FRANKFURT UNIVERSITY OF APPLIED SCIENCES

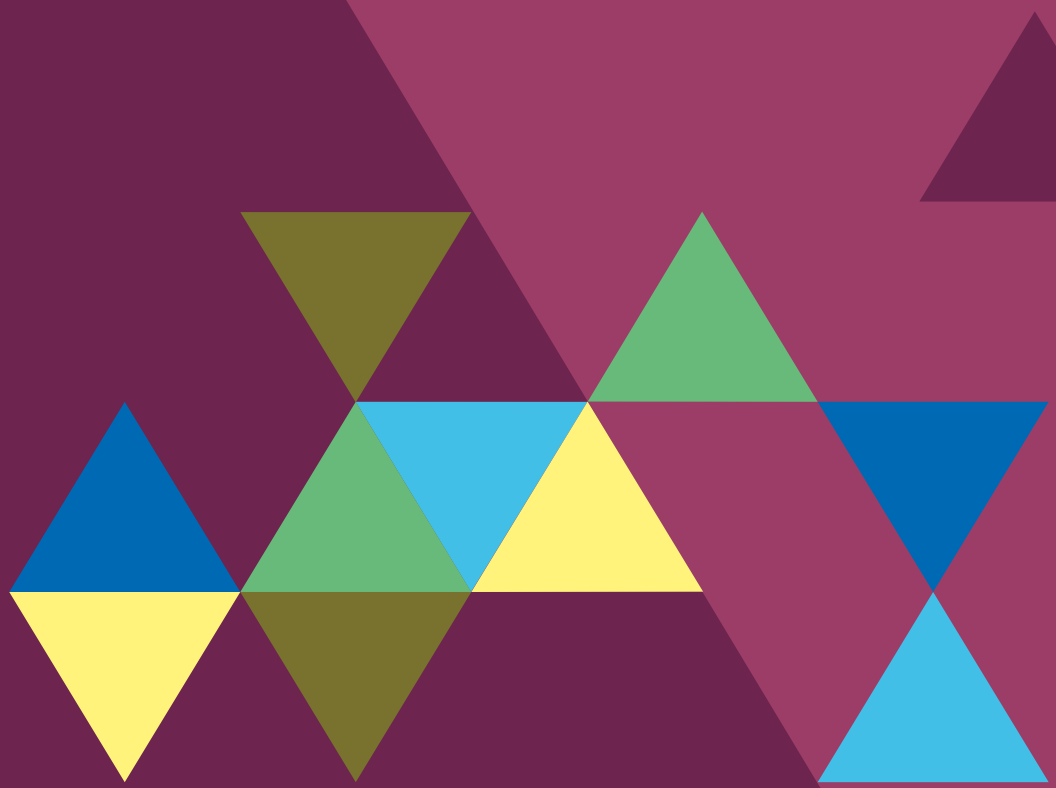
Sustainability Report 2022 / 2023

Towards a sustainable future

Frankfurt University of Applied Sciences

Sustainability is at the heart of everything we do in teaching, research, further education, and transfer. Our sustainability strategy firmly embeds this as a priority in the day-to-day life of our university.

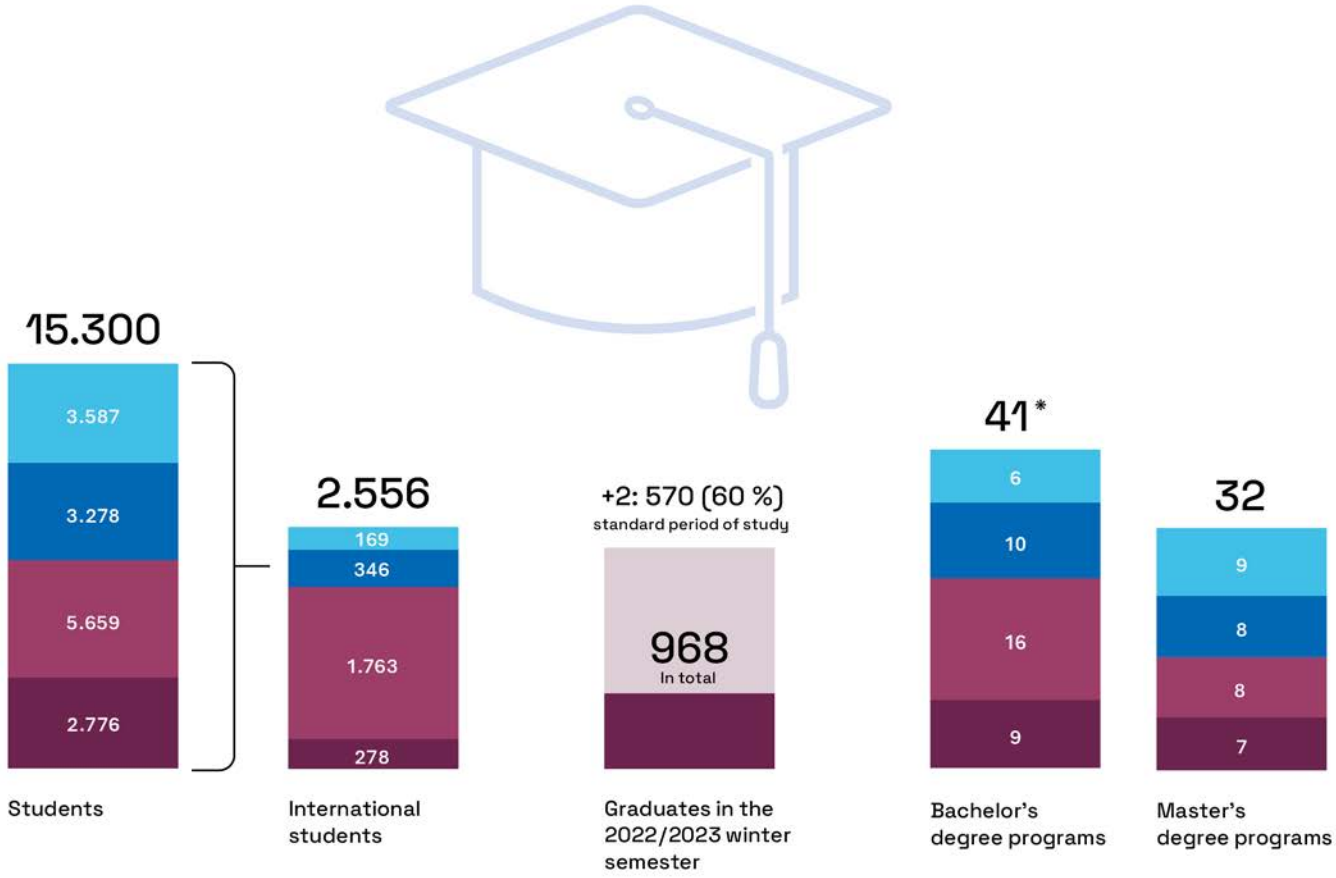
From the Sustainability Framework (Strategic Guidelines of the Frankfurt UAS)



Facts and figures

Winter semester 2022 / 2023

Studies and teaching



1 **Faculty 1**
Architecture, Civil Engineering and Geomatics

2 **Faculty 2**
Computer Science and Engineering

3 **Faculty 3**
Business and Law

4 **Faculty 4**
Social Work and Health

* excludes discontinued and dual-degree programs, includes further-education programs

Research in the 2022/2023 winter semester

43

centers, academic institutions, and research areas

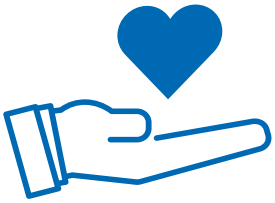
44

laboratories and research facilities

03

collaborative doctoral research centers

Key research areas



1 Care, health, and diversity

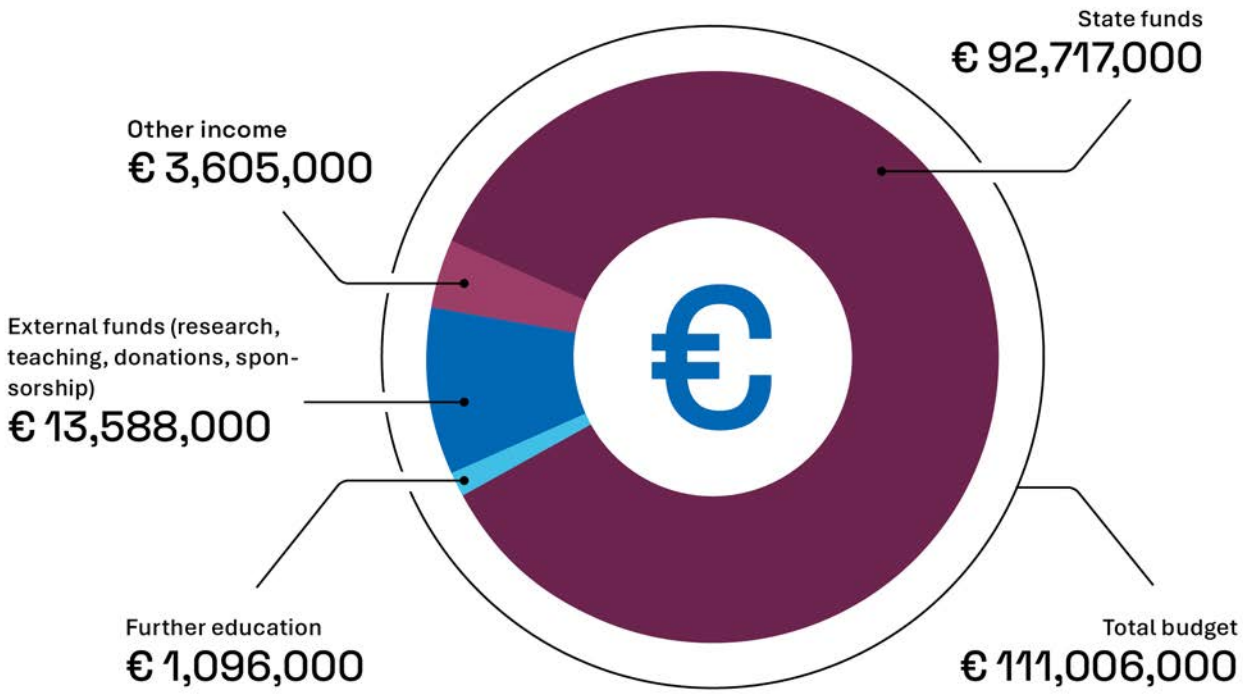
2 Digital transformation and information / communication technologies

3 Mobility and logistics

Facts and figures

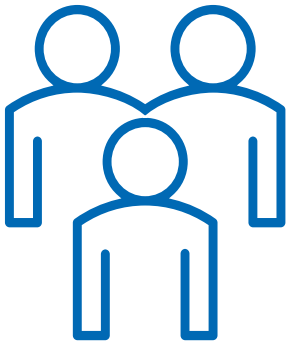
Winter semester 2022 / 2023

Budget for 2022



Total number of employees

(As of 12/31/2022)



1.036 employees in total

558 academic support staff

281 professors

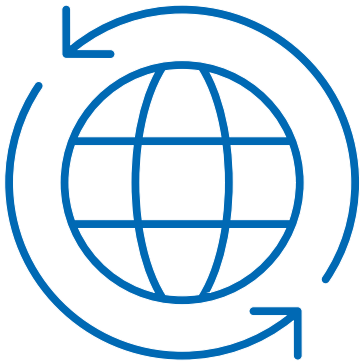
197 other academic staff

International

International

125 nations on campus

257 partner universities



Student exchange

incoming **138**

outgoing **245**

Content

Sustainability as a firm strategic guideline

Dear Colleagues, Students, and Sustainability Enthusiasts,

Finding a sustainable and just way to manage resources and mitigate the effects of climate change is one of the greatest challenges we face as a global society. As an institution of higher education, we have a special responsibility to raise awareness of this crucial topic among our students. We must equip them with the knowledge and skills needed to promote sustainability in their future careers. Through our four large faculties with their broad topics, we focus our outstanding expertise on all dimensions of sustainability – ecological, economic, and social.

We are proud that sustainability has been embedded as a core strategic guideline at the Frankfurt UAS since 2019. Our university has firmly institutionalized sustainability as a core tenet by developing, approving, and continuously updating our sustainability strategy, establishing the Sustainability Office (BüroN), creating the Sustainability Council (NachhaltigkeitRAT), and appointing sustainability professorships in all four faculties. In addition, we became Hesse's first Fairtrade University in 2022.

Our university has made significant progress on various projects that help us move toward our sustainability goals. In June 2023, we were selected as the only university in Hesse to join a "Community of Practice" as part of the "Transformative Skills for Sustainability" initiative, backed by the Stifterverband, Carl Zeiss Foundation, and the German Federal Environmental Foundation – a great achievement. In July 2023, our application to join the U!REKA SHIFT (Sustainable Human Inclusive Future-Proof Transition) project, part of the European Universities Initiative's U!REKA university network, was approved. It is a partnership of seven universities working with other stakeholders to develop sustainable, inclusive, and smart solutions for European cities.

Closer to home, we are also making strides on our own campus. In late 2023, we learned that we will be awarded state funding to install photovoltaic systems on three of our buildings and to improve the technical infrastructure of these facilities over the coming years. This will help us further reduce our energy use and CO_2 emissions. Our campus is also set to become greener, with plans for more outdoor learning and recreational spaces – something our entire university community has eagerly anticipated.

A lot has happened since we adopted our sustainability strategy and published our last report in 2021. We have made significant progress in teaching and learning, research, further education and transfer, and university operations and campus development. We have clearly integrated sustainability as an overarching priority across all areas. However, it is equally clear that, in many respects, we are still at the beginning of this journey.

Let us continue to work together toward our shared goal: a sustainable future for us all.

We hope you enjoy reading this issue!

