future. The lecturers will be able to use it to provide their students with feedback on how their studies are progressing, among other things. Such a tool is currently under development within the university. “This works much better in areas such as programming, but when it comes to making corrections or giving feedback on technical drawings, such as those used in mechanical engineering, this has already proven more difficult to implement and still requires further development,” explains Managing Director Florian Eckkrammer.

This type of system could not just help students to reflect on their own performance, but with the addition of gamification elements, it could also help to motivate them in their learning and support their individual development. The possible applications extend to analyzing learning behavior and the learning materials, which can be used to provide students with feedback on where there is room for improvement in their learning.

“
The new
system gives
students more
time to focus
on specific
topics.”

FLORIAN ECKKRAMMER
MANAGING DIRECTOR

GREATER FLEXIBILITY AND RESPONSIBILITY

Not being restricted in terms of time and location certainly offers greater flexibility when delivering courses, but it does mean that students need to take more responsibility. This is because they are expected to learn the basics at home through this approach so they are better prepared when they are attending lectures in person. However, this new model also requires students to change their mindsets, which is different to what was expected of them at school. Florian Eckkrammer is convinced that students will benefit greatly from the new system: “This approach gives them more time to study a topic, enables them to understand the topic within the

context of their own work experience, and allows them to prepare in a more focused way. And finally, they are then in a position to ask more interesting questions when they attend lectures in person.” But the role of the lecturer is changing too. We are seeing a move away from teaching content towards an approach that focuses on actively supporting the processes students need grasp to acquire knowledge. The vocational and practical aspects are therefore a central part of the valuable time the students spend with their fellow students (peers) and absorbing their lecturers’ expertise. Instead of merely listening and thinking together with one person during a lecture, skills are developed and consolidated. ■



© UAS THW/HANS LEITNER GRAPHICS:THE NOUN PROJECT/VECTORS POINT

An automated feedback system is designed to reflect student performance and increase flexibility and motivation in learning.



MULTILAYERED SUSTAINABILITY

TURNING WORDS INTO ACTION.

UAS Technikum Wien is aiming to extend its commitment to sustainability across all areas of the organization. The various aspects of this subject area are also part of the curricula in many of the courses on offer at our university.



“Ecology and business are not mutually exclusive: Companies, the environment, and ultimately people can all benefit from the circular economy. Humans are part of the environment. They develop and control the technologies that will determine the future. Future generations must be able to experience the same opportunities as a minimum or better conditions.”

MARTINA ORTBAUER,
PROGRAM DIRECTOR
ECOTOXICOLOGY &
ENVIRONMENTAL
MANAGEMENT



“The IoT is hugely important in helping us to achieve sustainability goals. Many processes can be optimized and made (more) sustainable through the targeted use of IoT systems. In our program, we try to teach sustainability at multiple levels, starting at the technical level through the appropriate selection of hardware and algorithms to the business level through the development of innovations.”

THOMAS POLZER,
PROGRAM DIRECTOR
INTERNET OF THINGS AND
INTELLIGENT SYSTEMS



“Computer science has a far-reaching impact on people’s lives. Information technologies open up completely new and diverse ways to improve people’s lives. Examples include applications that improve health care, those that can make a meaningful contribution to feeding hungry people, and those that help reduce environmental impact through better transportation planning.”

ROBERT PUCHER,
PROGRAM DIRECTOR
SOFTWARE ENGINEERING



“Sustainability has been on everyone’s lips for several years now; robots and automation are widely recognized as being effective ways to increase efficiency. Intelligent machines take over tedious tasks, such as vacuuming, or jobs that endanger human life, such as bomb disposal. Another related benefit of automation is its sustainability and energy efficiency as robots can offer huge benefits in terms of increasing productivity, reducing costs, and helping meet sustainability goals.”

ANDREA MIZELLI-OJDANIC,
PROGRAM DIRECTOR
MECHATRONICS/ROBOTICS



“The Bachelor’s program combines technology and business in an international context and sensitizes students to sustainable business practices. We focus on the development of new products and production processes, and on the organization of efficient management processes. The program offers a balanced combination of basic knowledge of the elementary engineering disciplines and in-depth knowledge of manufacturing technology, industrial engineering, production management, and the circular economy. Our graduates are trained to be innovative-thinking generalists who are able to take on leadership responsibilities and use resources responsibly.”

JUDITH KLAMERT-SCHMID,
PROGRAM DIRECTOR
INTERNATIONAL BUSINESS
AND ENGINEERING
(BACHELOR)



“Energy systems in urban areas are facing major changes—this falls under the heading of climate change and replacing the fossil fuel-dependent energy system. This holds so many opportunities to generate new ideas.”

MANFRED TRAGNER,
PROGRAM DIRECTOR
RENEWABLE ENERGIES



“As a sustainability officer, I’m committed to ensuring that as a university of applied sciences we are making a positive contribution to this important issue and expanding our commitment in a wide range of areas within the institution. In addition to ensuring sustainability is embedded in our study programs, this includes carrying out measures such as optimizing our waste management concept, running our events as ‘green events’, taking into account the ecological impact of business trips, and joining the alliance of sustainable universities. We ultimately want to play an active role in all relevant aspects of sustainability.”

MARIA MARIENSCHENK,
SUSTAINABILITY OFFICER



Winter in Finland: During the past academic year, four students chose to take a double degree program at Lapland UAS in Kemi.

Between Northern Lights and Viennese Way of Life

DOUBLE DEGREE PROGRAM.

Lapland UAS has partnered with UAS Technikum Wien to deliver the Double Degree Program since the winter semester of 2020.

The Double Degree Program allows students to study for one year at a second international university while completing their degree at UAS Technikum Wien. Our university took part in the program during the 2020/21 academic year with seven other partner institutions around the globe (see info box). Lapland University of Applied Sciences (Lapland UAS) has been involved in the Double Degree Program since last winter semester. Four Technikum students completed the

final year of their Bachelor's degree in mechanical engineering at Lapland UAS in Kemi during the 2020/21 academic year. Conversely, two Finnish students joined the Urban Renewable Energy Technologies program at the Technikum.

EXPERIENCING OTHER COUNTRIES AND CULTURES

Tuomas Berg and Jonas Barck wanted to take the opportunity in their final year of study to gain experience abroad and get

to know another country and its culture. Despite an initial degree of culture shock, the two quickly got used to life in Austria's capital city and to the Viennese way of life. Austria's teaching system was initially unfamiliar to the Finnish students. "It works a little differently than in Finland—not worse—just different," explain Tuomas and Jonas, who quickly adapted to their new learning environment.

Even though the two students acknowledged that the whole year was tough for everyone due to the coronavirus pandemic, they felt that the day-to-day activities that were run by the university worked well. They found they were able to make many new friends from all around the world without organized student events. And they also had the opportunity to travel around Austria.

Most of the field trips had to be canceled due to the pandemic; however, Tuomas and Jonas had the opportunity to carry out experiments in the on-site laboratory, which they found to be the most interesting aspect of their studies: "We were able to try out a lot of new things thanks to the extensive facilities at the Energybase." In addition to their excursions to Hallstatt and Linz, the two students will especially remember their many new-found friends.

A YEAR STUDYING ABROAD IN THE FAR NORTH

Technikum students Nicole Körner, Markus Mayer, Markus Sieberer, and Hansi Strobel were attracted by the idea of spending an entire academic year abroad instead of just the usual couple of months. This is why

they chose to join the Double Degree Program at Lapland UAS in Kemi. The four students also liked the idea of being able to experience a different culture and the wonders of the natural environment in Finland—and even the harsh Nordic climate.

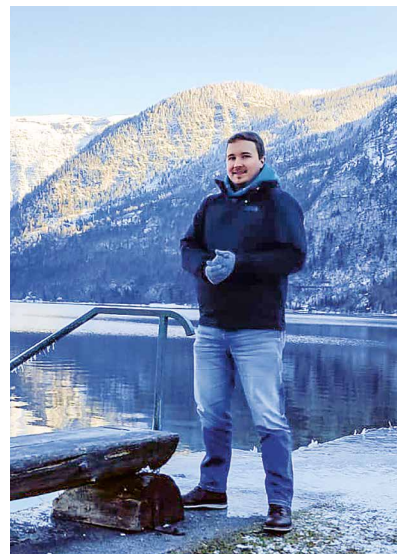
However, at first they had to get used to a different way of studying than the one they were accustomed to at their home university. According to the students, there were hardly any lectures and only a few of them were held online. But this meant they had more time to work on their projects independently according to their own schedules.

Among the subject-related highlights of their exchange experience was the opportunity they had to learn new CAD programs and three different 3D printing technologies. And another high point of their time in Finland was their participation in the 2021 Kemi Snow Sculpturing Contest, where they won first place.

The students sometimes found the long Finnish winter difficult to deal with: "After a few weeks with no sunlight, all the darkness became a little exhausting. But things started to get better again from the end of January." Other than that, the four students give very positive accounts of their experiences in Lapland. When asked about the most special memories they took home with them, they mentioned the Northern Lights, all the snow, winter sports, hiking across the frozen sea—and on top of that their new-found resistance to the cold, which enabled them to withstand minus 32 degrees Celsius. ■

DOUBLE DEGREE PROGRAM

UAS Technikum Wien ran a Double Degree Program (DDP) in partnership with seven other institutions during the 2020/21 academic year. The programs have been conducted with two universities in Sweden, and one university respectively in Argentina, the Czech Republic, Italy, and Russia. The program with Lapland UAS in Finland has run since the winter semester of 2020/21. Lucerne University of Applied Sciences and Arts in Switzerland will join the program in the 2021/22 winter semester. A total of 33 students of UAS Technikum Wien took part in a Double Degree Program last year, and 14 students from partner universities studied at UAS Technikum Wien as part of the program.



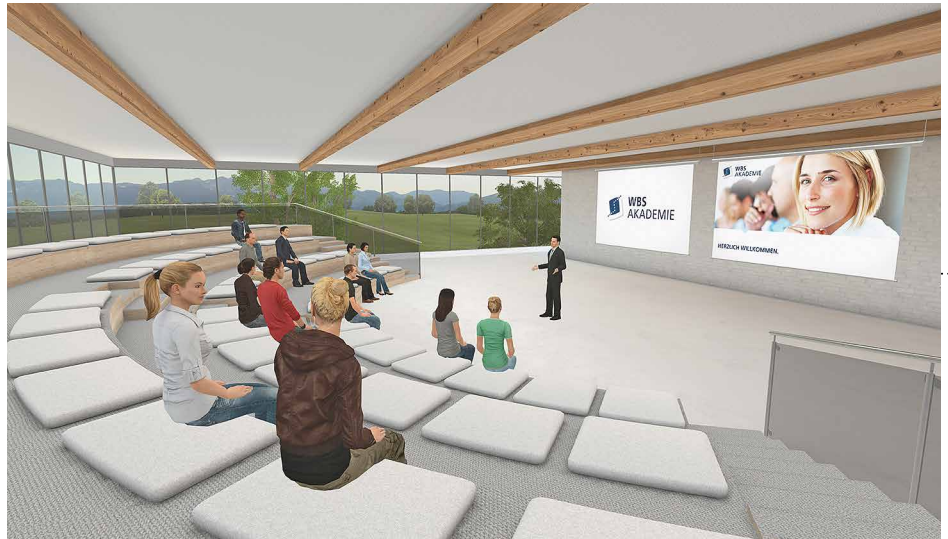
Tuomas Berg and Jonas Barck during an outing to Lake Hallstatt.



DIGITALIZATION— INVESTING IN STABILITY

PORTFOLIO. The Technikum Wien Academy is the continuing education and digitalization academy of UAS Technikum Wien and was able to expand its offerings and increase its intake of students last year. This demonstrates the importance of technical training, especially in times of crisis.

**TECHNIKUM
WIEN
ACADEMY**



Students visit the online lecture hall with their personal avatar.

ON TRACK FOR SUCCESS

The Technikum Wien Academy and the Austrian Rail Industry Association are celebrating the first three graduates to complete the new Master's degree course Rolling Stock Engineering. The students have all successfully completed their master's examinations. The course is aimed at people with relevant technical experience who want to expand their career opportunities in the rail industry and work on the mobility solutions of the future.

The graduates with the coordination teams from the Austrian Rail Industry Association and the Technikum Wien Academy.



NEW COURSE HELD IN THE VIRTUAL LEARNING ENVIRONMENT LEARNSPACE

The new Master's degree course Engineering Management enables students from fields such as business, law, and communications to play an active role in shaping digital transformation on an equal footing.

The course content and teaching formats are completely innovative. The entire study program takes place in a virtual learning environment called WBS LearnSpace 3D. Students visit the online lecture hall with their personal avatar at set times.



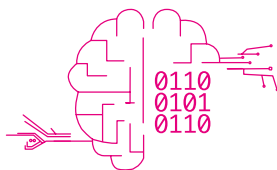
PARTNERSHIP BEGINS WITH WAFF

Since the 2020/21 academic year, the Vienna Employment Promotion Fund (waff) has been working in partnership with the Technikum Wien Academy to develop a new training model for job seekers with a talent for technology, enabling them to train as junior software developers. Participants in the program are offered a permanent job in one of the companies participating in the funded projects when they have completed the training. The course was successfully launched in April and delivered via distance learning to 25 participants. The program is set to run again during the next academic year.

The new training model enables tech-savvy job seekers to train to become junior software developers.

THE TECHNIKUM WIEN AI ACADEMY

Data is the “oil of the 21st century”. The megatrends of digitalization and automation are accompanied by buzzwords such as business intelligence, big data, artificial intelligence, machine learning, and deep learning. The Technikum Wien Academy is focusing on these topics in conjunction with the AI Academy and offering a number of educational programs, ranging from short seminars to Master's degree courses. There is a huge amount of interest in these programs. The practical seminar Data Science and Machine Learning was the first course to be held by the AI Academy at the beginning of October 2020 and was completely booked out. There is also strong demand from companies for in-house training courses. In September 2021, the Master's degree course Business Analytics was launched as a four-semester course that leads to an MSc degree.



BUSINESS ANALYTICS

STRONG DEMAND FOR IN-HOUSE TRAINING COURSES

Demand for in-house training has increased, especially during the pandemic. Companies' training initiatives are part of their digitalization agenda. A1 Telekom Austria is one of the Technikum Wien Academy's main partners and booked the in-house ICT Advanced Level training course again last year. Other training programs focusing on information and communication technologies have already been scheduled. The Technikum Wien Academy registered 150 participants in total from various large concerns and SMEs.

RECORD REGISTRATIONS

The Technikum Wien Academy kicked off the fall with a new record of 100 registrations on its Master's degree courses. The pandemic has significantly accelerated the development of digitalization and technology. Our high registration figures again show that despite financial uncertainties investing in technical training is still a high priority.

NEW CERTIFICATIONS

The Technikum Wien Academy has been offering two new certifications since the past academic year. The two-part UXQCC seminar offers extensive user experience training, while IQBBA covers business analysis. An examination is taken at the end of each seminar and successful candidates achieve internationally recognized certification.



The Entrepreneurial Spirit

BUSINESS MODELS.