Prof. Dr. Kai-Oliver Schocke

Prof. Dr. Susanne Rägle

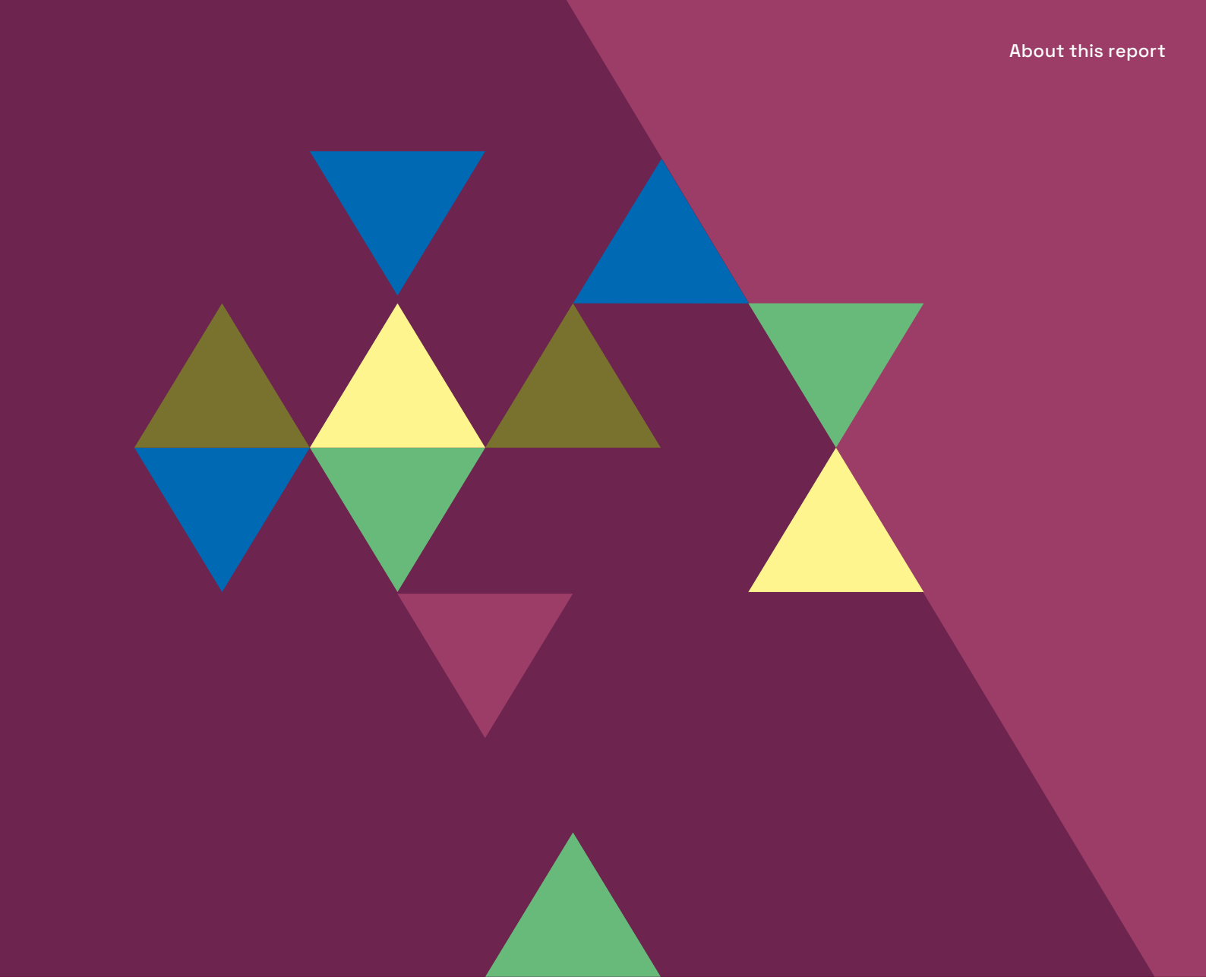
About this report

This second sustainability report from the Frankfurt UAS was prepared by the Office of Sustainability in collaboration with teaching staff, researchers, and employees from various faculties, research institutions, and central departments. It follows the German Sustainability Code for Higher Education Institutions (Hochschul-DNK) and is divided into the university's four core areas.

The Governance / Institutionalization chapter details the evolution of sustainability initiatives, beginning with the formal institutionalization of these efforts in 2021. This chapter also introduces the key figures driving the implementation of the sustainability strategy across the university. Developments within the faculties, along with initiatives in the field of Education for Sustainable Development and sustainability-focused degree programs, are covered in the Studies and Teaching chapter.

The chapter on Research, Further Education, and Transfer presents an overview of research projects and further education programs related to sustainability. University Operations and Campus Development provides key figures about our campus operations alongside measures designed to enhance sustainability on campus. Finally, the report outlines the specific measures and activities implemented with the aim of achieving the university's sustainability strategy. This report covers the years of 2022 / 2023, although some statistical data are not yet available for the entire period.

The Frankfurt UAS has undergone a visual rebranding during the reporting period with the goal of strengthening its profile and identity both internally and externally. This process clearly articulated our mission: "We educate students to become responsible shapers of the future."



Without this commitment, we cannot tackle real-world challenges. The new branding is reflected in the creative concept of this report, featuring a refreshed visual language and updated corporate design. Our guiding principle is to be locally rooted, diverse, personal, and socially responsible as we shape the future.

We extend our heartfelt thanks to everyone who contributed to the creation of this report by writing, providing data, or sharing information.

If you have further ideas or important suggestions for the next sustainability report, or if you are involved in sustainability-focused teaching or research and feel your work should be included, please get in touch with us.

You can reach us at:
nachhaltigkeit@stn.fra-uas.de

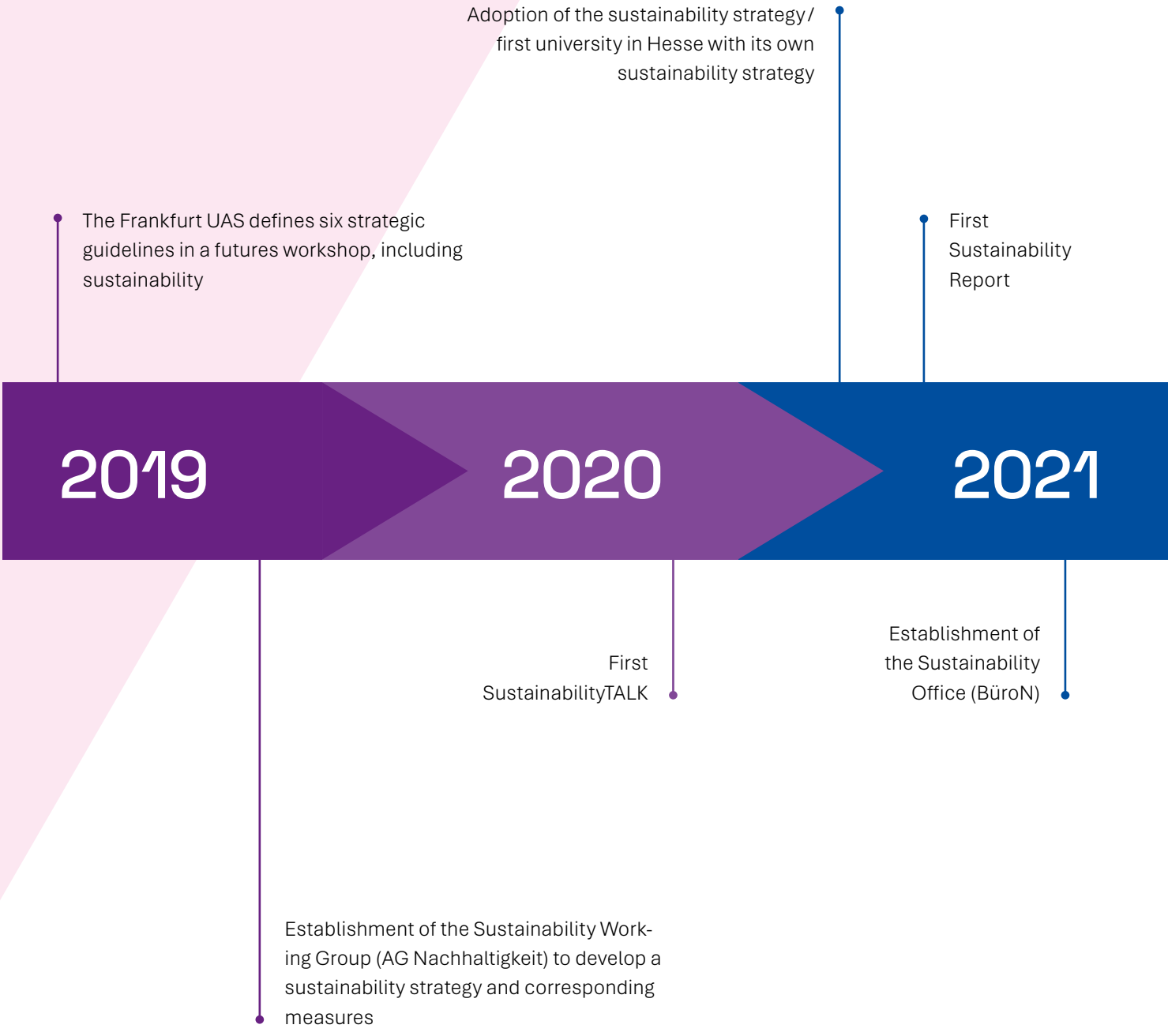
Chapter 1:
Governance

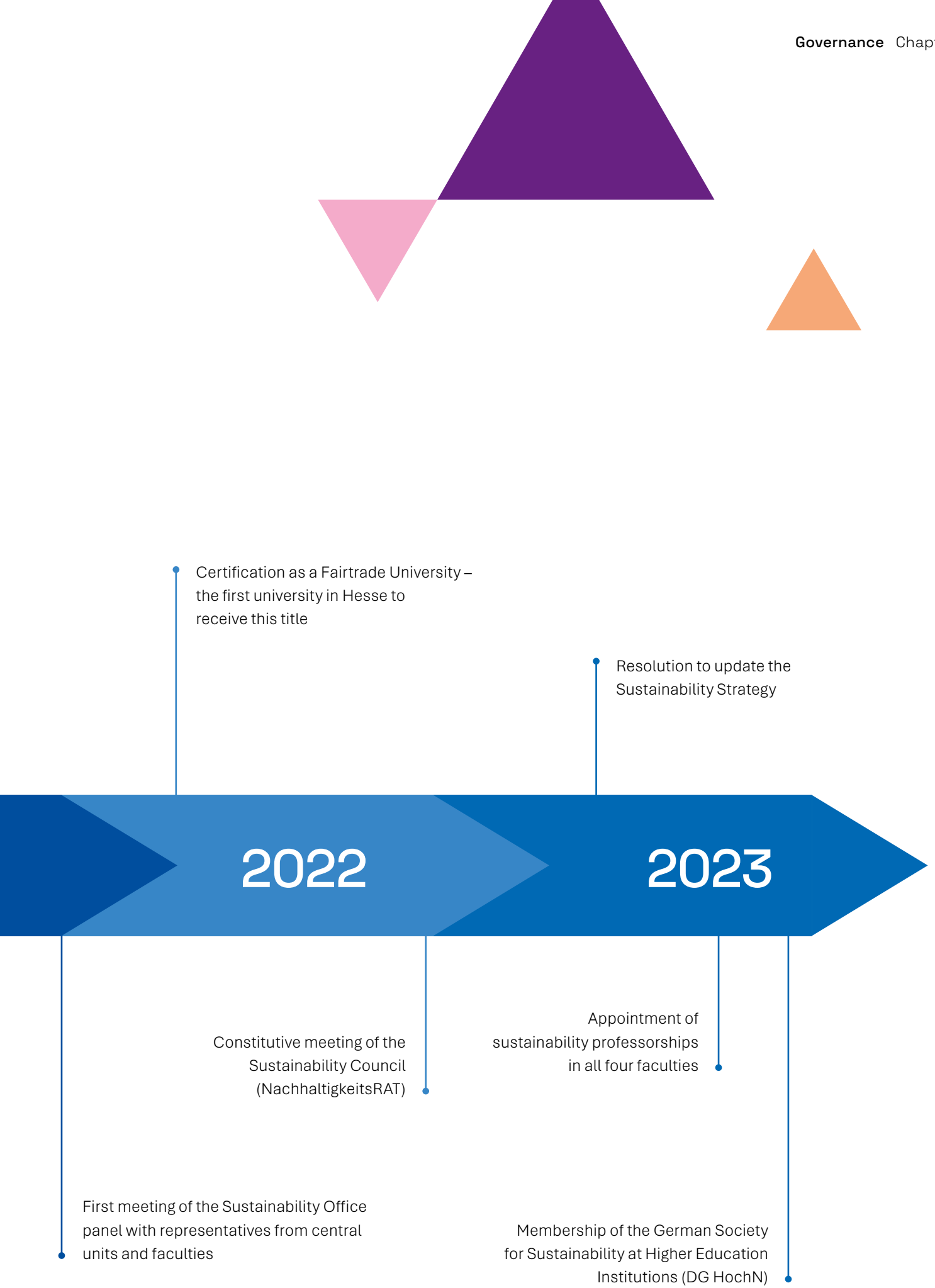
> We are establishing sustainability as a key reference point across all areas.

From the Sustainability Framework

→ Milestones

The 2021 – 2025 target agreement between Frankfurt University of Applied Sciences and the Hessian Ministry of Science and the Arts defined sustainability as one of six strategic guidelines. Milestones have been formulated around this. Some have already been achieved, while others are still in progress, and much remains to be done. We are committed to advancing sustainability in the coming years, monitoring progress, and communicating developments appropriately.




Certification as a Fairtrade University – the first university in Hesse to receive this title
Resolution to update the Sustainability Strategy
2022
2023
First meeting of the Sustainability Office panel with representatives from central units and faculties
Constitutive meeting of the Sustainability Council (NachhaltigkeitsRAT)
Appointment of sustainability professorships in all four faculties
Membership of the German Society for Sustainability at Higher Education Institutions (DG HochN)

Sustainability Office (BüroN)

Connecting and creating

The Sustainability Office was established in 2021 to coordinate the implementation of sustainability goals and measures at the Frankfurt University of Applied Sciences. Our team at the Sustainability Office are central ports of call and coordinators for all sustainability-related matters within the university. We connect stakeholders and keep all sustainability activities aligned.

One of our very first milestones was the appointment of a panel of Sustainability Office representatives from the faculties and service departments. They are the key drivers and ambassadors of our sustainability efforts. We have also established a Sustainability Council (NachhaltigkeitsRAT), which will meet at least once a year. It is an advisory committee "overseeing, promoting, and supporting the development of the Frankfurt UAS into a sustainable university" – for example, by updating our sustainability strategy in May 2023. One of the Sustainability Office's first successes was the application for Fairtrade University status: In January 2022, the Frankfurt UAS became the first university in Hesse to be awarded this title. In both 2022 and 2023, the Sustainability Office funded VisibleN projects – public-facing teaching and pilot projects aimed at embedding sustainability into teaching, learning, and day-to-day campus life. Our office also oversees the on-campus beekeeping project, which entered its second year during the 2023 / 2024 season, offering the opportunity to sponsor a beehive and support the continuation of the project. Events such as the SustainabilityTALKS and freshman orientation sessions made campus-related sustainability topics visible to all university members, sparking conversations among those interested. At the 2023 SustainabilityTALK, we introduced the new sustainability professors who were newly appointed in the winter semester of 2022 / 2023. Their role is to strengthen interdisciplinary collaboration on sustainability topics in teaching and research across the faculties.

The Sustainability Office also regularly meets with the AStA Environmental Office to support student-led sustainability initiatives. To address university-wide sustainability topics with broader expertise, we are part of the Network Sustainability of Hessian Universities (NNHH) and, as of November 2023, members of the German Society for Sustainability at Higher Education Institutions (DG HochN).

One major project currently underway is the creation of a dashboard tracking the progress made in various sustainability efforts across the university. It will be made available on the sustainability section of the university website. We also launched a feasibility study on campus greening in 2022, which is now moving into the planning phase.

The development of a roadmap to reduce CO_2 emissions is another key initiative, which will be a crucial part of our effort to achieve climate neutrality by 2030. This initiative requires close collaboration across multiple faculties and units to make our buildings and energy consumption more sustainable and climate-friendly.

Our goal of achieving a truly sustainable university can only be accomplished when many people are willing to incorporate new ideas, small and large, into their day-to-day lives at university, guided by our motto: “Develop expertise, shape attitudes, become ambassadors.”

We warmly invite all university members to join our sustainability movement in your respective faculties, departments, and committees.