Entrepreneurship is an important part of UAS Technikum Wien's culture of innovation. The university has expanded its team in this area and created new offerings for startups.



UAS Technikum Wien has been supporting companies and start-ups for many years as part of its Entrepreneurship in Technology initiative. The entrepreneurship and start-up culture is an integral part of the university's innovation strategy. The vision is based on enabling teaching, research, and innovation to form an inter-related cycle, which enables new ideas, business models, and solutions to emerge that will succeed in tomorrow's marketplace. This vision also aligns with our university's mission statement "Change our tomorrow", which encapsulates the idea of making the world a better place.

Rafael Rasinger became Manager of the Scale-ups, Innovation, and Networks team at the beginning of May 2021, bringing with him extensive knowledge and experience of the start-up environment. Rafael Rasinger previously worked at the international trade consultancy Aussenwirtschaft Austria and has lectured at the Technikum since 2012. He is now responsible for overseeing the university's innovation programs, supporting scale-ups, and expanding partnerships with businesses and contacts with graduates.

ZONE14: INTELLIGENT TRAINING

In the summer of 2021, Rafael Rasinger and his team secured a new partnership with the young Viennese company zone14, which focuses on the use of artificial intelligence in analyzing soccer training videos. The company's founders Simon Schmiderer, Lukas Grömer, and Tobias Gahleitner are graduates of



Simon Schmiderer, Lukas Grömer, and Tobias Gahleitner's company zone14 has been a partner of our Entrepreneurship Initiative since the summer of 2021.



Rafael Rasinger has headed up the Scale-ups, Innovation and Networks team since May 2021.

UAS Technikum Wien and TU Wien. They applied to join the Entrepreneurship Program and were granted office space and extensive mentoring from staff at our university.

COLLABORATIONS & "DO-TANKS"

During the spring, the university and the Technikum Wien Academy were selected to become partners of inno up, a start-up collaboration challenge run by the Austrian Economic Chamber (WKÖ). As part of this initiative, young companies were called upon to develop solutions for a didactically diverse student response system.

The innovation team kicked off the process with two "do-tanks" as part of the development of the university's internal portfolio. A total of 60 participants contributed their ideas, which were summarized into 20 lead topics. These topics will be ranked in importance during the follow-up do-tanks and validated on an international level. The plan is to implement them in practical terms at a later stage.

NEW START-UP PARTNERSHIPS

The Entrepreneurship Team is also forging ahead with the development of a range of services for companies in order to expand the university's corporate partnerships. This means the university can now offer a special partnership package for start-ups. This includes the option to post unlimited job advertisements on the Technikum job platform and to attend career events at UAS. The idea is to provide all types of companies—whether established or in the start-up phase—with tailored support for talent acquisition and growth.

The partnership also promotes knowledge transfer between our university and start-ups through specialist events, joint projects, or master's theses. The start-up MyPrivacy GmbH was the first company to express an interest in partnering with UAS Technikum Wien. Six start-up partners are now on board the new program. ■



PEOPLE AND SKILLS

PERSONNEL NEWS. New employees in lead positions and their career histories.

DAVID RÜCKEL

obtained his degree and doctorate at the Johannes Kepler University in Linz. After working at various universities, he has been a lecturer at our university since 2019 and has been Head of the Digital Enterprise & UX Department since June 2021.

STEFAN PASCHEK

has a Master's degree in Embedded Systems from our university. After graduating, he went to Karlsruhe University of Applied Sciences and then returned to the Technikum as Head of Competence Center IoT and Electronics.

BERNHARD KNAPP

from Graz is director of the new Master's degree program AI Engineering. He obtained a post-doctoral lecturing qualification at the age of 29, making him the youngest person ever to do so at MedUni Vienna. He has also gained teaching and research experience in Oxford and Barcelona.

SYLVIA LINGO

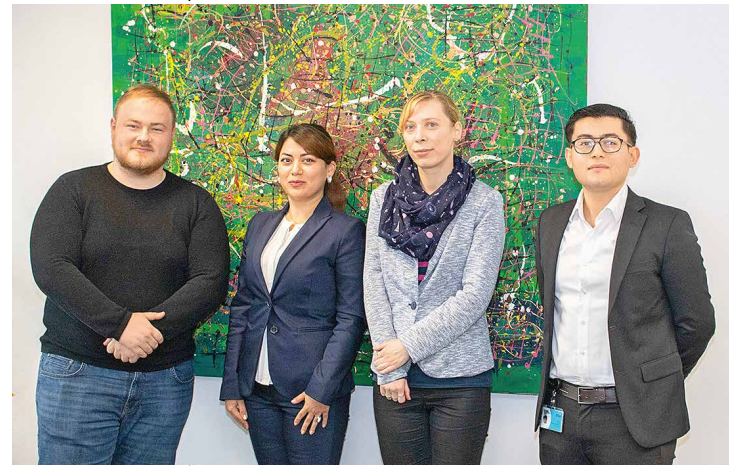
is a native of Carinthia. An experienced educator, she has been awarded the state Ars Docendi prize in the "Digital Transformation in Teaching" category. After working at the University of Vienna, she now heads up the Teaching & Learning Center.

GUNTRAM DIEM

is the new Head of the Department Materials Science & Mechanical Systems. He studied mechanical engineering at TU Wien and brings many years of professional experience to UAS.

ISABEL DREGELY

has headed up the Department Artificial Intelligence & Data Analytics since June. The German doctor of physics acquired teaching and research experience in Germany, the US, and the UK before moving to UAS Technikum Wien.



DIVERSITY IN ACTION

Our university staff currently come from 54 different countries. Diversity in action at our campus is evident in the Unit Finance & Procurement which comprises colleagues from many different countries. This includes (from left) Osman Erkan Öztürk (Turkey), Aisan Kaltehei (Iran), Laura Seidl (Romania), Adam Mahmoud (Syria), and Olga Shepelyeva (Ukraine—not pictured). In addition to focusing on common professional goals, a great deal of emphasis is also placed on cultivating a strong team spirit. For example, the team enjoy cooking and eating together—often international cuisine from their respective countries of origin.

ANDREA MIZELLI-OJDANIC

comes from Bosnia-Herzegovina and completed her PhD in physics at the University of Vienna. She has worked as a research associate at CERN in Geneva and at the University of Vienna. She initially started as a lecturer/researcher at UAS Technikum Wien. Since the academic year 2020/21, she has been director of the Bachelor's and Master's degree programs Mechatronics/Robotics. ■

ALUMNI PROFILES

PERSPECTIVES. Our highly qualified graduates are offered a wide range of job opportunities. We regularly present selected alumni in our video profiles. Here is a small selection of them.



HELPING TO SHAPE THE MOBILITY OF THE FUTURE

Rebekka Kessler is a software system designer in the Mobility Solutions Division at Robert Bosch AG. She graduated with a Bachelor's degree in Transportation and Environment (amalgamated into a Bachelor's degree in Computer Science) and is studying for a master's degree in Innovation and Technology Management whilst working at Bosch. "My studies equipped me with both soft and hard skills. I was able to join Bosch directly off the back of my internship."



BRINGING SUSTAINABILITY TO THE PLASTICS INDUSTRY

Anita Reichebner has completed her Bachelor's degree in International Business and Engineering. As the New Business Manager at Semadeni Plastics Group, she focuses on future-oriented models for the industry and oversees projects that focus on sustainability. "My studies helped me to see the big picture."



INNOVATION IN SPORT

Michael Kabicher studied Sports Equipment Technology and now works as an account manager at Boa Technology on innovative closure systems for sports shoes manufactured for the running, cycling, and snowboarding sectors. "The sports aspect was an exciting part of my degree—and being able to combine this with business and marketing."