BüroN © M. Küchler

Contact

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Kirsten Moriggl-Neynaber
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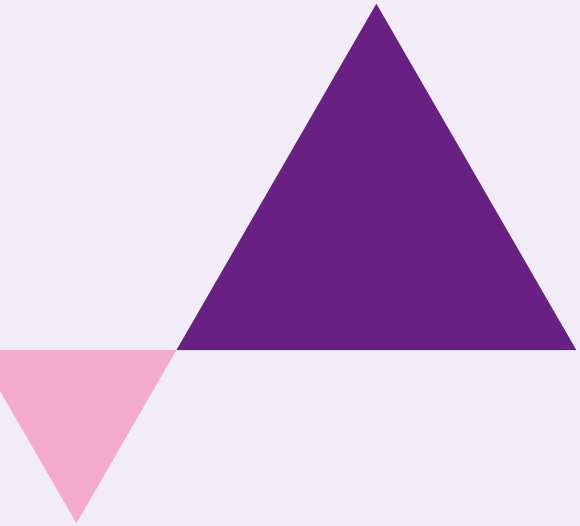
→ Strategy

In 2021, we became the first university in Hesse with a dedicated sustainability strategy, and we are very proud of this milestone. We have always known that the originally set goals would not be carved in stone – they require regular reviews. Thanks to input from the Sustainability Council, we have already made significant improvements. Alongside formal changes and a few additions – such as the points addressing sustainable consumption and working conditions – we have intensified the strategy in various key areas. It was essential to recognize not only the climate emergency but also the biodiversity crisis. Going beyond mere recognition, however, we have fully committed to embracing our societal responsibility and consistently implementing sustainable principles.



Sustainability Strategy of the Frankfurt University of Applied Sciences

Preamble and vision

We have only one home: Earth. Our overarching goal must be to ensure its future viability under any circumstances.

We acknowledge the global climate emergency, the loss of biodiversity and its consequences. We take our social responsibility seriously, putting aspects of ecological, economic and social sustainability center stage across all areas of activity of the Frankfurt University of Applied Sciences.

We are a modern university of applied sciences and an interdisciplinary and diverse partner in the fields of education and research. Based in a major metropolitan region, we strive to solve society's most pressing problems through a constant exchange with our partners and the general public. In these capacities, we are most effective when we focus on applying our strengths – do what we do best – and dedicate ourselves to achieving sustainability at the scientific and societal level.

Honoring our commitment to being a role model for sustainability while inspiring others to join our efforts, we are driven by our guiding principle: "Develop expertise, shape attitudes, become ambassadors". We enable and encourage our early-career researchers and all other members of the university to become ambassadors for sustainability in society and business.

As the Frankfurt UAS, we work on solutions for the most urgent challenges we all face: climate protection, environmental regeneration, gender equality and, above all, quality education – because education is the key to solving the problems of the future. Our approach is based on the 17 Sustainable Development Goals as documented in the United Nations' Agenda 2030.

Within the scope of three clearly defined areas of activity – "studies and teaching", "research, continuing education, and transfer" and "university operations and campus development" – we develop targeted objectives and measures which ensure that the entire university benefits from the implementation of our sustainability strategy. In doing

so, we consistently contribute to the future viability of our society and world and we use the scarce resources at our disposal in a responsible and effective way.

Our strategic goal is to embed sustainability permanently in our thoughts and actions.

I. Sustainability in studies and teaching

Sustainability is a visible, interdisciplinary aspect of all our degree programs. In addition to specialist knowledge and skills, we furnish all our students with a broad understanding of sustainability. They are taught to consider all dimensions of sustainability – ecological, social, economic – equally and analyze and assess relevant questions accordingly.

We hone our conflict management skills and critical analysis to become good ambassadors of sustainability.

II. Sustainability in research, continuing education, and transfer

In our academic environment, the topic of sustainability is a consistent and high-profile consideration across all research projects. Using our research insights, we create solutions for the sustainable development of a world that is fit for the future.

By sharing our results with society, we seek to consolidate and further this knowledge and advance the sustainability transformation.

In particular, we transfer our expertise and technologies in the field of sustainability to municipalities, businesses and associations using suitable collaboration and communication formats.

On the one hand, we support their transition towards sustainability by developing technical, social and institutional innovations and overseeing their implementation.

On the other hand, sustainability aspects such as the personal development of employees, corporate resource management and digitalization are integral parts of all our continuing-education programs. They are consistently designed with their future viability in mind.

III. Sustainability in university operations and campus development

We, the Frankfurt UAS, see ourselves as a living laboratory and a model project for sustainable building, campus and green space planning and transportation. All our construction projects are planned, bid, and implemented with the goal of carbon neutrality in mind. We are mapping our resource and energy consumption to adapt our behavior and infrastructure as needed. This approach will enable us to make our university operations entirely carbon-neutral by 2030.

In this way, we authentically demonstrate our transformation process towards becoming a sustainable university, inviting the general public and the urban community to experience real-life sustainability on our campus.

However, sustainable university operations should entail more than simply achieving carbon neutrality. A holistic approach to harnessing all resources and processes, including the time invested and personal commitment of each and every individual, is of equal importance. In the spirit of sustainability, we use all available resources prudently and with appreciation. That is why we are undertaking a review of our administrative and operational procedures, making full use of the digital options at our disposal.

When it comes to procurement and commissioning, we make all decisions with a sustainability perspective to ensure that no compromises are made for financial reasons. As a matter of principle, Frankfurt UAS only enters into cooperative arrangements with businesses and organizations that are already committed to sustainability – subject to verification wherever possible. Our endeavor to become certified as a Fairtrade University underscores the importance of fair-trade practices and sustainable procurement and consumption at our institution.

The well-being of everyone on campus is of utmost importance to us. We ensure healthy studying and working conditions. A good work-life balance, diversity and inclusion are crucial prerequisites for fair employment, teaching and learning, and a pleasant atmosphere among colleagues.

IV. Institutionalizing sustainability and a controlling

We are in the process of setting up a Sustainability Office at Frankfurt UAS. It is designed to ensure that all activities relating to studying, teaching, research, continuing education, knowledge transfer and overall university operations are aligned and coordinated from a sustainability perspective. Each faculty and department at Frankfurt UAS must delegate a representative to serve as member of the Sustainability Office. They will meet at least twice a semester for the joint development and implementation into measures of initiatives emerging from the entire university community.

To monitor and adjust our behavior accordingly, the Sustainability Office will report on current projects, carbon footprint reduction, and resource and energy consumption on a relevant platform. It will regularly present a sustainability report outlining the university's progress towards sustainability and the degree to which each measure has been implemented. Indicators and milestones will be defined during the planning process.

A Sustainability Council will meet at least once a year. Its purpose will be that of a committee overseeing, promoting, and supporting the development of Frankfurt UAS into a sustainable university.

The Sustainability Council consists of:

- → the member of the presidential board responsible for sustainability (chair);
- → three representatives of the university's central administration;
- → four faculty representatives;
- → four students;
- → three external members.

The chair will be chosen from among these members.

In implementing and further developing our sustainability goals, we are wholly committed to fostering a participatory culture in which our professors, employees, and students have the opportunity to play a crucial role. To this end, the sustainability strategy is updated at appropriate intervals.

→ Sustainability management

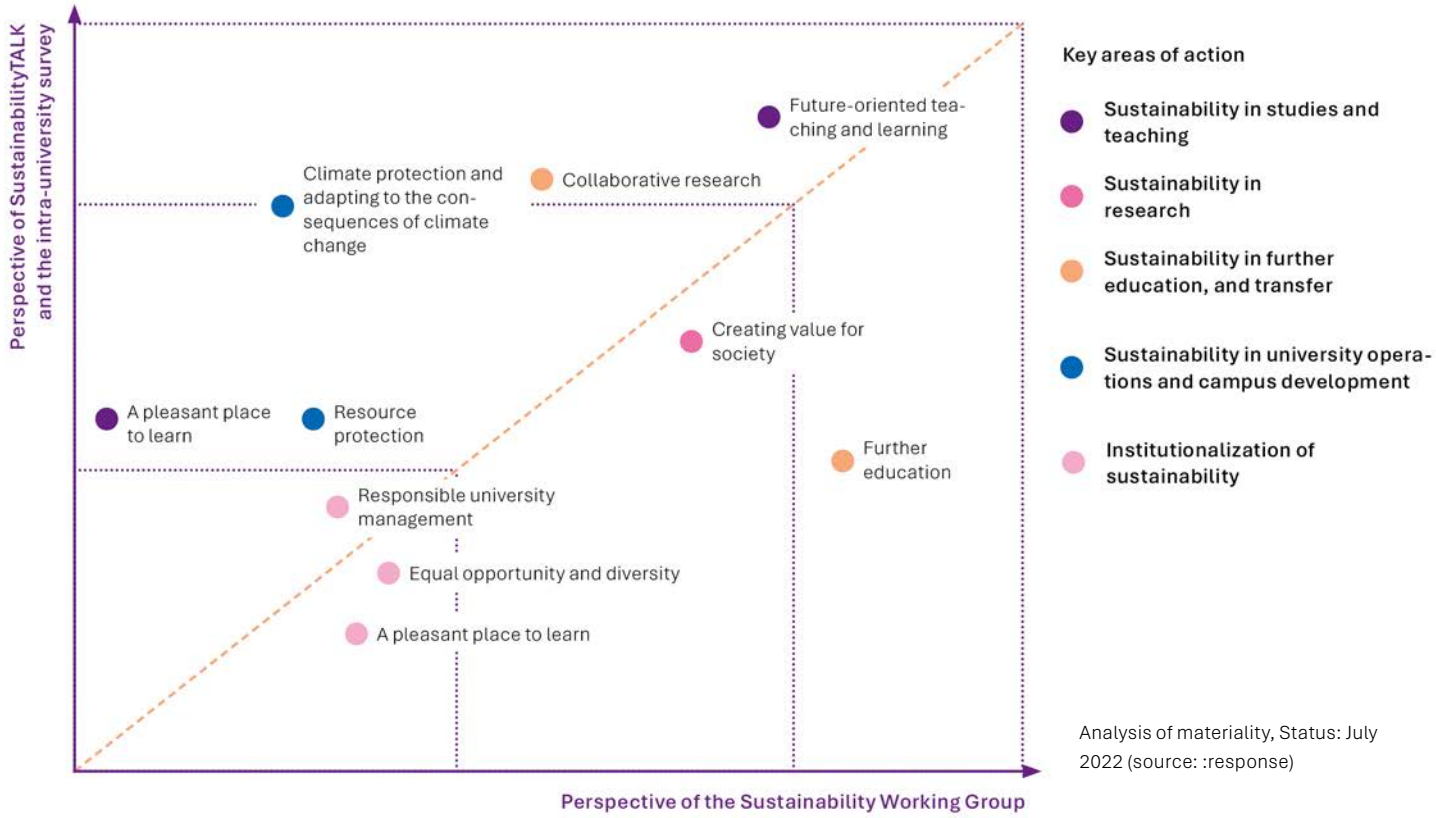
Establishing sustainability structures at Frankfurt UAS

The 2019 foundation of a Sustainability Working Group (AG Nachhaltigkeit) was the first step towards establishing formal sustainability structures at our university. During ten meetings, its members discussed governance, environment, and society. This resulted in the publication of our Sustainability Strategy in 2021 and a cornucopia of ideas to support its implementation ("111 Measures", see the 2021 Sustainability Report).

In late 2021, we collaborated with a sustainability and ESG consultancy to develop a dashboard that would visualize the sustainability activities carried out at the university. Based on the results of a workshop by the Sustainability Working Group (December 2021), the intra-university stakeholder survey (April / May 2022) and the third SustainabilityTALK (May 2022), we reassessed the goals developed for studies and teaching, research, further education and transfer, university operations and campus development, and institutionalization. The results then informed a materiality analysis.

The following crucial sustainability topics were identified:

- → Studies and teaching: **A pleasant place to learn, future-oriented teaching and learning**
- → Research: **Creating value for society**
- → Further education and transfer: **Collaborative research, further education**
- → University operations and campus development: **Climate protection and adapting to the consequences of climate change, resource protection**
- → Institutionalization: **Responsible university management, attractive employment, diversity, equal opportunity**



Analysis of materiality, Status: July 2022 (source: :response)

The following section introduces the individual key topics:

A pleasant place to learn

Besides our comprehensive course catalog, the design of our campus plays an important role in making the Frankfurt UAS an attractive place to study. We embrace our commitment to environmental sustainability as an opportunity to enhance the general atmosphere at our campus locations. Our biodiversity initiatives (e.g. unsealing surfaces, urban gardening) aim to create habitats for plants and animals while simultaneously improving the learning environment on campus.

Future-oriented teaching and learning

As a university, our greatest leverage is the education of our students. With our practical and interdisciplinary learning opportunities, we seek to equip them for their future roles as decision-makers in politics, business, and society. By appointing suitable professors and embedding sustainability topics into our curricula, we ensure that students acquire key competencies in sustainability.

Creating value for society

We strive to address pressing societal challenges through the knowledge generated at our university, strengthening the three pillars of sustainability: ecology, economy, and society. To this end, our goal is the alignment of our research and social commitment with the United Nations' Sustainable Development Goals (SDGs) and the strengthening of our knowledge transfer activities.

Collaborative research

We firmly believe that diverse perspectives – from experts and non-experts alike – enrich our research, especially in the field of sustainability. This is why we prioritize accessible research communication, a strong network of institutional partners, and the involvement of various stakeholders, such as students, municipalities, and citizens (citizen science).

Further education

Our complex and dynamic world and labor market requires a steady stream of opportunities for learning and further education. In particular, we want to give professionals the chance to develop both their careers and personal lives by acquiring practical skills in the field of sustainability.

Climate protection and adapting to the consequences of climate change

The operation of our university, including its building management and mobility requirements, emits harmful greenhouse gases. By using renewable energy and implementing efficiency measures, we aim to reduce our carbon footprint and contribute to the United Nations' 1.5-degree target. We acknowledge that climate change can be mitigated but not stopped entirely. Therefore, we are implementing measures to adapt our campus to its consequences.

Resource protection

Water, paper, cleaning supplies – the operation of our university consumes natural resources. We endeavor to source as many materials as possible from sustainable sources while also reducing our consumption. After all, plant-based diets are less taxing on our planet. As part of our resource protection efforts, we are therefore increasing the share of vegetarian and vegan meals in our cafeteria.

Responsible university management

Ethics and integrity are central not only to our research and teaching activities but also our university leadership. They are the pillars of our commitment to social, economic, and environmental sustainability. We monitor and enforce compliance with ecological and social regulations, aiming to formalize our university values in concrete guidelines (such as our Diversity Strategy).

Attractive employment

The success of our university relies on motivated, qualified employees. We implement measures in the fields of occupational health, further education, and work-life balance to strengthen our relationship with our employees and retain skilled staff for the long term.

Equal opportunity and diversity

Our university is a place of diversity. We want to create an environment in which all its members may realize their full potential, being recognized and appreciated for their achievements. We work toward these goals both through our strategy and the implementation of concrete measures.

For example, we have outlined the requirements for a dashboard which will showcase the Frankfurt UAS's sustainability activities on our website, ensuring transparency through monitoring. By displaying Key Performance Indicators (KPIs) publicly, this dashboard will reveal the measurable impact of our sustainability efforts in each area. It will highlight the important role of sustainability at the Frankfurt UAS and underscore our active commitment to the relevant goals. Beyond merely presenting the narrative behind our work, it will encourage and inspire sustainable action.

We have requested proposals from various design agencies to make the dashboard a reality. A local provider from Frankfurt was awarded the contract and presented the design concept for the dashboard in late 2023. Following the successful conclusion of the design phase, technical implementation will begin in 2024. We expect the dashboard to go live by mid-2024.


1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

→ An overview of the Sustainable Development Goals (SDGs)

1. No poverty

2. Zero hunger

3. Good health and well-being

4. Quality education

5. Gender equality

6. Clean water and sanitation

7. Affordable and clean energy

8. Decent work and economic growth

9. Industry, innovation and infrastructure

10. Reduced inequalities

11. Sustainable cities and economies

12. Responsible consumption and production

13. Climate action

14. Life below water

15. Life on land

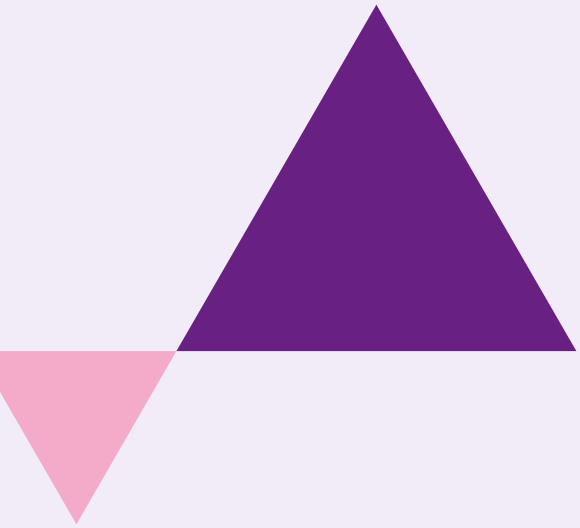
16. Peace, justice and strong institutions

17. Partnership for the goals

→ How the SDGs underpin our work

As the Frankfurt University of Applied Sciences, we work on solutions for the most urgent challenges we all face: climate protection, environmental regeneration, gender equality and, above all, quality education – because education is the key to solving the problems of the future. Our approach is based on the 17 Sustainable Development Goals as documented in the United Nations' Agenda 2030.

From the Sustainability Strategy



In 2015, the United Nations adopted its 2030 Agenda. It is aimed at all nation states, institutions, and individuals. Its preamble contains five core messages:

1. Human dignity for all **people**
2. Protect our **planet**
3. **Prosperity** for all
4. Foster **peace**
5. Build global **partnerships**

The 2030 Agenda includes 17 Sustainable Development Goals (SDGs). The Frankfurt UAS focuses on seven of these, which guide our work across all areas. The core mission of our university is reflected in SDG 4: Quality education.

Our further priorities are:

→ Health and well-being (SDG 3)

→ Gender equality (SDG 5)

→ Industry, innovation and infrastructure (SDG 9)

→ Reduce inequality (SDG 10)

→ Sustainable cities and settlements (SDG 11)

→ Action to combat climate change (SDG 13)

Beyond these core goals, the other 10 SDGs and their 169 sub-goals are addressed in many of our teaching topics, research projects, and other activities.

Through these efforts, we are contributing to the sustainable transformation of society, the economy, and the environment by 2030. We are, however, well aware that this requires as many local participants as possible – we need a global movement.

The focus topics of the Frankfurt UAS in relation to the UN Sustainable Development Goals

Sustainability Council (NachhaltigkeitsRAT)

Providing advice and support

A personal connection

Dr. Gunter Volz is the Pastor for Social Responsibility at the Evangelical City Deanery of Frankfurt and Offenbach. His responsibilities include topics such as residing, working, and living in the city. Sustainability and all its aspects are a major focus, as the Evangelical Church is committed to the idea that humans are stewards of God's creation and entrusted with the duty to care for the natural world (Schöpfungsverantwortung).

Dr. Volz has been a member of the Sustainability Council at the Frankfurt UAS since its inception in 2022.

What motivated you to get involved in the Sustainability Council?

VOLZ: "As a representative of the City Deanery, I participate in the steering group for "Fairtrade Town Frankfurt". A "fair breakfast" led me to the Frankfurt UAS campus. During the event, Vice President Prof. Dr. Susanne Rägle approached me to see if I would be interested in getting involved, and I was more than happy to accept. Collaboration is very important to me, especially when it involves one of the city's major universities."

What is your opinion on the Frankfurt UAS's sustainability efforts? How do they compare to those of the Church?

VOLZ: „"Reading through the 2021 Sustainability Report certainly encouraged me in my decision. I was impressed by the university's ambitious aim to become CO_2-neutral by 2030 by upgrading its buildings and the entire campus. Of course, we cannot directly compare the Evangelical Church with a university due to their dissimilar content and structure. Still, they both face the same challenge of achieving CO_2-neutrality. The Church's considerable real estate holdings – residential buildings, daycare centers, community centers, and churches – make this a difficult task. Which of our aging community buildings do we want to keep and make fit for the future? How do we make our often historically significant, listed churches climate-neutral? I hope to gain ideas and inspiration from the experts on the Sustainability Council."

Are there any specific ideas in the works yet?

VOLZ: "Yes, the exchange between the Evangelical City Deanery and the Frankfurt UAS is already underway. There have been discussed questions about the future of church properties between Prof. Dr.-Ing. Maren Harnack (Faculty 1), Cornelius Boy (the head of our construction department) and me. For an event on mobility at the Evangelical Academy Frankfurt, I invited Prof. Dr.-Ing. Dennis Knese (Faculty 1) to present his research on making downtown Frankfurt more bicycle-friendly."

Do you see further opportunities for collaboration?

VOLZ: "I'm very impressed by the Frankfurt UAS's plans to integrate sustainability into all degree programs as an interdisciplinary theme. This means that students of all

fields will engage with sustainability issues – fantastic preparation for a future where sustainability will become even more crucial in the face of escalating climate issues. When it comes to practical application and knowledge transfer, it might even be possible to assign student projects concerning the sustainable optimization of church buildings."

What motivates you to work on the Council? Will you remain a member?

VOLZ: "I enjoy giving advice and getting personally involved in shaping and advancing the sustainability strategy and achieving the target of CO_2-neutrality by 2030. They will make the Frankfurt UAS a driving force for sustainability in the city. Specifically, I envision creative and innovative projects with church partners which extend into the city, clearly underscoring our shared responsibility for a sustainable future."

Dr. Gunter Volz © privat

Contact

Dr. Gunter Volz
Pastor for Social Responsibility
Evangelical City Deanery of Frankfurt and Offenbach
Member of the Frankfurt University of Applied Sciences
Sustainability Council

AStA Environmental Office

Participation and awareness

Promoting sustainable thinking and acting, raising awareness of environmental issues

In May 2023, the Environmental Office of AStA began its 49th term. We, the AStA board members, Enis Dogan, and the two environmental officers, Sophie Häuer and Caroline Löw share our passion for socio-ecological issues. Together, we are committed to representing student interests in areas such as climate, nature, environmental protection, and sustainable development on and around campus. New to the role, we have been focusing on understanding the current topics and university structures. We hold regular meetings to exchange ideas and develop formats that inform students and encourage them to act.

One of the biggest tasks we have set ourselves is to foster sustainable mindsets and behavior at our university while raising awareness among students from all faculties. In June 2023, we hosted a quiz night on sustainability, sharing knowledge in a playful environment. The event received great feedback, and we plan to host another quiz soon with new questions.

We are especially keen to raise awareness about how people's daily actions impact the environment and nature, and how students can make their lives more environmentally friendly. There are several projects and events on our to-do list: workshops on reducing food waste and cooking, plant swap parties, lectures on the theory and practice of socio-ecological transformation, and excursions to relevant locations in the Rhine-Main region.

One social sustainability project that we inherited from our predecessors is the provision of free menstrual products. In addition to the two red dispensers already installed in the restrooms of Building 4 and Building 10, we would like to install more dispensers, including in unisex restrooms, to make access to hygiene products easier for everyone.

Networking with a wide range of stakeholders within the university and across the city and region is very important to us. We greatly appreciate our ongoing exchange with the Sustainability Office and are pleased to participate in council meetings, which give us an opportunity to represent our students' environmental interests of students and actively participate in ongoing projects.

Among other things, we are currently advocating for the bike repair shop to find new premises on campus, for more water fountains to be installed, for improved waste

separation and reduction, for future campus plans to incorporate climate adaptation, and for energy efficiency and sustainable water management to be prioritized in any new construction or renovation projects at the university. Our goal is to influence university processes and help create good conditions for students.

We eagerly welcome suggestions and gladly support creative ideas brought to us by students or staff.

AStA-Umweltreferat © T. Buch

Contact

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Professorships in Sustainability

Embedding sustainability as an interdisciplinary theme

In the 2023/2024 winter semester, the Frankfurt UAS established four sustainability professorships: one in each faculty. Prof. **Dr.-Ing. Jan Dieterle** assumed his appointment as Professor of Sustainable Open Space and Urban Design in Faculty 1 in October 2022. **Prof. Dr. Timo von Wirth** joined in early 2023 as Professor of Socio-Economic Transformation with a Focus on Sustainable Mobility in Urban Regions for Faculty 3. **Prof. Dr.-Ing. Bhavin Kapadia** started as Professor of Sustainable and Modern Drives/Mobility in Faculty 2. Finally, **Prof. Dr. habil. Caroline Schmitt** was appointed as Professor of Ecosocial Work and Care in Faculty 4 in September 2023. The four sustainability professors had their first joint appearance at the university's fourth Sustainability TALK on November 15, 2023.

Faculty 1: Sustainable open space and urban design

Various crises are increasingly impacting our living environment. Our own actions are endangering the habitability of our planet. The concept of the planetary boundaries and the Sustainable Development Goals (SDGs) jointly provide a framework for creating ecologically balanced, socially just living conditions. However, designing sustainable urban environments also requires an understanding of the specific logic of the landscape. Ecosystem-based design is centered around the urban landscape and its diverse, interacting ecological and social systems, which becomes not just the context for planning but a project in itself. Change, dynamics, and openness must be taken into account as core characteristics. The city, as part of the urban landscape, is not just a source of problems. It is also a space for innovation and experiments, taking place in harmony with ecological processes. In many cases, it is not immediately apparent which problem needs solving. Every transformation of a place is a unique, complex puzzle: linear methods of problem-solving are simply not useful. What it takes are creative processes which can define the problem and, on that basis, develop equally creative solutions.

This insight informs my practical, design-oriented approach to research and teaching in various bachelor's

and master's programs in architecture, infrastructure planning, and, most notably, urban planning. Beyond teaching, I am responsible for leading the new bachelor's program in urban planning and developing interdisciplinary teaching modules. Foundational modules, core seminars and project work all focus on topics such as ecology, climate, open spaces, and urban structures. In one seminar, we used the Wiesbaden district of Biebrich as a case study for the transformation of existing urban structures and systems, discussing potential strategies for these processes with the general public during two participatory events on site. Ultimately, any project should be aesthetically engaging – appealing to all the senses. But we must always be aware that it will never be truly finished.

Prof. Dr.-Ing. Jan Dieterle
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Faculty 2: Sustainable mobility

The four new sustainability professorships are a unique opportunity to introduce a holistic, systems-based perspective into teaching and research. It allows us to address the multidimensional nature of sustainability, shaped as it is by the interplay of social, technical, economic, and legal aspects. Any new mobility solution must take these diverse dimensions into account. As one of my first goals, I will work with the other sustainability professors to integrate this comprehensive perspective into our degree programs.

In parallel, we are expanding existing topics within our programs. In the M.Eng. in General Mechanical Engineering, for instance, the Automotive Engineering module will delve deeper into emissions and the interplay between energy and mobility solutions. We will strengthen the connection to sustainable drive system development, especially in terms of material selection and recycling. As well as experiments with alternative fuels, the Alternative Drive Systems module will incorporate studies on systems such as fuel cells and battery units to enhance the practical relevance of the content. We will adapt the lab facilities to support research into modern drive systems. In the B.Eng. in Mechanical Engineering, we will introduce an elective module on sustainability; this will also be made available in the Interdisciplinary General Studies module in collaboration with other sustainability professors.

Sustainable development requires a detailed understanding of the complex interconnections at play within our world. We are researching these connections as a way to gauge the long-term impact of mobility solutions. Their effective implementation also demands international collaboration involving both industry players and international research institutions, so we are determined to expand these research partnerships with foreign universities and industry partners. As a first step towards this goal, we are embarking on an EU-funded project involving partner universities in Austria and Croatia. Its aim is to help higher-education institutions in the Western Balkans incorporate sustainability topics into their own teaching and research.

Sustainability is not a goal in and of itself: It is a continuous process that constantly calls for new, innovative solutions. Leveraging this new knowledge and our interdisciplinary, international collaborations, we seek to achieve sustainable development in the mobility sector.

Prof. Dr.-Ing. Bhavin Kapadia
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Faculty 3: Guiding the transition towards a more sustainable future

I joined the Faculty of Business and Law as a sustainability professor in early 2023. My work at the faculty revolves around the governance of socio-economic and socio-ecological transformation processes in urban regions and within the mobility, energy, and agricultural sectors. Questions of social justice and distribution are particularly important to me, and I also focus on aspects of space and health in the context of the mobility transition – for example, by highlighting the health benefits of active mobility.

What makes this sustainability professorship especially appealing to me is the opportunity for interdisciplinary and transdisciplinary work: I participate in interdisciplinary degree programs, collaborate with industry partners and professors from a wide range of disciplines. In my view, sustainability always requires an inter- and transdisciplinary, systems-based perspective. In future, we will increasingly need to focus on sector coupling. For example: The mobility transition is also an energy transition – and vice versa. We need to work at the intersection of sectors.

Over the coming years, we will focus on the concrete development of the required change processes that will allow us to make societies more sustainable. Both people and institutions tend to be quite firmly entrenched in their established routines and the existing social structures. Fundamental change demands strong, external impulses. It requires social innovation, functional alternatives, political courage, and transparent negotiations surrounding the resulting distribution conflicts and challenges raised by the transformation. In my role as a researcher and educator, I will be putting this transition center stage.

Global warming, the loss of biodiversity, and growing social inequality are extremely urgent issues. My research will examine changes in existing regulations, markets and infrastructure, reflecting critically on their consequences while involving various stakeholders from wider society. Future visions and sustainability experiments may function as helpful, local learning processes. We will also need to intensify our engagement with topics such as post-growth and the principles of a new economy based on the common good. Transitioning to a circular economy, for example, will require entirely new business models and skills – this will inevitably give rise to some conflicts. I intend to discuss these conflicts and tensions in my classes, too.

Prof. Dr. Timo von Wirth
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Faculty 4: Ecosocial work and care in times of manifold crises

The Professorship of Ecosocial Work and Care is embedded into Faculty 4: Social Work and Health. My teaching, research, and third-mission activities seek to reimagine inclusion, solidarity, peace, and care – both between people and with the planet – as drivers of ecosocial transformation in an age marred by catastrophes.

The consumeristic, growth-oriented societies of the world's capitalist hubs overexploit the world's ecological and social resources, thus preventing the just and sustainable use and distribution of these resources for all. While everyone's survival is threatened by the direct and indirect consequences of these global crises, not everyone is equally affected. Often, marginalized groups bear the brunt. As a profession centered around human rights, social work is concerned with the well-being of all – but especially those at the margins of society. My professorship explores these issues, seeking to answer the question of how society can become truly just and fit for the future. Its key topics are ecosocial work, green social work, social work as disaster relief, ecosocial solidarity, care, social movements, inclusion, and peace.

One of my ongoing research projects examines the psychosocial consequences of the disastrous July 14, 2021 floods in the Ahr valley and observes how community spaces are being rebuilt. Its initial findings were presented at the conference "Crisis, Disaster, Collapse: The Role of Social Work – Intersectional and Decolonial Perspectives," held at the Frankfurt UAS from September 29–30, 2023. Solidarity-based urban movements advocating for inclusive urban spaces ("solidarity cities") are another focal point. Funded by the Gerda Henkel Foundation, the project titled "European Areas of Solidarity (EASY)" (Project Lead: Schmitt, Co-Lead: Hill, PhD Candidates: Can, Hofmann), beginning in March 2024.

To expand the professorship and foster transnational learning, we are strengthening our international and regional partnerships and networks. These include collaborations with colleagues from India, Sri Lanka, the UK, the US, and Switzerland on Disaster Risk Reduction and Recovery. I leverage these synergies in my teaching.