MAKING A CONTRIBUTION TO THE ENERGY TRANSITION

Tara Esterl is Head of Integrated Energy Systems at the AIT Austrian Institute of Technology. She completed a Master's degree in Urban Renewable Energy Systems at UAS Technikum Wien. Together with Mario Weissensteiner (homee GmbH) and Kurt Leonhartsberger, Head of the Research Focus Renewable Energy Systems, she is working on the FFG-funded research project CLUE, which involves optimizing the design, planning, and operation of energy communities. Tara explains what motivated her to choose this course of study, "I wanted to make a contribution to the energy transition and found that I needed the right expertise and problem-solving skills to achieve this."



All profiles can be viewed on our YouTube channel.

Living in a Plastic World

RESEARCH. A project funded by the City of Vienna focuses on the risks that microplastics and nanoparticles pose for humans and the environment, and is ensuring that the topic is embedded in the teaching at our university.



Nano- and microplastic particles can be found everywhere in the environment.

Microplastics are everywhere. “We now know that each person ingests about five grams of microplastics each week, primarily through food,” explains Elisabeth Simböck, Lecturer at the Faculty Life Science Engineering. The potentially harmful effect that microplastics and nanoparticles can have on humans and the environment has been discussed in the public arena for many years. And awareness in society of the problem has also increased in recent years. In a project funded by the City of Vienna, a team of experts from UAS Technikum Wien has been studying the risks that microplastics and nanoparticles pose for humans and the environment since spring 2021. The topic is thus also embedded within the Ecotoxicology and Environmental Management Master’s degree program over the long term.

Nano- and microplastic particles can enter food via packaging or are deliberately added to it. These particles are also found everywhere in the environment. They pollute the oceans and beaches, and plastic particles are also found in the air in cities due to processes such as tire abrasion. These substances are also inhaled by humans through aerosols. Washing clothes made of plastic fibers sends microplastics into sewage treatment plants, and then into the soil and groundwater. When micro- and higher organisms ingest the small plastic particles, they then enter the human food chain. This turns into a seemingly endless cycle.



Thomas Machacek, Katharina Wiessner, and Elisabeth Simböck (from left) are working on a project to investigate the effects of microplastics and nanoparticles on humans and the environment.

“
Each person
ingests about
five grams of
microplastics
each week,
primarily
through food.”

ELISABETH SIMBÖCK
HEAD OF THE COMPETENCE
TEAM MICROPLASTICS
AND NANOPARTICLES

EMBEDDING THE SUBJECT INTO TEACHING

It is proven that these persistent nano- and microplastic particles remain in the environment for an extremely long time. This is a particular concern because their accumulation and ability to form further potentially toxic compounds pose a high risk. The extent to which plastic ingestion impacts our health is not yet clear. Elisabeth Simböck believes that this makes it all the more important to investigate this concern more closely.

Thomas Machacek, Katharina Wiessner, and Elisabeth Simböck from UAS Technikum Wien are focusing on this highly topical issue by embedding the focus on microplastics and nanoparticles in the Ecotoxicology and Environmental Management Master's degree program. “We also want to use it to further raise awareness,” Elisabeth Simböck adds. Embedding the topic within our teaching also supports the training of essential specialists, who can provide their support and expertise on environmental and climate protection matters to stakehold-

ers such as political decision-makers and companies.

CONDUCTING RESEARCH PROJECTS WITH STUDENTS

Our experts want to deepen their knowledge of how microplastics and nanoparticles behave through the research projects they carry out with students. “We are interested in questions like: Which plastics are problematic? Which additives used in the plastics industry are particularly dangerous? Are there sustainable alternatives from a ‘green chemistry’ perspective? And are these alternatives actually less of a concern for the environment and health?” It is planned to develop test systems for integrated ecological- and human-toxicological risk assessments. The focus lies primarily on genotoxicity tests, which involves investigating the mechanisms in chemical substances and their effects on genetic material. Elisabeth Simböck concludes, “We also want these projects to help us get a better overall picture and to understand how certain substances affect an ecosystem and humans.” ■

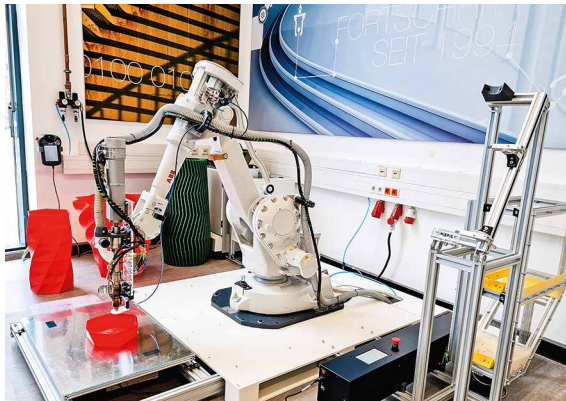
News in a Nutshell



The effects of aging on the regenerative capacity of body tissue are being investigated in the Aging Tissue project.

UNDERSTANDING THE AGING PROCESS

The Aging Tissue project is funded by the City of Vienna and is being conducted by a Technikum research team which focuses on tissue engineering and molecular life science technologies. The project aims to investigate the effects of age on the regenerative capacity of body tissue. The team aims to research the molecular mechanisms involved in the development of age-specific diseases and identify appropriate therapy options. The researchers will also examine in more detail specific food ingredients and their protective effect on cells, and the role they play in the regenerative capacity of body tissue. The team wants to use the research to develop anti-aging treatments.



3D printing of complex free-formed parts using articulated robots.

3D PRINTING WITH A ROBOT

Research is currently being conducted at our Digital Factory to determine how 3D printing technology can be combined with robot technology. The aim is to produce complex free-form parts that do not need supporting materials. Unlike standard 3D printers, articulated robots can be used to print in completely axial directions—including horizontally—which can be used to produce more stable structures and unusual designs.



Fritz Schmöllebeck, Gerd Krizek, and Sylvia Geyer with HFS Director Maria Ettl.

A TEN-YEAR PARTNERSHIP BETWEEN TECHNIKUM AND HERTHA FIRNBERG SCHOOLS

UAS Technikum Wien has been collaborating with the Hertha Firnberg Schools (HFS) in the field of communication and media design for ten years.

The partnership aims to promote an interest in studying STEM subjects at university and to break down the barriers which deter young people from attending university. The students receive their lessons once a week at the Technikum, and our lecturers also teach science subjects from first to fifth grade at HFS. The young people can complete their compulsory work experience at the university, and the educational institutions also help the final-year students to identify appropriate topics for their final-year projects.

The partnership is coordinated by Gerd Krizek, Head of the Department Applied Mathematics and Physics, and forms an integral part of the Knowledge Transfer Center East Initiative, which focuses on STEM subjects.

It also helps HFS graduates to choose the right course of study at our university each year.



ENERGY FLEXIBLE BUILDINGS

A team focusing on renewable energy systems is looking at user comfort in energy-flexible housing projects for the FFG-funded research project Flucco+. Buildings and neighborhoods designed in this way can help relieve the burden on energy networks by using appropriate fittings and design, and reduce consumption through the intelligent use of energy. However, it is important to take into account the fact that residents react differently when their comfort levels may be restricted due to temperature fluctuations, so the research project is focusing particularly on this aspect. The project team also conducted surveys among residents taking part in energy-efficiency pilot schemes and collected data on users' temperature perception in laboratory conditions in the "Façade Box" provided by AAE Intec in Gleisdorf (Styria). The project results are expected to help provide a more solid basis for planning decisions in the housing construction sector.

The project team collected data in the "Façade Box" in Gleisdorf about users' temperature perception.

NEW WORKSPACE FOR THE COMPUTER SCIENCE DEPARTMENT

Major renovations to the building infrastructure were the exception to the rule at UAS Technikum Wien during the 2020/21 academic year due to the coronavirus pandemic. The new workspace for the Computer Science Department on the fifth floor of the A Building was one such exception. There are 49 workplaces for employees, three meeting rooms and a communal kitchen over an area of 718 m², all with a modern look and feel. Green room dividers between the work zones break the space up visually and bring a touch of nature into the space.

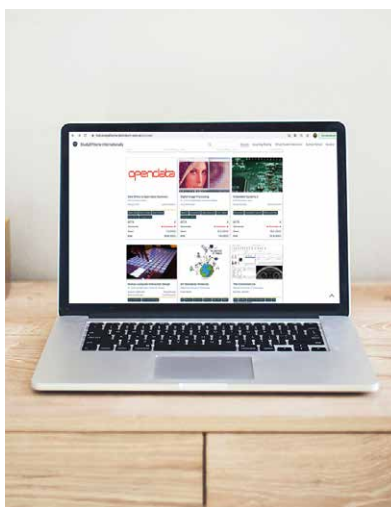


Green room dividers break up the space visually.

VIRTUAL MOBILITY

As part of the "StudyATHome Internationally" project, a team at UAS Technikum Wien has developed an international teaching program for students including the field smart homes and assistive technologies. Students can study via virtual mobility with three partner universities, and a central web platform serves as an information and communication hub. The program is primarily designed for people who are less mobile due to work or family commitments or due to a disability, and who are unable to spend a longer period of time abroad. The project was successfully implemented at the university during the past academic year for the first time.

© UNSPLASH/KARI SHEA



The StudyAT home hub is the project's main web platform.

The Faculty Industrial Engineering is focusing on the synergistic application of AR and VR in manufacturing, robotics, and industry.



FROM VIRTUAL MAINTENANCE TO THE METAVERSE

INTERVIEW. Horst Orsolits and Maximilian Lackner discuss the use of virtual and augmented reality systems in digital production—and beyond.

Virtual and augmented reality are becoming increasingly important in many areas of industry. The book *Virtual Reality and Augmented Reality in Digital Production* (Springer Gabler, 2019) is dedicated to this topic and includes contributions from many experts from around the world. It was edited by Horst Orsolits and Maximilian Lackner from the Faculty Industrial Engineering.

In which key areas are VR and AR utilized in digital production?

Maximilian Lackner: I have observed that they are being widely used in the area of training. For example, they can help new employees to be onboarded much more quickly or can assist with the communication of complex issues.

Horst Orsolits: Employee training, maintenance, and repair are currently the most common applications in industry. Many processes relating to repair and assembly instructions can be supported digitally.



© BOTH IMAGES: UASTW/HANS LEITNER

There are studies that confirm that these sorts of processes can be accelerated by up to 40 percent.

What about the direct integration of VR/AR technologies into production processes?

Orsolits: Industry is adopting a wait-and-see attitude. However, assistance systems are increasingly coming into focus, where companies can gain advantages in the marketplace by producing smaller batch sizes and using more flexible production processes. Immersive technologies can achieve significant reductions in setup times.

The book also deals with the subject of virtual learning environments.

Has the coronavirus pandemic accelerated development in this area?

Orsolits: The pandemic has been a particularly powerful driver of virtual learning. More and more virtual worlds have been emerging for many months. A notable example is Facebook's virtual reality space Meta. Microsoft has also entered the fray with the launch of Microsoft Mesh, a mixed reality platform that will allow geographically distributed teams to meet or attend events at any time. Spatial.IO is also making huge progress in this area.

This tool enables you to hold meetings, design workshops, and create 3D avatars. You are filmed and then see yourself in the virtual space. It's another step towards immersion.

Where is the topic of VR/AR currently represented in research and teaching at UAS Technikum Wien?

Orsolits: Here at the Faculty Industrial Engineering, we focus on the synergistic application of AR and VR in manufacturing, robotics, and industry. I believe that the technologies have now also reached a high enough level of maturity to be used in the lecture hall or in distance learning. When it comes to integrating virtual technologies into teaching, we have recently been running a research project funded by the City of Vienna which aims to facilitate virtual laboratory practicals and AR experiences to make learning easier.

How do you think VR and AR are going to evolve over the coming years?

Orsolits: It is perfectly conceivable that there will be platforms where you log into something that will be like a digital copy of the real world. People will meet in these virtual environments, take part in meetings, or go shopping. And then a few hours later, the thing you have purchased will be right there on your doorstep. In terms of technology, we're hearing from Silicon Valley that data glasses will be so comfortable and of such a high quality in three to four years, they will soon become a pretty much indispensable part of daily life.

Lackner: I would like to add one important point from the perspective of services. Manufacturers don't just want to sell products, they also want to sell services and are moving towards providing training for customers directly. Customers will simply put on a pair of special glasses and the manufacturer will be able to help with troubleshooting and maintenance. This could be difficult for local retailers, service providers, and service businesses. It means value creation will be brought back into the hands of the manufacturers. ■

Operating a robot using AR technology.



FIND OUT MORE ABOUT THIS TOPIC

The full-length version of this interview can be found in the Newsroom on the UAS website.



Tuning into the New Technikum Podcast

CONVERSATIONS. The Technikum Podcast has been providing weekly insights into teaching, researching, studying, and working at UAS Technikum Wien since the middle of June 2021 and has been focusing on the theme “People, Topics, Contexts”. Each weekly episode is produced in partnership with Radio Technikum and can be listened to on Soundcloud, Spotify, Apple Podcast, YouTube, or via our website at www.technikum-wien.at/podcast.

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JULY 7

Daniel Leutgeb, Head of the EBC*L Academy, discusses the European Business Competence* License.

JUNE 23

Program Director Andrea Mizelli-Ojdanic discusses robotics and mechatronics.



2021

June

JUNE 16

First episode is aired with Kurt Leonhartsberger, Head of the Renewable Energies Research Focus, who shared his thoughts on climate change, renewable energies, and electromobility.



July

JUNE 30

Managing Director Florian Eckkrammer talks about digitalization in teaching.



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JULY 21

Data scientist
Matthias Blaickner
discusses smart
maintenance.

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JULY 14

Lecturer Friedrich
Kupka talks about
solar ponds, latte
macchiato, and
astrophysics.

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AUG. 4

Lecturer and
researcher
Elisabeth
Simböck
talks about
microplastics.

August

AUG. 11

Dominik Widhalm
discusses the
doctoral program
run by UAS
Technikum Wien
and TU Wien.



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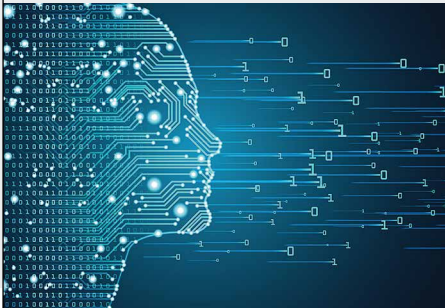
AUG. 18

Head of the
International
Office Agnes
Kriz talks
about studying
abroad during
the coronavirus
pandemic.

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JULY 28

Lecturer Lars
Mehnen gives the
lowdown on
artificial intelligence.



AUG. 25

Ali Aburaia, Head of
the Digital Factory,
discusses flexible,
robot-assisted
production processes.



FROM UAS TO A CAREER IN RESEARCH

DOCTORATE. Dominik Widhalm is one of 20 international postgraduates who are currently part of a doctoral program run jointly by UAS Technikum Wien and TU Wien.