Starting in the 2023 / 2024 winter semester, I will work with students and external partners on examining ecosocial problems and developing ecosocial utopias. We will implement a participatory photo-voice project on the theme of sustainability and climate justice, giving a platform to "voices of sustainability."

At the institutional level, the research findings, ideas gained from teaching, and insights from both regional and international networks will be aligned with the Frankfurt UAS's sustainability strategy. This allows us to generate new transformation knowledge and integrate it into the curriculum together with our colleagues in Faculty 4, various external partners, the Sustainability Office and the other sustainability professors.

Prof. Dr. habil. Caroline Schmitt
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Prof. Dr. Timo von Wirth, Prof. Dr. habil. Caroline Schmitt, Prof. Dr.-Ing. Jan Dieterle, Prof. Dr.-Ing. Bhavin Kapadia © Frankfurt UAS

Equal opportunity and diversity

Facilitating equal participation

Sustainability through equal opportunity and diversity

In 2022, the university established its Equal Opportunity and Diversity Unit. It addresses equality, equal opportunities, family- and care-friendly policies, diversity, anti-discrimination, and studying with disabilities or impairments. The university has also committed to establishing a comprehensive sustainability strategy in these areas. This initiative is aligned with SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), and SDG 4 (Quality Education). The office is well-resourced, with nearly all positions being permanent, ensuring its continuous development.

The unit develops, monitors, and evaluates equality measures to provide women (and all genders) with equal educational and career opportunities. It seeks to promote diversity and participation among students and staff in teaching and research, enable the reconciliation of family and caregiving responsibilities with study and work, reduce and actively combat discrimination, and support students with disabilities in achieving academic success. Between 2022 and 2023, it elaborated comprehensive gender and diversity reports, developed further-education and support programs for female students in STEM disciplines, improved examination conditions for students with disabilities, set up the conditions for expanding childcare options, and expanded counseling and training services in the field of anti-discrimination. We are gradually integrating equal opportunity and diversity as interdisciplinary teaching and research topics. In 2022, the university introduced a flexible working model which allows employees to work up to 60% remotely or from home, facilitating a better balance between family duties and work. A major challenge is the continued need to increase and sustain the proportion of female students, academic staff, and professors in STEM and making these disciplines more diversity-friendly.

The university's sincere commitment to sustainability is underscored by its long-standing participation in the family-friendly university audit, which dates back to 2004. It received its seventh two-year certification in 2023. The Frankfurt UAS plans to participate in the donor's association Diversity RE audit from 2020 to 2025.
In 2024, a cooperation agreement will be signed with the non-profit organization Arbeiterkind.de, further strengthening the collaboration and providing even more targeted support to first-generation university students. The funding from the Professorinnenprogramm III (Female Professorship Program III) not only gave a boost to our gender and diversity monitoring, it also allowed us to establish new project positions which develop concepts for gender- and diversity-sensitive recruitment practices.

Today, our university is on track for providing all its students and staff – regardless of their background, gender and any other characteristics – with equal opportunities for participation, successful education, and career advancement in academia and beyond.

Dr. Margit Göttert ©S. Kösling

Contact

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Networks

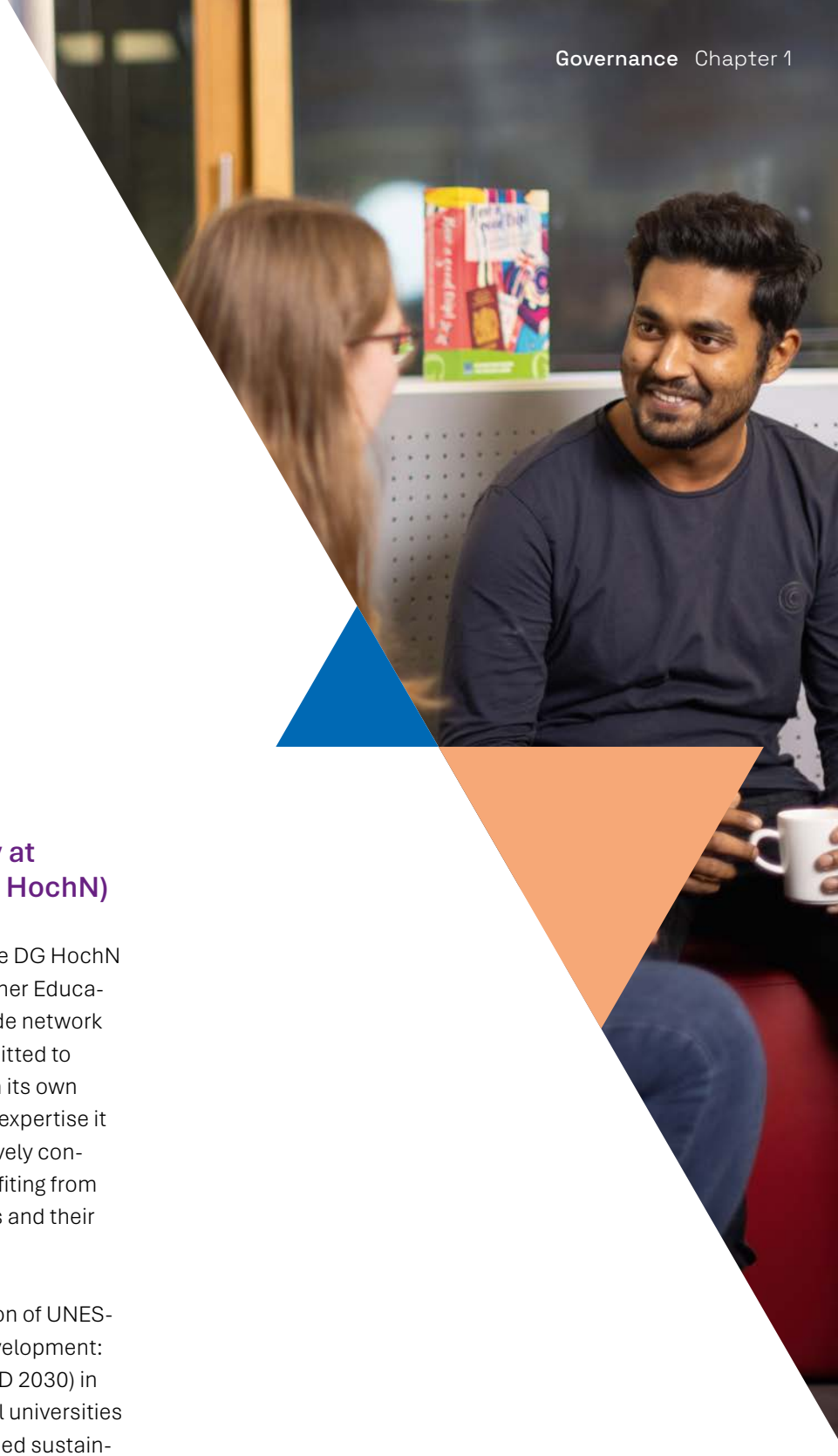
Connecting at the State and National Levels

Network Sustainability of Hessian Universities (NNHH)

Making institutions more sustainable is an overarching goal which affects all universities of applied sciences (HAW) and universities in Hesse. This is due to the Hessian Higher Education Pact (Hess. HSP) 2021–2025, which emphasizes the role of universities as "laboratories shaping the future of society" in the transformation towards sustainable societal development. It also underscores the importance of universities as role models in the responsible management of resources in construction, property management, and environmental management (energy, mobility, waste, procurement).

Technische Hochschule Mittelhessen (THM University of Applied Sciences) has established a sustainability network aimed at addressing common issues facing all Hessian universities. Its first meeting took place on 31 January 2022. The Network Sustainability of Hessian Universities (NNHH) serves as a platform primarily for Hessian universities bound by the Hessian Higher Education Pact, but it is also open to other university stakeholders from Hesse. Representatives from the Hessian Ministry of Higher Education, Research and the Arts (HMWK) are also part of the network.

The NNHH functions as a sustainability commission as per the Hessian Higher Education Pact 2021–2025. The Frankfurt UAS is represented in the network by Vice President Prof. Dr. Susanne Rägle and Marina Ringwald, Head of the Sustainability Office.



German Society for Sustainability at Higher Education Institutions (DG HochN)

In the fall of 2023, the Frankfurt UAS joined the DG HochN – the German Society for Sustainability at Higher Education Institutions, becoming part of a nationwide network of universities and university members committed to advancing sustainability in their field. Through its own efforts towards greater sustainability and the expertise it has gained from them, the Frankfurt UAS actively contributes to the network's activities while benefiting from the sustainable initiatives of other universities and their members.

DG HochN aims to support the implementation of UNESCO's program "Education for Sustainable Development: Realizing the Global Sustainability Goals" (ESD 2030) in German higher education. Within its vision, all universities in Germany should visibly and effectively embed sustainability and education for sustainable development in the sense of the 17 Sustainable Development Goals (SDGs) in their research, teaching, operations, governance, and knowledge transfer by 2030. Further, all students in the German higher-education system should be able to acquire a significant skill level in the field of sustainable development in their respective degree programs.

All members of the Frankfurt UAS may join DG HochN free of charge through the university's institutional membership. This enables them to contribute to sustainability in German higher education.

Mitglied von
DG HOCH N
Deutsche Gesellschaft für Nachhaltigkeit an Hochschulen e.V.

For more information, see:
www.dg-hochn.de/startpage

Chapter 2: Studies and teaching

We implement sustainability is a visible, interdisciplinary aspect of all our degree programs. In addition to specialist knowledge and skills, we furnish all our students with a broad understanding of sustainability.

They are taught to consider all dimensions of sustainability – ecological, social, economic – equally and analyze and assess relevant questions accordingly.

From the Sustainability Strategy

→ Key figures on studies and teaching

4 **faculties**

with **73** **degree programs**

1.128 **graduates** in the 2022 summer semester

68,7 % of whom completed their programs **within the standard period of study** +2

968 **graduates** in the 2022 / 2023 winter semester

58,9 % of whom completed their programs **within the standard period of study** +2

Student satisfaction (would recommend):

51 % (2022)

Student / professor ratio

2022	2023
59 / 1	56 / 1

Share of female professors (in STEM):

2022	2023
38 % (23 %)	39 % (22 %)

Working spaces at the learning center

2022	2023
200	252

Learning counseling

2022	2023
100	89

Studies and teaching set sail for sustainability

Sustainability is an increasingly important factor in education. All university graduates need to acquire relevant competencies to navigate a rapidly changing world and contribute to its sustainable future. As well as concrete expertise, universities must impart interdisciplinary skills: key competencies, personal development and social responsibility form the basis of all sustainable education concepts.

The Frankfurt UAS is keenly aware of its social responsibility as a university and regards sustainability as one of its most important defining features. Its appointment of a sustainability professorship in each faculty underscores the importance of this topic in teaching. Students are taught to consider all dimensions of sustainability – ecological, social, economic – equally, analyze and assess relevant questions accordingly, recognize sustainability challenges, and, wherever necessary, develop concrete solutions.

This includes the most urgent challenges we all face: climate protection, environmental regeneration, gender equality and, above all, quality education – because education is the key to solving the problems of the future. In their role as ambassadors, Frankfurt UAS graduates are expected to help realize the 17 UN Sustainable Development Goals (SDGs) at the local, national, and international level. In this way, the university's teaching contributes to the long-term viability of society and the world.

The following chapter provides examples of how the Frankfurt UAS integrates sustainability into teaching, both in terms of content and methodology.

Statements from the Dean's Offices

Faculty 1: Empowering students to advance sustainability with courage and a critical approach

Education for sustainable development empowers people to bear the future in mind in everything they do. Understanding the impact of one's own actions is just as important as remaining effective in complex situations. The key principles of sustainable education are future-oriented thinking, the connection of interdisciplinary knowledge, and transformative learning. Designing and plan-based thinking – already key competencies for engineers, architects, and urban planners – are fundamental skills required to tackle the complex challenges of our era.

As such, sustainability is more than an add-on to existing courses. It is an integral part of all teaching in Faculty 1. Beyond the lecture hall, our role as a university is also to spark a shift in society's ideas and action patterns. Projects and workshops can initiate civil society change processes, as can future-oriented degree programs such as Infrastructure and Environmental Protection, Sustainable Mobility, and Sustainable Structures.

Especially urgent topics, such as CO_2 reduction, climate change adaptation, the mobility transition, environmental justice, and a circular economy, must be incorporated holistically across the board – into every assignment, every design, every lecture. How these issues are addressed varies widely. The "Wasteland" project, for instance, focused on resource management and raising awareness of it among as many Frankfurt residents as possible. The living lab project "Wildnis Hauptwache" encouraged an unconventional shift in perspective by exploring biodiversity in urban spaces and the ongoing loss of species. For the "Construction 8" module within the master's degree program in Architecture, students worked on a comprehensive sustainable renovation and reuse concept for the Juridicum building in Frankfurt Bockenheim.

Sustainability is also a core element of the Civil Engineering curriculum. Some of its modules and projects explicitly put sustainability center stage, such as the sustainable lightweight construction of a concrete canoe. The environmental impact assessment of a building, carried out by civil engineers, is a fundamental component across all stages of planning, construction, and operation. A structure can only be truly sustainable if all disciplines and stakeholders collaborate in the overall project.

Nine bachelor's and eleven master's degree programs in Faculty 1 allow students to study geodata management, civil engineering, architecture, or urban planning in various specializations and with different areas of focus. They all share one common goal: equipping students with the knowledge they need to approach the world courageously and critically, capable of taking action themselves.

Prof. Dipl.-Ing. Jean Heemskerk
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Faculty 2: Sustainability is not optional, it is our duty

Sustainability in engineering is a fundamental and imperative concept addressing the complex relationship between technological progress, environmental responsibility, and societal well-being. As the world grapples with urgent challenges such as climate change, resource depletion, and a growing global population, the role of engineers in promoting sustainable practices has never been more crucial.

Fundamentally, sustainable engineering incorporates environmentally conscious and socially responsible principles into the design, development, and implementation of technological solutions. Resource efficiency is a crucial aspect of this. Engineers must endeavor to minimize the depletion of finite resources and reduce waste throughout the entire life cycle of a product.

Another critical dimension of sustainable technology is energy efficiency, and engineers play a pivotal role in the development and implementation of technologies that run on energy from renewable sources, improve energy efficiency, and reduce greenhouse gas emissions. Sustainable engineering also involves designing buildings and infrastructure which prioritize energy conservation and promote the use of clean alternative energies.

In the transportation sector, engineers can contribute to the reduction of air pollution and climate change by developing electric vehicles, improving public transportation systems, and researching alternative fuels to make our urban environments more pleasant and livable.

Apart from technical considerations, sustainable engineering demands a holistic and interdisciplinary approach. Collaboration with environmental scientists, policymakers, and communities is just as important as the involvement of third-party stakeholders who can help ensure that all projects respect cultural diversity, uphold social justice, and minimize negative impacts on vulnerable demographics.

In summary, sustainability in engineering is not just a choice, it is our duty. And our Faculty 2 at the Frankfurt University of Applied Sciences takes its duty seriously. Engineers possess the expertise and potential to shape the future, and this power comes with the responsibility of prioritizing the well-being of our planet and all its inhabitants. Sustainable engineering is an opportunity to create a world in which technological advancement can coexist in harmony with the natural environment, leaving a legacy of progress for future generations.