The joint doctoral program run by UAS Technikum Wien and the Faculty Computer Science at TU Wien started in the winter semester of 2018 and focuses on resilient embedded systems. The two universities are providing a high-quality scientific program that also offers graduates from universities of applied sciences the opportunity to access doctoral studies on a structural basis. A total of 20 international students are currently taking part in the pilot project. The group includes Dominik Widhalm, who has already completed a Bachelor's degree in electronics and a Master's degree in Embedded Systems at UAS Technikum Wien.

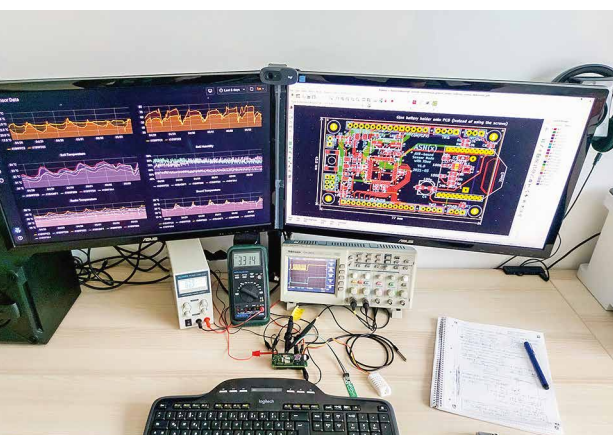
Dominik Widhalm was among the first group of applicants who embarked on the joint project in 2018. Since then, two more cohorts have started the doctoral program, bringing the total number of places to 20.

Following the application process, the participants completed a one-year introductory phase. This ensures that the students, who come from all parts of the world, can be brought up to the same level of proficiency. As Dominik Widhalm explains, "Among other things, I attended lectures on particularly challenging formal methods in computer science and discrete mathematics." Looking back, he feels that he benefited greatly from going through the introductory phase: "I managed to gain a new perspective on certain issues during this period. I also had to grapple with more theoretical and abstract content than I was used to at UAS." He explains how he learned that it can sometimes be helpful to take a step back in order to appreciate the wider picture. "This is a good way to find new problem-solving strategies."

ONE DOCTORATE, TWO UNIVERSITIES

Dominik Widhalm's scientific studies are supervised by a member of staff from each of the participating universities: Karl Göschka from UAS Technikum Wien and Wolfgang Kastner from TU Wien. Although he is formally completing his doctorate at TU Wien, he is employed at the Technikum for 30 hours a week as part of the program. Teaching at our university gives him the opportunity to earn as much as he would working in a full-time position.

Dominik Widhalm explained how, during the first year of his studies in particular,



Dominik Widhalm is focusing on error behavior in sensor networks as part of his dissertation project.

A portrait of Dominik Widhalm, a man with short brown hair, a beard, and glasses, wearing a blue button-down shirt. He is standing with his arms crossed against a blurred outdoor background.

Dominik Widhalm is completing the joint doctoral program at UAS Technikum Wien in Resilient Embedded Systems.

he had the chance to connect with colleagues from countries such as Egypt, Canada, Pakistan, and Iran. The group supported each other especially during the initial phase by helping each other to prepare for their exams and meeting on numerous occasions in private. The doctoral students now share ideas once a month via a webinar.

DISSERTATION BASED ON SENSOR NETWORKS

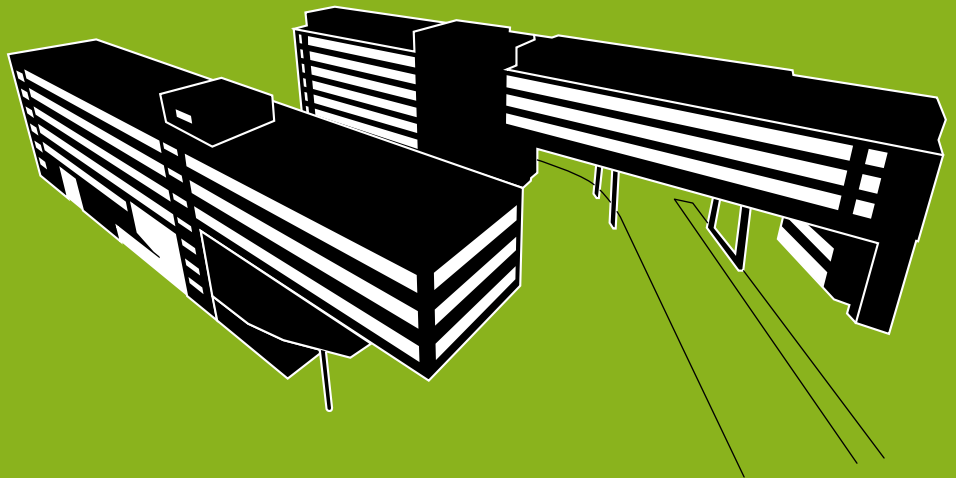
Dominik Widhalm is working on error behavior in sensor networks as part of his dissertation project. These networks can be used in areas such as the agricultural sector to capture environmental data. Dominik Widhalm is focusing especially on the development of a kind of artificial "immune system" that can automatically evaluate whether the data that is collected is actually correct on a self-learning basis.

A MODEL PILOT PROJECT

Dominik Widhalm explains that he has become well versed in the differences between UAS and TU since the program started. For example, both institutions pursue different objectives in the most beneficial ways possible. The Technikum focuses more heavily on practical applications and produces highly qualified specialists to work in industry, while TU Wien has a stronger academic and theoretical focus. Either way, Dominik Widhalm is certain that he wants to continue working in research once he has completed the doctoral program. And he hopes that his degree will also serve as a shining example and make it easier for UAS graduates to start a doctorate at a university in the future. ■

The 2020/21 Academic Year in Figures

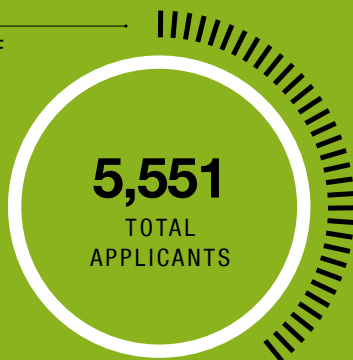
STATISTICS. On the following pages, we have presented facts and figures from a wide variety of areas within our university. They provide a quantitative overview of the situation during the 2020/21 academic year in terms of teaching, research, staff, continuing education, infrastructure, and internationality.



NUMBER OF APPLICANTS

2,143

NUMBER OF PLACES OFFERED



38.6%
APPLICANTS ACCEPTED

NUMBER OF PROGRAMS

TOTAL



PART-TIME PROGRAMS

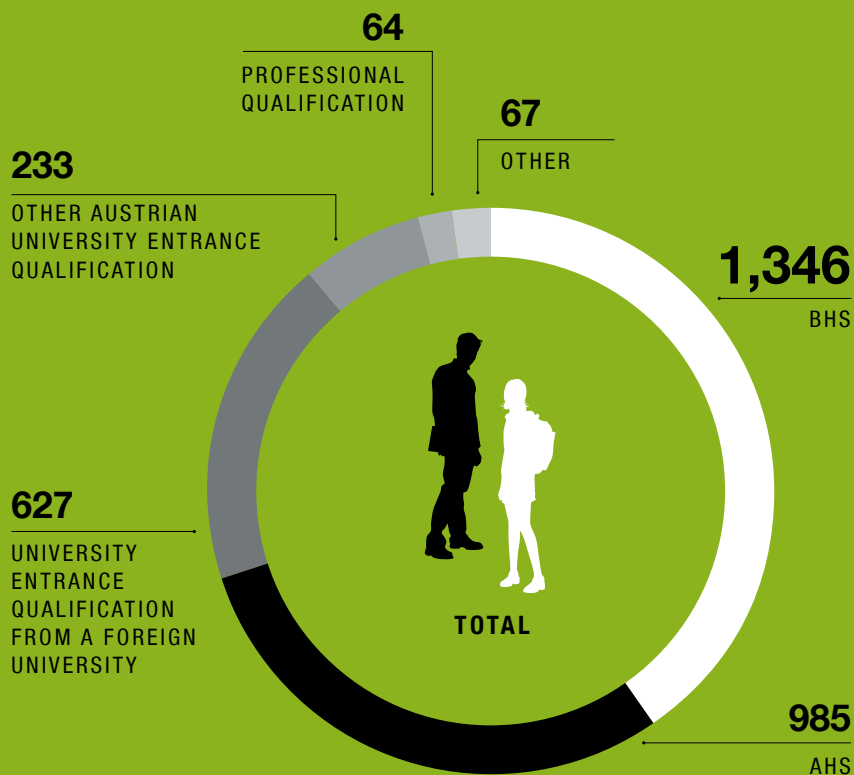


FULL-TIME PROGRAMS

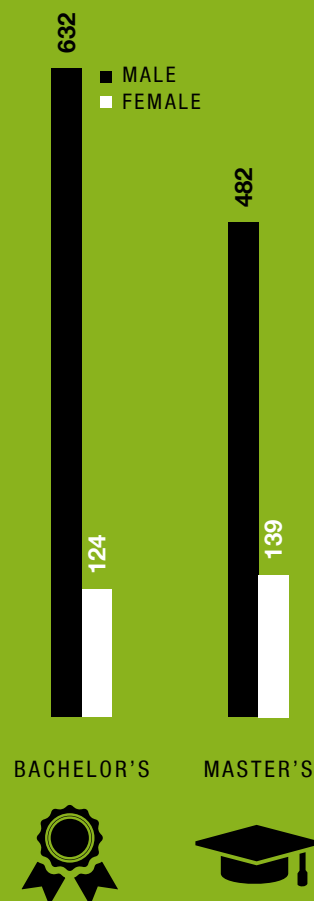


* 1 MASTER'S COURSE THAT OFFERS BOTH PART-TIME AND FULL-TIME PROGRAMS

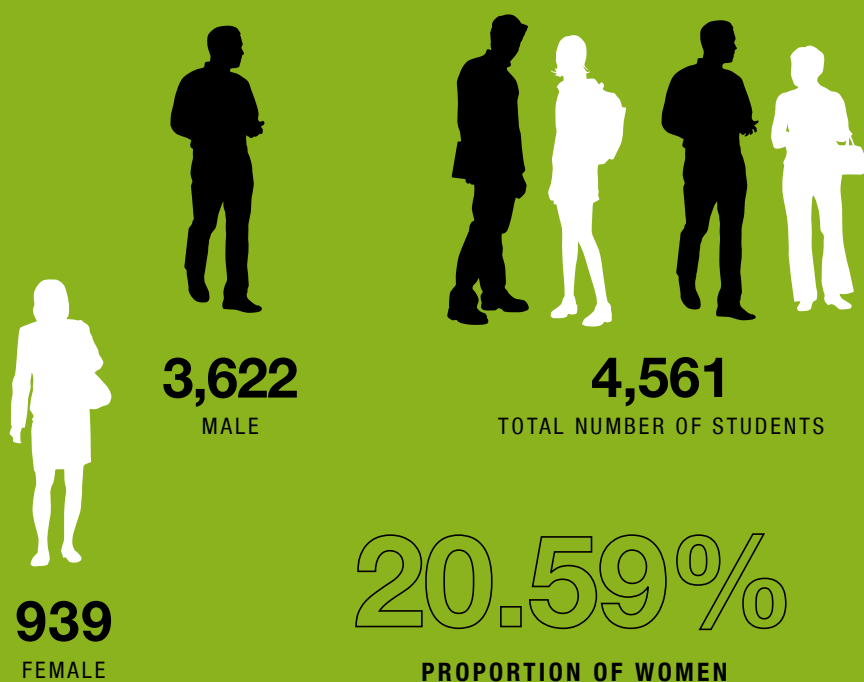
BACHELOR STUDENTS BY SCHOOL TYPE



NUMBER OF GRADUATES

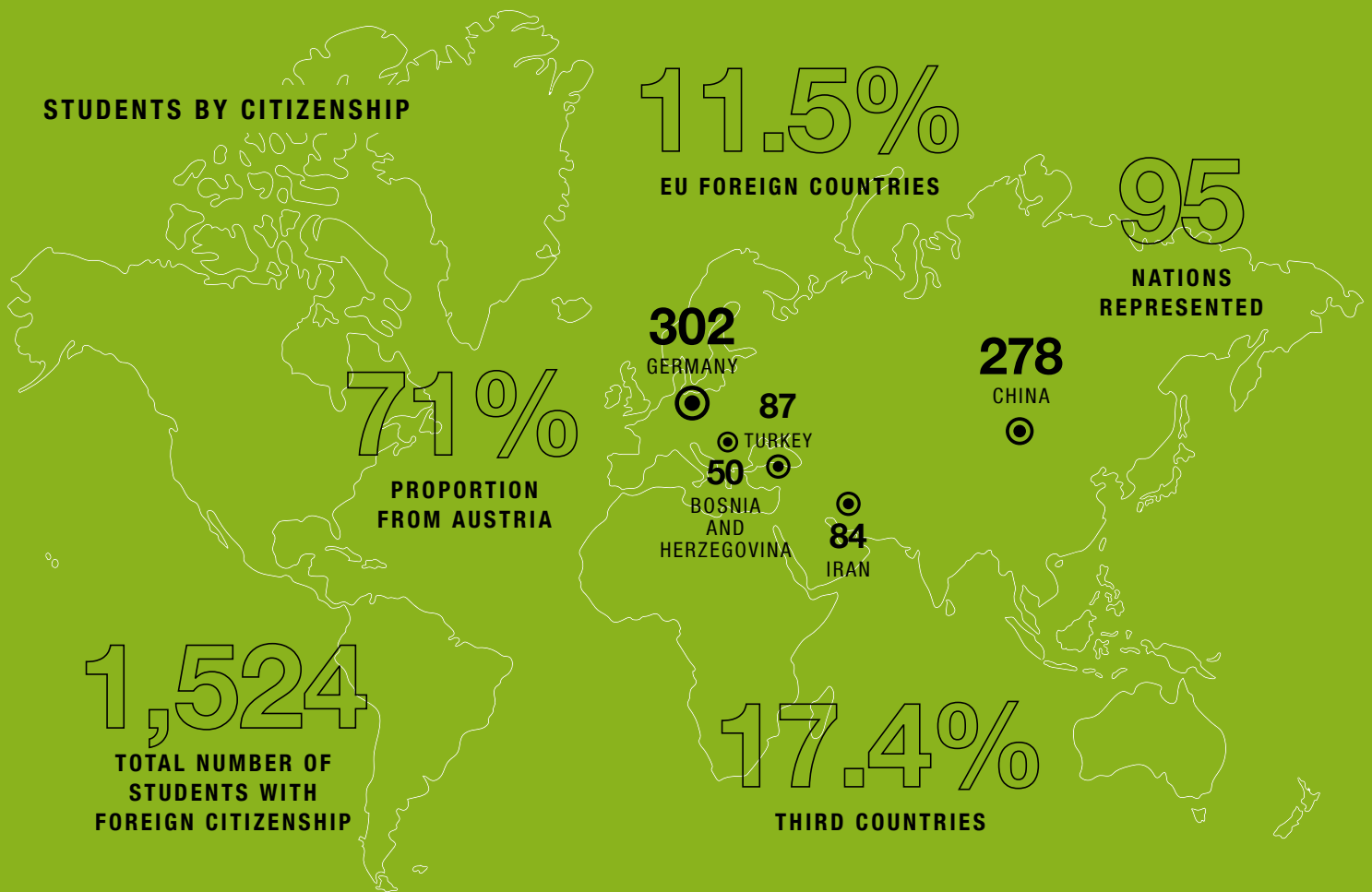


NUMBER OF STUDENTS



DEVELOPMENT IN TOTAL





96

PARTNER UNIVERSITIES



91,130

COURSE HOURS OFFERED



STUDENT MOBILITY



23,000 m²

USABLE SPACE

PERSONNEL



1,158
TOTAL
EMPLOYEES



743
MALE

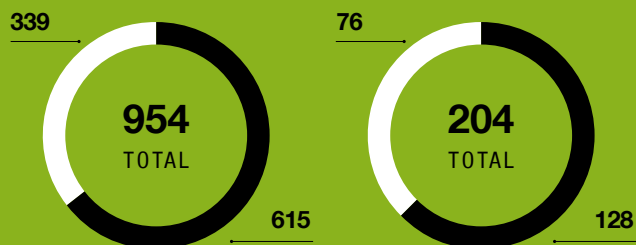


415
FEMALE

386

FULL-TIME EQUIVALENT
RELATED TO FIXED EMPLOYEES

■ MALE ■ FEMALE



TEACHING AND
RESEARCH*

ADMINISTRATION
AND MANAGEMENT

* INCLUDING 691 EXTERNAL LECTURERS

RESEARCH & DEVELOPMENT



66

ONGOING R&D PROJECTS



€4,106,840

FUNDED PROJECTS VOLUME
UAS TECHNIKUM WIEN SHARE 20/21



30

RESEARCH PROJECTS 20/21