Prof. Dr. Hektor Hebert
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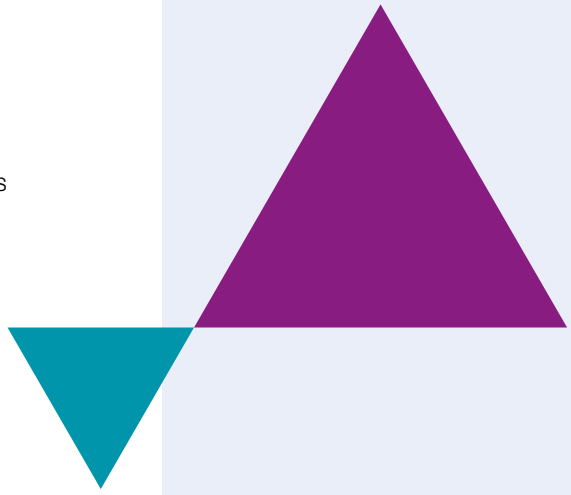
Faculty 3: Expanding sustainability across all areas

As we continue to develop the degree programs offered in Faculty 3, we are also expanding the core curriculum with the addition of sustainability-related modules. They incorporate relevant topics in both the foundational and specialized areas of our degree programs. Examples include modules in sustainable business management and finance. In their core electives, too, students have opportunities to explore sustainability – for example, by joining an international sustainability project. In early 2023, Faculty 3 established a sustainability professorship focusing on the governance of socio-economic and socio-ecological transformation processes in urban regions and within the mobility, energy, and agricultural sectors. Many of the faculty's research projects focus on sustainability. For example: The Research Lab for Urban Transport (ReLUT), jointly managed by Faculties 1 and 3, carries out applied research into topics such as bicycle mobility, cargo bike logistics, and improving public transportation in rural areas.



At the administrative level, we have digitized paper-based processes, such as applications for business trips, vacation requests, and exam committee submissions, to reduce our resource consumption. The submission

procedure for assignments and examination has been transitioned from physical to digital formats across the board. In addition, the faculty played an important role in piloting a digital examination platform, which seeks to further reduce our resource use during examinations. Printers in individual offices, which often result in higher print volumes, have largely been replaced by communal printers for groups or departments. In our PC labs, all desktop computers have been replaced with mini-PCs equipped with mobile CPUs, as these consume considerably less energy.

Going forward, Faculty 3 remains committed to sustainability. We will continue to expand our efforts in all relevant areas in the coming years.

Prof. Dr. Dietmar Franzen
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Faculty 4: Social sustainability remains a priority

With more than 3,500 students, our Faculty 4 – Social Work and Health is among the largest of its kind in Germany. Its Social Work degree program has more than 2,500 students, making it the largest program in this field in the country. It covers the entire spectrum of theoretical and applied fields in its discipline. The curriculum includes subjects such as diversity, inclusion, migration, addiction, poverty, sustainability, culture, and media. Graduates from the bachelor's program have the opportunity to pursue a master's degree and even a doctorate through the cross-university doctoral research center for Social Work, which makes the Frankfurt UAS a unique place to study this discipline.

With ten research institutes, a significant number of researchers and its integration into the research-driven teaching model, the faculty is highly research-driven. We will continue to develop its profile in a systematic manner over the coming years: The new dual degree programs in Care and the scientifically grounded midwifery training programs use innovative teaching methods, some of which utilize high-tech skills labs.

We continuously improve and advance our management programs in the healthcare professions and new aspects of vocational pedagogy for care and health professions. Social sustainability remains a priority for our faculty and students alongside other dimensions of sustainability. Many modules of our degree program already reflect this. Recognizing the importance of sustainability, the faculty has established a working group which will widen our focus to include other relevant aspects. In the 2023/2024 winter semester, Prof. Dr. habil. Caroline Schmitt was appointed to a new sustainability professorship in Ecosocial Work and Care.

The faculty welcomes and supports all measures and discussions which have been initiated to enshrine sustainability considerations in our university operations and our teaching. At present, the faculty offers six bachelor's degree programs, eight master's degree programs, two further-education master's degree programs, and a cross-university doctoral research center for Social Work. A total of 23 bachelor's and five master's modules already focus on sustainability either as an integrated component or as a key topic.

In future, we will further emphasize and expand the integration of sustainability into our degree program development process at the module level. We want each module to make a clearly recognizable contribution to the Sustainable Development Goals (SDGs), which will ensure that our students systematically focus on sustainability, in turn.

Prof. Dr. Barbara Klein
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Degree programs with a sustainability focus

Infrastructure and Environmental Protection (B.Eng.)

Shaping the infrastructure of our future: the new bachelor's degree program "Infrastructure and Environmental Protection"

Climate change and the resulting measures taken to reduce greenhouse gases and adapt to new conditions are increasingly affecting the field of infrastructure, too. The mobility transition, securing the water supply, waste and wastewater disposal, and the energy transition are some of the major challenges in this area. Engineers with relevant qualifications play an important role and, accordingly, are in high demand. There is already a significant shortage of skilled professionals, and this will only worsen as the Baby Boomer generation retires in the coming years. Our new bachelor's degree program is aimed at students with an interest in infrastructure who may not have previously been drawn to the many aspects of civil engineering.

Demand for graduates from all areas of civil engineering is extremely high, and the existing bachelor's degree program alone cannot meet these needs. In particular, state road construction authorities (mainly Hessen Mobil) and federal agencies are looking for suitable staff. Opportunities are also available with railway infrastructure companies which operate large centers in the Rhine-Main area (e.g. DB Netz and DB Station & Service, also DB Cargo and HLB), water supply and wastewater management companies, national and international engineering firms with major offices in Frankfurt, municipalities, ministries, and public authorities.

The bachelor's program in Infrastructure and Environmental Protection is aimed especially at students who are interested in broader societal and political issues as well as engineering. Infrastructure increasingly intersects with social and political issues, for instance, water supply and human mobility. This makes the new program, developed from the existing B.Eng. in Civil Engineering through close collaboration with internal and external experts, suitable for students who wish to develop sustainable technical solutions which benefit wider society.

The two programs share numerous modules, with the B.Eng. in Infrastructure and Environmental Protection introducing new modules focused on sustainability, geoinformation, energy, and digitalization which equip graduates with broader skills and a distinct profile compared to traditional civil engineering.

We are very pleased with the launch of this program and look forward to future developments.

SDGs: 6 9 11 13

Contact

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Sustainable Structures (M.Eng.)

Sustainability in construction has been a key topic of Faculty 1 ever since the establishment of the M.Eng. in Sustainable Structures, which focused on high-rise construction, in 2006. It is aimed at graduates with undergraduate degrees in civil engineering and architecture. Antoine de Saint-Exupéry famously said: “As for the future, your task is not to foresee it, but to enable it.” In the spirit of his words, students of this program learn to design, optimize, maintain, and repair buildings for a wide range of future scenarios.

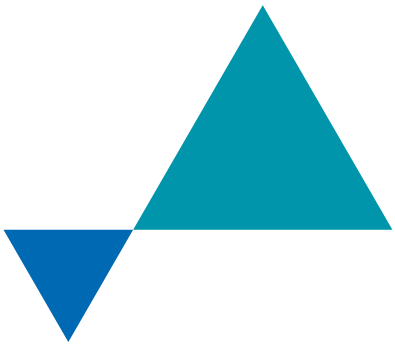
In interdisciplinary groups, they explore the fundamentals of sustainable construction and deepen their knowledge during various projects. As well as resource conservation and energy optimization, the program focuses on economic, social, and cultural aspects and construction with and within existing buildings.

For example, energy simulations and life-cycle assessments are used to teach students how to quantify and evaluate the impact of various future scenarios and develop recommendations for construction tasks. This approach also involves analysis and evaluation of construction methods from different climate zones.

We continuously update this program to respond to future learning and teaching needs and new developments in the field. Students are encouraged to engage with research projects taking place within the faculty. This introduces current issues into the program and gives students an opportunity to practice academic research. In the 2023 summer semester, for example, they participated in the Tiny Studio Lab – an experimental building on which they got to test concepts and prototypes at a 1:1 scale. They carried out initial projects on green facades and observed their climatic impact on buildings. These 1:1 scale experiments are a way to validate and calibrate simulations of such facades.

Demand for this degree program is on the rise, with graduates active across all areas of planning, building, and operating high-rise structures. Many of its graduates contribute to it as lecturers, bringing their professional expertise into the classroom to address current industry topics.

SDGs: 9 11 13



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Urban Planning (B.Eng.)

Shaping sustainable cities together

By 2050, an estimated two-thirds of the world population will live in cities. Even though cities currently occupy less than 3% of the world's land surface, they are responsible for approximately 80% of global economic activity and about 75% of all greenhouse gas emissions. They are simultaneously a driver and victim of change.

Seemingly unrelated crises – climate change, traffic collapses, water shortages, biodiversity loss, housing shortages, poverty, marginalization, unequal education opportunities, racism – all influence and exacerbate each other. All these issues directly impact the living conditions of urban populations.

Addressing these multitudinous, interconnected, interdisciplinary challenges at various urban scales is a key task of urban planners. They work on integrated development strategies and planning concepts for the sustainable advancement and transformation of urban spaces. They also communicate these plans, mediate between planning experts, and incorporate wider society through participatory formats. Urban spaces are the co-creative results of many intertwined actions, interests and needs. Making them livable, healthful and just for all living beings is the greatest challenge in this field.

The degree program is accordingly broad-based, with topics ranging from the socio-cultural, ecological, economic, and technical aspects of planning to architectural design, mobility, politics, and economics. From the second semester, students apply their knowledge and skills to practical assignments. Working in groups, they develop integrated concepts aimed at tackling the complex challenges inherent to urban areas across various scales – from buildings and open spaces to districts, cities, and regional landscapes. In-depth lectures, seminars, exercises, field trips, urban walks and suburban exploration enrich the project work.

Our goal is to turn curious, motivated, and enthusiastic students into experts in sustainable urban transformation.

SDGs: 9 11 13

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Global Logistics (M.Sc.)

Expertise in sustainable logistics

Transportation and road traffic generate at least 15% of all global CO_2 emissions. [1]The M.Sc. in Global Logistics focuses on sustainable approaches to these topics. Working in tandem with the megatrend of digitalization, the mobility transition and the question of zero-emission transportation are transforming logistical flows and concepts. This is especially advanced in the area of last-mile logistics, the final delivery of goods to customers.

Zero-emission and low-emission solutions, such as the use of cargo bikes or electric delivery vehicles, are the topic of the Hub & Transport Logistics module, which explores the potential, limitations, and challenges inherent to these ideas. Students additionally benefit from guest lectures delivered by industry professionals, with topics including hydrogen-powered trucks, cargo bikes, and micro-hubs from a textile-sharing provider.

The logistics sector is also a hot spot for precarious working conditions, both in delivery services and in areas such as maritime shipping. The program addresses this problem by fostering an understanding of social sustainability.

In the Corporate Logistics module, student groups work on real challenges which our partner companies have faced. From collecting and analyzing emissions data to developing concepts for more sustainable logistics, they develop actionable recommendations for their “clients”. This might involve producing a feasibility analysis of hydrogen-powered trucks in a particular region or comparing and evaluating options for offsetting air freight emissions.

As well as exploring theoretical and practical sustainability solutions as part of the curriculum, students may focus on sustainability topics in their master’s thesis. Most theses are written in collaboration with businesses. This approach has shown how important sustainability is to the industry: Not only do many theses concern sustainability issues (for example, the analysis and selection of suitable tools to calculate transport emissions), but sustainability is almost always a consideration when evaluating logistical solutions.

The content taught in this program enables our graduates to play an active role in shaping the transition to sustainable logistics.

SDGs: 8 9 13

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[1]Source: IEA - THE BREAKTHROUGH AGENDA REPORT 2023, https://www.iea.org/data-and-statistics/charts/greenhouse-gas-emissions-by-sector-2019-2

Social Work (B.A.)

A qualification for all areas of social work

"How can we empower people experiencing economic, social, and cultural hardship to participate in society?" This question stands at the center of the B.A. in Social Work taught at Faculty 4. As such, the program aligns with many of the United Nations Sustainable Development Goals, in particular: SDG 1 (No poverty), SDG 5 (Gender equality), SDG 10 (Reduced inequalities), SDG 11 (Sustainable cities and communities) – inclusion plays a key role here, and SDG 16 (Peace, justice and strong institutions). All these topics are connected with fields in which Social Work graduates are active.

With 2,500 students, the Social Work program at the Frankfurt UAS is the largest of its kind in Germany. It broadly qualifies students for all fields of social work, covering interdisciplinary topics such as age, sex/gender, ethnic and cultural background, disability/ability, and sexual orientation. In addition, they can choose to specialize in education and training, exclusion and integration, planning and controlling, or culture and media. Core topics include child protection, racism, antisemitism, and democracy. Graduates can follow their studies up with a one-year internship to obtain official recognition as social workers or social pedagogues.

The work carried out in this field is diverse, with tasks evolving continuously in response to social change. Climate change and the associated ecological and economic crises, including migration and displacement, are playing an ever more important role. Graduates are employed by public institutions, charitable organizations, or companies; some provide personal services in the fields of consulting, education, childcare, prevention, organization and HR development, training, and care.

Instead of the six-semester bachelor's program, students can choose to embark on the eight-semester program Social Work :transnational, which adds an integrated semester abroad and a supervised international internship. This program particularly focuses on finding solutions for European and global social issues, such as unemployment, poverty, migration, multi-ethnicity, violence, and crime.

SDGs: 1 5 10 11 16

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Sustainability topics in the Interdisciplinary General Studies (ISG) program

The ISG teaches soft skills and is a required module for every bachelor's student. The content of this program provides insights into current cross-disciplinary topics and encourages interaction between students and teaching staff across faculties.

The following sustainability modules were offered in the 2023 summer semester:

- → Citizen Science for Sustainable Development
- → Design
- → Renewable Energy – Climate Protection Solutions
- → Civic Engagement
- → Global Class – Debate & Negotiate
- → Exploring and Developing Inclusive Worlds – Visionary and Sustainable
- → International Encounters – African Studies
- → Climate Change – An Existential Risk
- → Crisis Management
- → Nature and Technology
- → Ecological Sustainability
- → Smart Cities
- → Social Engagement
- → Future Aspects of the Automotive Industry

ISG: Developing democratic competence for sustainable development

The module Citizen Science for Sustainable Development in the General Studies program introduces students to democratic processes affecting their immediate living environment. Issues of local politics are particularly suitable. The course links students' personal involvement – of which they are often not consciously aware – with the practical experience of game design to develop an understanding of democratic problem-solving processes. Their assignment for the module is to transform a real-world problem into an interactive game concept. Involving bachelor's students from all faculties, the Interdisciplinary General Studies program fosters a high degree of diversity. It links this diversity to the modern paradigm of citizen science and the notion of sustainable development. This module is highly relevant to SDG 16 (Peace, justice and strong institutions): It strengthens citizen participation in environmental and urban development, as outlined in the Open Government Partnership (OGP).

At the beginning of the module, students are divided into small teams of four to five members. This is done mostly randomly while also considering the diversity of faculties and genders, similar to real-life work environments. Asked to work with sustainability in mind, each team is then assigned a problem from a local community (e.g., energy, transportation, water, forest management). In order to solve their particular problems, the teams must independently establish a dialogue with the people of the community in question. In the style of a sustainable empirical theory, students analyze the problem and transform it into a solution. This should take the form of a playable game where players can explore the issue and outline potential ways of resolving it.

The game format cultivates both cognitive and emotional, pragmatic learning dimensions. Teams design their games with sustainability, their target audience, and their learning objectives in mind and then test their creations through play and during a presentation. Both traditional and digital game development is permissible, with the latter using the software OKSIMO, programmed parallel to the course's development. This didactic concept is an expansion of problem-based learning, an approach which aims not only to develop a possible solution but a playable problem-solving methodology.

SDGs: 11 16

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ScoPE – transformative skills for sustainability

The School of Personal Development and Education (ScoPE) is a central academic institution at the university. It operates and develops programs with a focus on personal development and civic engagement, available to students, teaching staff and other employees from all departments. In the broader sense, it also supports civil society by contributing to a shift towards mindful and sustainable higher education.

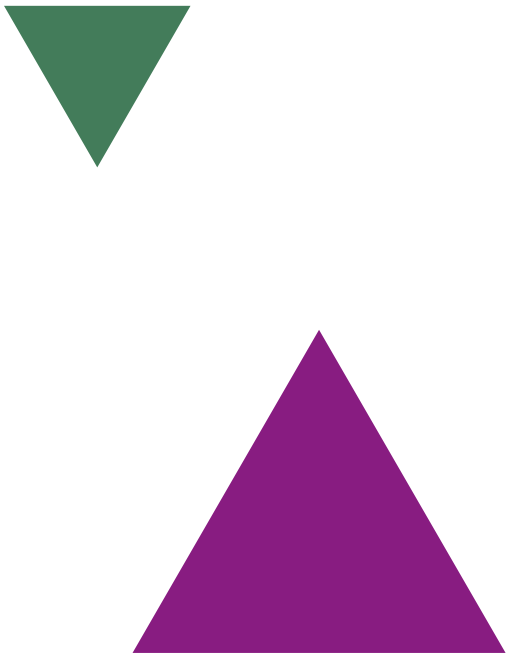
Without a commitment to social and environmental responsibility, society cannot be sustainable nor just. The civic engagement of future generations is absolutely essential, as they will be the ones shaping and developing our world. As a central educational institution preparing many young people for their future careers, the university holds a special responsibility (SDG 4).

At ScoPE, we contribute by encouraging future generations to play an active role in society, work towards a positive future and build a vibrant and democratic community where all citizens have a voice. We pursue this goal through a broad range of workshops and courses, including at the international level.

In the field of service learning, we combine academic teaching and studies with a concrete focus on the common good. Our advisory and support services are aimed at our collaborators, teaching staff, and students alike. Within the scope of the U!REKA Change Agents program run by the European university network U!REKA, an interdisciplinary and international group of our students tackles urgent issues related to sustainable water use across European cities (SDG 6, 11). At the Festival of Democracy, ScoPE contributed to a multi-perspective exploration of democracy, its modes of operation and opportunities for participation (SDG 16). The program involved various interactive activities which transformed the campus into a debating arena.

As part of the Network Initiative for Transformative Skills for Sustainability (Netzwerkinitiative Transformative Skills für Nachhaltigkeit), we are working with the sustainability professorships to design new teaching modules that focus on imparting sustainability competencies. Students are encouraged to acquire transformative skills for sustainability not only because they are relevant to their specific field of study but also because they are in high demand in the job market. In interdisciplinary and cross-faculty workshops, teaching staff are shown how to integrate sustainability-oriented transformative skills into their teaching. Deepening the link between academia with practice, we are developing further-education programs focused on transformative skills.

SDGs: 4 11 16



ScoPE-Team © ScoPE

ScoPE
School of Personal
Development and Education

Contact

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U!REKA – working together to make European cities sustainable

For a sustainable, inclusive, future-proof transition towards climate-neutral, smart cities

The U!REKA (Urban Research and Education Knowledge Alliance) university network comprises the Frankfurt UAS alongside six partner universities and other stakeholders. Founded in 2016, its purpose is to develop solutions for sustainable European cities. Following its successful application to the EU's 2023 European Universities Initiative under the title U!REKA SHIFT (Sustainable Human Inclusive Future-Proof Transition), the network is now taking a significant step forward to establish a long-term strategic and structural collaboration as part of a European university.

Sustainability, digitalization, and inclusion are important responsibilities for our society. Addressing these complex issues and the associated societal transformation is often a systemic task, however. It requires collaboration between individuals and groups from a wide range of sectors, all of whom bring different perspectives, ideas, and interests to the table.

U!REKA Lab: Urban Commons

The U!REKA Lab: Urban Commons is a joint project of the U!REKA partner universities in Amsterdam, Ghent, Frankfurt, Helsinki, Lisbon, and Ostrava. Since its inception in 2019, the international and interdisciplinary blended-learning and research project has explored the concept of urban commons, shared resources in cities, focusing on various urban-commons initiatives which are striving to make urban spaces more environmentally and socially sustainable. It is a platform for students, teaching staff, and researchers from many disciplines to discuss a common topic and work on a joint research agenda. Its members meet in a variety of online and offline formats, which ensures a continuous exchange of knowledge. Their collaboration has produced joint exhibitions, presentations, and publications which strengthen not only international collaboration but also the expertise of the individual institutions within their local networks.

In the U!REKA Lab: Urban Commons, groups of local students from the participating institutions investigate the theoretical framework underpinning urban commons. They explore existing initiatives and community spaces by analyzing their goals, structures, and modes of operation. The goal of the project is a comparative analysis of approaches and examples from various countries, which will then inform a holistic view of the transformative role which urban commons and commoning might play in the cities of the future – be it in the context of social life, culture, mobility, climate change, or housing. U!REKA members study such community-based, urban processes of co-creation through the lens of audiovisual, artistic, and ethnographic approaches: from documentary video and sound production to (auto-)photography, (subjective) mapping, artistic interventions, and installations.

Their focus on urban commons is inextricably linked to ecological and social sustainability. We want to expand the incomplete paradigm of a "twin transition" (a digital and technological, economic and ecological transition) by adding the "social transition" towards more inclusive, socially sustainable urbanism as a third component. The way to achieve this is by strengthening system-critical, grassroots, community-based governance models. The social transition contributes to a shift in thought and

behavior, which is necessary to meet the challenges outlined in the 2030 Agenda for Sustainable Development.

SDGs: 11 12

Students of the M.A. in Sustainable Structures (Faculty 1 – Architecture, Civil Engineering, Geomatics) and the M.A. in Performative Arts in Social Fields (Faculty 4 – Social Work and Health) work together during a roleplay workshop on urban development for the common good. ©R. Gschrey

The U!REKA Lab

Urban Commons takes participatory approaches to its work by involving stakeholders and citizens in a co-creative knowledge production process. It also embraces commons strategies for the development and implementation of the educational agenda, encouraging students and social actors to participate in shaping and advancing the program. As a best-practice example of challenge-based collaborative education, the lab contributes to designing joint seminars and study programs and shaping an inclusive and sustainable educational agenda for the U!REKA SHIFT European university network.

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U!REKA Lab: Urban Commons
https://urcommons.eu

Focusing on sustainability in study orientation programs

What makes a successful study orientation program?

Many educational opportunities have opened up to high school graduates in recent years, and this freedom of choice often leads to decision paralysis when it comes to picking the right way forward. Study orientation programs seek to bring clarity by helping students make informed decisions about their studies, offering insights into academic life, and drawing their attention to lesser-known degree programs. Various engaging formats have emerged in recent decades, from subject speed dating to trial studies, lab days, university information days, and more.

Inspired by conversations with teachers, evaluations with student groups, and an internal assessment of our positioning as a university, our advisory service set itself a new goal: the development of formats that are more relevant to students' lived realities. Sustainability, alongside future skills and technologies, is a key focus.

These services primarily aim to raise awareness of the broad scope of sustainability among our students, using the 17 SDGs as a framework, and provide examples of how sustainability is integrated into our degree programs. The latter emphasizes that meaningful work in sustainability is possible across all fields of study, encouraging students to choose a program based on their own strengths and interests.

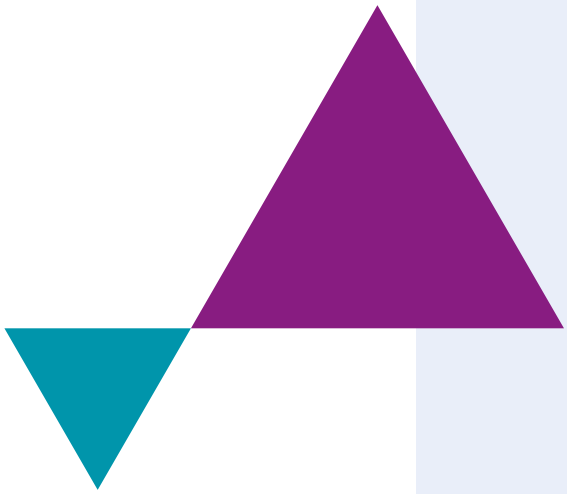
Existing offers with a focus on sustainability:

2022	MainStudy	Supplementary lectures on sustainability topics	320 students attended the lectures
2022	School and University Network Meeting (Netzwerktreffen Schule | Hochschule)	Panel discussion and exchange on sustainable education	30 school principals and teachers from the region attended
2022-2023	Workshops, lectures and project days for school groups	Discussion about the concept of sustainability and lectures on current research topics	85 school students attended

Feedback from participants has been overwhelmingly positive, with the student group workshops proving especially popular. One teacher from the Karl-Rehbein-Schule in Hanau reported: “Let me reiterate how much our students enjoyed the project day. They were very enthusiastic about the lectures and learned a lot.” Such formats also provide schools with an incentive to launch their own programs in the field of Education for Sustainable Development (ESD).

We, the Student Advisory Center, plan to expand these offers in the coming year and successively incorporate further sustainability topics using the resources available to us.

SDG: 4



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Chapter 3:
Research, further education, and transfer

In our academic environment, the topic of sustainability is a consistent and high-profile consideration across all research projects. Using our research insights, we create solutions for the sustainable development of a world that is fit for the future.

From the Sustainability Strategy

→ Key figures on research, further education, and transfer

3 **collaborative doctoral research centers**

Social Work;
Applied Computer Science;
Mobility and Logistics

3 **key research areas**

Care, Health, and Diversity; Digitalization and Information / Communication Technologies;
Mobility and Logistics

43

centers, academic institutions, and research areas

44

laboratories and research facilities

117

research projects (in total)

73 which are related to the SDGs **(12/2023)**

8

external further-education and qualification **programs** related to sustainability **(12/2023)**

Estimated **proportion of female doctoral students:**

44 % **(2022)**

Sustainability in research, further education, and transfer

Frankfurt University of Applied Sciences pursues a research strategy that is built on six pillars, which were established during a university-wide strategic workshop in 2019: practical relevance, social responsibility, sustainability, internationalization, digitalization, and interdisciplinarity. These strategic principles guide our decisions and actions across all areas of the university.

Leveraging the various disciplines at our disposal, we apply scientific insights, methods, and principles to concrete problems and tackle pressing societal challenges through innovative ideas, technologies, and a commitment to ecological, economic, and social sustainability.

Thanks to our interdisciplinary structure and profile, we can ensure that our cross-cutting themes are reflected in our day-to-day activities, supported by dedicated cross-disciplinary professorships: Our four sustainability professorships perfectly illustrate how we guide future research and teaching toward sustainability.

Our key research areas are Care, Health, and Diversity; Digitalization and IC Technologies; Mobility and Logistics. Sustainability is already at the center of all three areas, with concrete topics ranging from poverty prevention, social inequality, and gender and addiction to green coding and technical, social, and economic challenges and potentials of new forms of mobility and logistics (e.g., e-mobility). Further research topics from our various faculties include sustainable planning, construction and operations; urban and regional development; leadership; digitalization in law; sustainable finance; and research on assistive systems, care, and demographics.

The following pages provide a detailed overview of the sustainability research taking place in our faculties, our innovation professorships, and public-facing student model projects.

Sustainability research at Faculty 1

In 2020, the Federal Ministry for Digital and Transport (BMDV) selected the Frankfurt UAS as one of seven universities in Germany to receive an endowed chair in cycling. At that point, the topic had already become an important part of our research and teaching. Our activities in this field have been expanded and deepened thanks to the work of Prof. Dr.-Ing. Dennis Knese and his team at the Research Lab for Urban Transport (ReLUT).

Study on the impact of bicycle-friendly side streets

Frankfurt UAS supports the city of Frankfurt in becoming a “cycling city”

Promoting cycling is a key factor in implementing the urban mobility transition. To this end, the city of Frankfurt has adopted its “cycling city resolution”, which involves the construction of eleven bike-friendly side streets. The resolution aims to improve conditions for pedestrians and cyclists in streets with high volumes of motorized traffic through a range of provisionary measures: launching bicycle lanes, modifying traffic patterns, building new bicycle parking on former car parks, and expanding green and public spaces.

These projects require significant changes to how street space is allocated. As this is not uncontroversial and has sparked concerns in some groups, ReLUT is researching the effects of such measures by collecting data through multi-stage surveys in three streets (Oeder Weg, Grüneburgweg, and Kettenhofweg). The project aims to evaluate behaviors and gauge how the redesigned spaces are perceived and used, while also conducting interviews with local businesses to evaluate potential economic impacts. Accident analysis, traffic counts, and observations will be carried out to determine user behavior, potential conflicts in the streets, and changes in traffic volumes.

Initial findings on Oeder Weg reveal significant differences between user groups and modes of transportation, particularly in perceptions of traffic safety and acceptance of individual measures. Cyclists generally support many of the changes, while car users tend to express dissatisfaction with restrictions on motor vehicle traffic. This is reflected in the sharp decrease in car traffic and the increase in bicycle use. While some local businesses report negative impacts on trade, the majority of customers have had a positive experience and say they now shop on Oeder Weg more frequently. Many respondents agree that the overall quality of public space and traffic safety has greatly improved. Further research will explore commonalities and differences across the studied streets and investigate whether users adapt to the changes over time. Based on the research findings, the city of Frankfurt will decide whether to make the temporary measures permanent or adjust them. This project provides valuable insights into how public spaces can be designed to promote climate-friendly mobility and create livable cities.

SDGs: 9 11 13

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Sustainable mobility and cycling
Project: Study on the impact of bicycle-friendly side streets
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The construction industry produces 50% of Germany's waste and consumes 40% of global resources. The ReSULT (Research Lab for Sustainable Lightweight Building Technologies) researches and teaches the topic of sustainable lightweight construction, connecting questions of lightweight design with circularity and the carbon footprint. Prof. Dipl.-Ing. Claudia Lüling's project is an excellent example of this.

Lightweight building components made from 3D textiles in conjunction with 3D printing

The 6dTEX project explores a synergy between two previously unrelated production methods, 3D textiles and 3D printing. Professor Lüling's project aims to develop new lightweight construction applications by optimizing technical 3D textiles in conjunction with additive 3D printing processes. The three-dimensional, textile sandwich structure, which can optionally involve porosity differences in its outer layers and interspaces, provides a lost formwork and a way of transmitting tensile forces. Combining it with load-bearing 3D-printed materials results in resilient, lightweight, and structurally optimized composite elements. The project further seeks to increase circularity by creating these composites from materials belonging to the same material groups: Printed concrete skeleton structures combined with glass textiles, while sunshade applications used printed and textile materials consisting of recycled polyester (PES).

As a collaborative basic-research project between the Institute for Textile Technology (ITA) at RWTH Aachen University and the Frankfurt UAS (project lead), 6dTEX is funded by the Zukunft Bau grant program. All research into the initial combination of these technologies was carried out on an experimental basis, with the Frankfurt UAS focusing on 3D printing technologies, the development of application scenarios, and coordinated concepts for textile 3D geometries. ITA was responsible for producing the various textiles and evaluating the adhesion between the textile and printed materials.