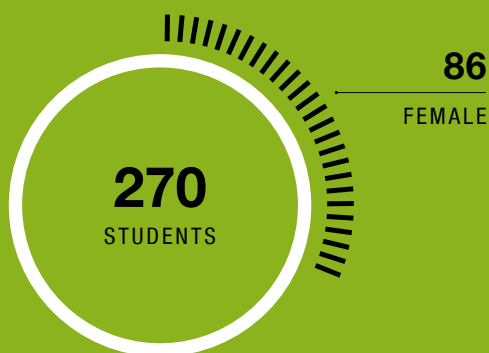


€744,691

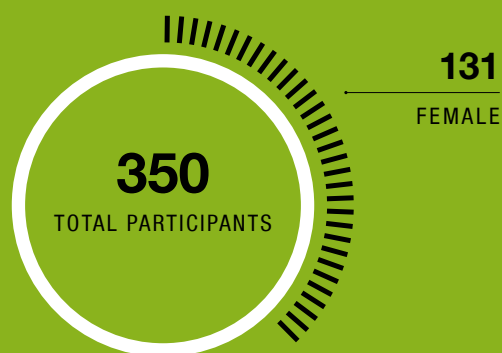
PROJECT VOLUME

CONTINUING EDUCATION—TECHNIKUM WIEN ACADEMY

6 MASTER'S COURSES,
3 SHORT COURSES



CERTIFICATIONS
AND SEMINARS



STUDENT SURVEY

In three surveys (SS 20, WS 20/21, SS 21), students were asked how they were coping with studying online due to coronavirus measures and what our university could do better. The results show a high level of satisfaction and a positive trend:

How satisfied are you in general with your current situation at UAS Technikum Wien:

Responses “very satisfied” and “satisfied”:



Online study arrangements were handled well in general by UAS Technikum Wien:

Responses “agree” and “agree to some extent”:



LIBRARY



22,738

TOTAL PRINT MEDIA
INVENTORY



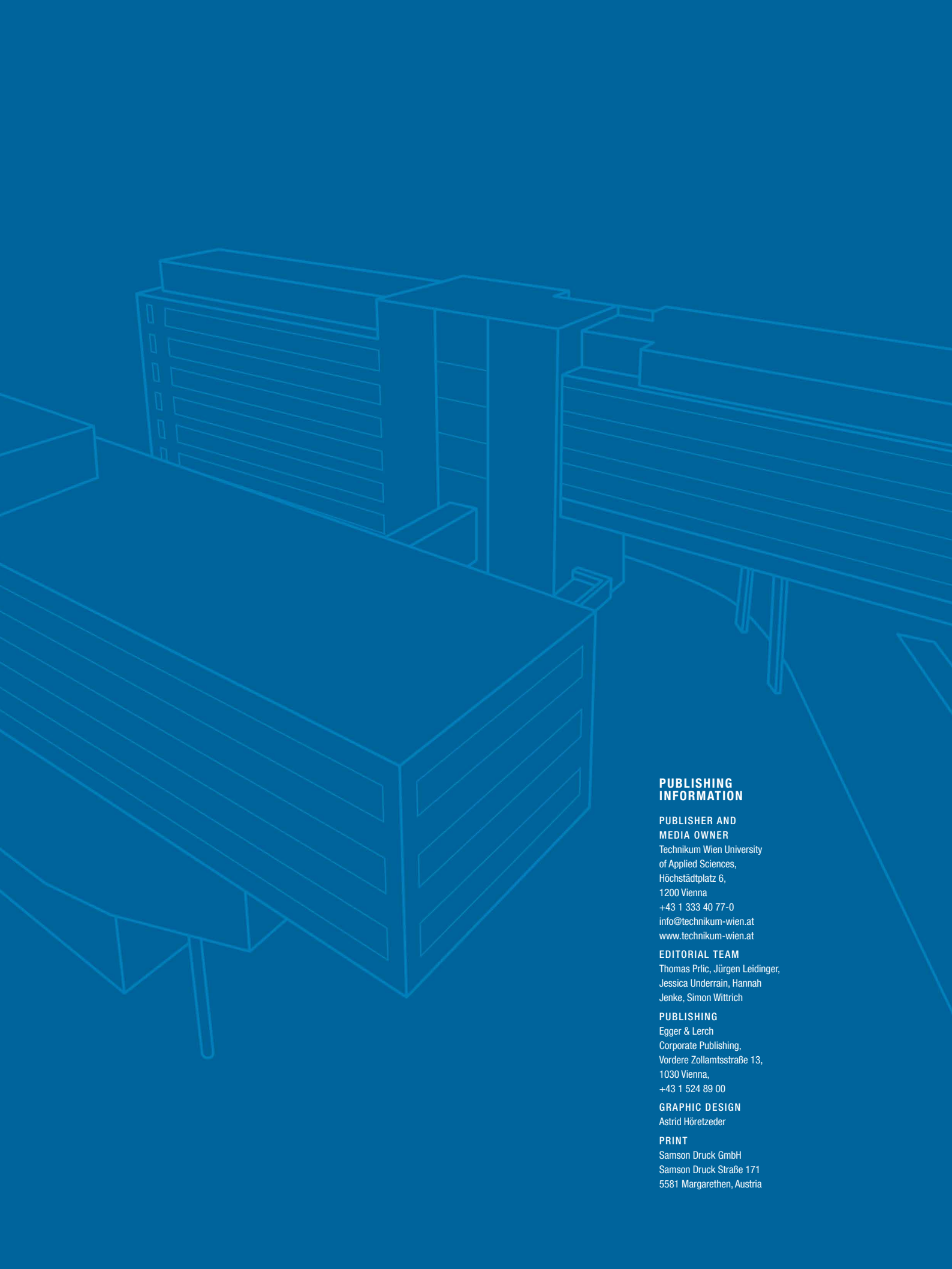
~ 21,000

NUMBER OF
LICENSED E-BOOKS



■ E-BOOK/E-JOURNAL
DOWNLOADS

■ NUMBER OF LOANS



PUBLISHING INFORMATION

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