Ultimately, construction use cases were demonstrated for two material groups with different fire protection classes. Firstly, flame-retardant sunshade elements made from a PES recycled composite, which are used as a support structure printed onto a textile and then tensioned into an arch. The result is a hybrid structure which can be assembled into a horizontal sunshade for urban spaces: The plasticity of the material provides glare and heat protection as it channels hot air through the openings created in the production process. The project won the European Textile Award 2024 in the research category. It further demonstrated that the combination of printed concrete and glass-based knitted spacer fabrics results in self-supporting wall and ceiling components. Used as skeleton structural elements, these components require considerably less CO_2-intensive concrete while achieving the same load-bearing capacity as conventional solid building elements.

SDGs: 9 11 13

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Collaborative sustainability research in Faculties 1 and 2

caREL – identifying optimal wind and solar sites in the EU to advance the European energy transition

Where are the European Union's most productive sites for harnessing wind and solar energy? Researchers from the Frankfurt UAS have developed a digital tool for optimal land management aimed at maximizing renewable energy use: caREL, the Computer-Aided Renewable Energy Language. This scientific transfer project uses existing geodata, methods, and algorithms to facilitate automated potential analyses. It can also identify areas which the individual member states need to secure or reserve to support the energy transition. This is a necessary requirement for implementing the European Green Deal and the European Union's goal to become independent of Russian fossil fuels by 2030.

The caREL project successfully concluded in December 2022. It produced a wealth of knowledge which continues to enable the planning community to create fully automated potential analyses rapidly and efficiently.

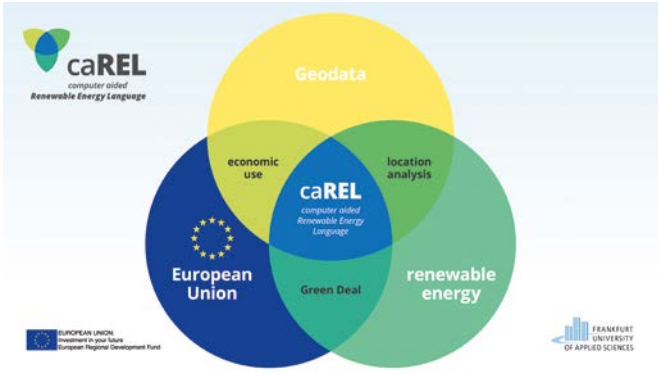
Based on the available data (e.g., Open Data offers), the researchers selected five pilot countries for the initial caREL trial: Estonia, Belgium, Slovenia, Denmark, and Spain. They selected two regions spanning approximately 25 km^2 each, one urban and one rural, in each of these countries where sample calculations had already been carried out.

The caREL transfer project shows how to simplify the cross-border use of European geodata. Focusing on wind and solar energy, caREL aims to make an important contribution to the expansion of renewable energy use across Europe.

It was funded by the state of Hesse within the scope of its Distr@l program, with co-financing from the European Regional Development Fund (ERDF).

Tutorial videos and written guides are available for download on the project website at www.carel-energy.eu. The developed algorithms can be obtained from the site, and there is a dedicated caREL geo-portal in which the existing sample calculations can be viewed.

SDGs: 11 13



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Sustainability research at Faculty 2

Prof. Gabriela Alves Werb holds the chair of Business Information Systems at Faculty 2 of the Frankfurt UAS. For her ongoing Innovation Professorship, she is creating a digital platform to categorize, organize, and evaluate sustainability reports from companies, making them accessible to the public free of charge. Its purpose is to give investors and consumers greater transparency in their purchasing decisions.

Artificial intelligence meets sustainability: innovative ways of filtering ESG metrics

Current ecological, economic, and social challenges have heightened the need to foster and shape a sustainable economy. Environmental, social, and governance metrics, collectively known under the acronym ESG, play an important role in this effort. For instance, investors want to know how companies perform on these metrics when they conduct their risk analyses and make investment decisions. Likewise, many consumers desire an insight into companies' sustainability efforts before purchasing their products or services. This information is also relevant to regulatory authorities, as it enables them to make evidence-based decisions and gage the impact of their measures.

Accessing reliable data on corporate sustainability strategies is not straightforward, however. The publication of ESG metrics has not yet been standardized at a comprehensive scale, which leads to significant variability in corporate reporting habits. Information is often unstructured and difficult to locate across multiple sources. There are annual reports, sustainability reports, investor presentations, websites, press releases, and social media, each of which may present ESG figures in its own format. As a result, it is difficult to automate the identification and extraction of relevant data, many of which are not even available in a machine-readable format.

Professor Werb's research project seeks to address these issues, using publicly available data sources to increase transparency regarding the sustainability performance of companies.

It systematically applies multiple methods, such as computer vision and large language models (LLMs), to sustainability reports in order to extract, process, and convert data from their texts, tables, and graphics into structured ESG metrics. In parallel, a public platform is being developed as a central hub for sustainability reports, ESG metrics, and their evaluations.

More details on the current prototype and further information about the project: www.sustainabilitymonitor.org and www.frankfurt-university.de/en/sustainability-monitor

SDGs: 9 12 13

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Interdisciplinary sustainability research at Faculty 3

In 2023, the Frankfurt UAS launched the Sustainable Finance Research Lab (SuFiRe Lab). It aims to consolidate and intensify interdisciplinary, practice-oriented research collaborations with industry partners in the financial hub of Frankfurt, focusing on sustainable finance.

The project pursues a set of goals in the field of sustainability research, such as investigating the impact of sustainable financial practices and developing quantitative evaluation methods to assess the sustainability performance of businesses and financial products. Data play an important role in the Sustainable Finance Research Lab.

SuFiRe Lab
Sustainable Finance Research Lab

No sustainability without financing

Foundation of the Sustainable Finance Research Lab
Germany alone will need to invest several hundred billion Euros to achieve the agreed climate goals by transforming its economy and infrastructure over the next two decades. New financial instruments and providers have been emerging to fund this immense commitment. At the same time, investors and the public need to learn how to assess sustainability risks reliably.

It requires suitable analyses and the critical evaluation of increasingly complex data. Prof. Gabriela Alves Werb, Ph.D. (Faculty 2), Prof. Dr. Jens Müller-Merbach (Faculty 3), Prof. Dr. Martin Simon (Faculty 2), and Prof. Dr. Christian Thier (Faculty 3) founded the interdisciplinary Sustainable Finance Research Lab (SuFiRe Lab) in 2023 in order to oversee and shape the required processes.

Pooling expertise from various economic disciplines and quantitative fields such as Data Science and AI, the research group works on solutions to key questions: How can financial instruments and markets be made to advance the Green Transition? What data does this require, and what methods ought to be used to analyze them? What are the preferences of investors in the sustainable-finance markets? Which regulatory measures are most effective?

The 2023 summer semester saw the first research seminar of the Sustainable Finance Lab. Dr. Tammo Diemer, Managing Director of the Federal Republic of Germany - Finance Agency, presented scientific findings and surprising background details about the development of green federal bonds.

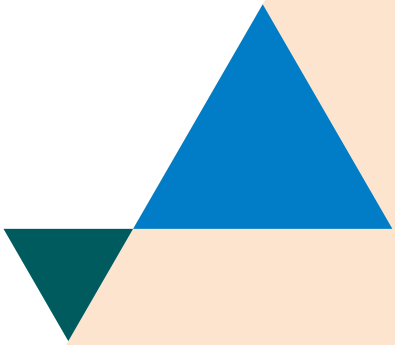
The lab sets itself apart through its participants' extensive professional experience and connections in the finance industry. Working closely with industry partners from Frankfurt's financial sector, it identifies and explores practically relevant research questions. So far, the SuFiRe Lab has initiated several practice-based projects and successfully secured third-party funding. Its key focus is on developing methods to quantify and manage sustainability aspects – a major challenge facing banks, asset managers, and companies alike. The lab is currently ex-

panding its collaboration with the Frankfurt Main Finance e.V. initiative in order to establish a broader network in the financial hub.

Interested students are invited to engage with current research issues in the context of student projects or interdisciplinary theses, which creates a benefit for their future employers as well as the students themselves. Within the Interdisciplinary General Studies program, a seminar on climate change as an existential risk was launched; it has received very positive feedback.

Current research projects,
lecture dates, and courses on offer:
www.frankfurt-university.de/en/sustainable-finance

SDGs: 8 9 12 13



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Sustainability research at Faculty 3

Beyond its close focus on practical application, theory, and interdisciplinarity, Faculty 3 emphasizes entrepreneurial conduct, the sustainable use of natural resources, and fairness and stability at the internal and external level. The result: pioneering sustainability projects.

ReLUT for sustainable logistics

The Research Lab for Urban Transport (ReLUT) addresses cycling infrastructure questions, a topic that will be crucial for achieving the mobility transition. Bicycle logistics is a dynamic field on par with everyday mobility, tourism, and leisure mobility. It could have a significant impact on the growing demand for urban freight transportation in the future. Under the project responsibility of Prof. Dr. Kai-Oliver Schocke, ReLUT works closely with industry partners to develop concepts and business models for emission-free cargo bike deliveries.

Its LieferradDA project, realized in two phases between 2020 and 2022, sought to establish a cargo-bike-based delivery service for the city of Darmstadt. By connecting local retailers with city households, it aimed to reduce emissions generated from transport and logistics activities and simultaneously promote local businesses through home delivery as an alternative to online shopping.

In the first project phase, 42 local retailers participated and two cargo bikes were used for deliveries. In the second phase, this strong network facilitated a study into the components of a decentralized urban logistics system centered around cargo bikes. The researchers explored how micro-depots and multimodal logistics concepts could positively affect the urban economy and ecology by integrating solutions based on the existing public transport network. The study also evaluated which types of cargo bikes were most suitable and assessed the influence of effective tour and route planning techniques using specialized software.

Results from the second phase suggest that certain market conditions still need to be optimized for successful cargo bike logistics. For example, the software tested for last-mile logistics purposes failed to utilize the capacity of the bikes fully. Route planning and implementation still require optimization to maximize their emission-saving potential. The relevant cargo bike models also need to be made more reliable to ensure both economic and ecological feasibility. Once these issues are addressed, established and new companies will be able to opt for cargo bike solutions with confidence. At the same time, urban and municipal administrations will need to be convinced to incorporate micro-depots and other logistics infrastructure into their regional sustainability strategies. This would encourage local businesses and residents to support and benefit from such services.

SDGs: 8 9 11

Contact

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eCARe – redefining distribution and fleet operation processes for electric vehicles

A sea change is afoot in the automotive industry. Due to stricter emissions regulations, an increasing range of vehicles with alternative drivetrains has been coming to market. As sales of electric vehicles (EVs) surge and their production becomes increasingly global, there emerges a real need for optimized logistics which can account for the unique characteristics of these vehicles, be they powered by batteries or fuel cells.

The eCARe project revolves around an integrated technical-processual charging management concept for EV logistics. It was overseen by Prof. Dr. Kai-Oliver Schocke at ReLUT in collaboration with Hochschule RheinMain (lead), Frankenbach Automobil Logistik GmbH, and DB Cargo Logistics GmbH with funding from the Hessian innovation funding program for electromobility (Innovationsförderung Hessen – Förderung der Elektromobilität).

Its goal was to redefine processes in EV distribution and fleet management. Especially the handling and charging management processes need to be reliable enough to ensure optimal vehicle availability during transfer. The project participants identified future potentials for supporting e-mobility and conducted and validated their technical and economic aspects through practical tests.

The EU and German net zero targets have initiated a shift towards non-combustion engine vehicles, which is already visible in registration figures: In 2015, 97% of newly registered vehicles had combustion engines, but by 2021, this figure had dropped to just under 60%, with further reductions expected.

The production and distribution of new vehicles do not always follow a just-in-time model, so some vehicles are stored temporarily before sale. During this time, their battery may discharge. When the charge falls below a certain level, it needs to be recharged. Due to the relatively limited number of EVs, recharging has been spontaneous and uncoordinated thus far.

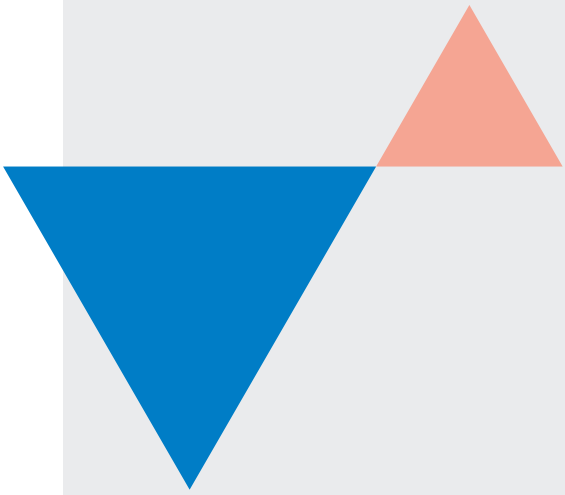
As the number of EVs increases, questions regarding the appropriate charging infrastructure and the coordination of charging processes take center stage.

The project first developed a scenario model and calculator to estimate future charging cycles and their duration based on the electrification rate and battery sizes.

Subsequently, multiple charging stations were installed at the partner's site. With the poor availability of connection capacity found to be a constraint, plans were made to build a photovoltaic system in future. Various charging management concepts were discussed with industry partners, and the relevant processes were tested in the final arrangement. The trial runs produced key metrics, making it possible to measure and assess the effectiveness of the solutions.

These findings may potentially be applicable to other use cases, such as parking garages or fleet operations.

SDGs: 8 9



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Sustainability research at Faculty 4

Sustainability is a core element of our university, and this includes the research conducted at Faculty 4. The environmental, economic, and social dimensions of sustainability inform all research and development projects, so that their outcomes can make meaningful contributions toward addressing critical future challenges.

GesundFDM – modern research requires efficient data management

The project Applied Research Data Management for Health and Care Sciences (GesundFDM), aimed at strengthening Faculty 4's research capabilities in the field of research data management, has secured funding. Its goal is to create structures that make research data management more accessible to all researchers within the faculty. Part of a joint project funded by the EU and supported by the German Federal Ministry of Education and Research (BMBF), and led by Prof. Dr. Ulrike Schulze, the initiative involves five partner universities: Hochschule RheinMain, Darmstadt University of Applied Sciences, University of Health Sciences, Fulda University of Applied Sciences, and the Protestant University of Applied Sciences Rhineland-Westphalia-Lippe.

FDM seeks to ensure that research data are treated as a valuable resource and managed sustainably within the scientific community. To achieve this, these data must be findable, accessible (including across disciplinary boundaries), interoperable, and reusable – in short, FAIR.

Sustainability, then, means that research data must remain available for the long term and independent of the original data producers.

Effective FDM comprises the transparent documentation and description of data (e.g., through metadata) and the methods and processes used to achieve research outcomes. This allows other researchers to verify and reproduce results. Once collected, data can establish the foundation for further discoveries.

Efficient FDM also simplifies the exchange of data and information between researchers and teams, allowing them to collaborate more easily. This encourages knowledge transfer and accelerates the practical application of theoretical insights. For this reason, it is crucial to introduce FDM at an early stage of the research career.

Storing data digitally rather than in physical copies and adopting efficient data management practices conserves resources and reduces the carbon footprint.

Ultimately, well-managed data retain their utility for longer: they prevent data loss and improve findability, effectively eliminating the need to repeat research. The ability rapidly to share comprehensible, reusable data is especially important in health research, where quality of life and well-being depend on accurate scientific findings.

SDGs: 3 9

Contact

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Robert Werth, Network Coordinator
Sebastian Reutzel, Data Steward
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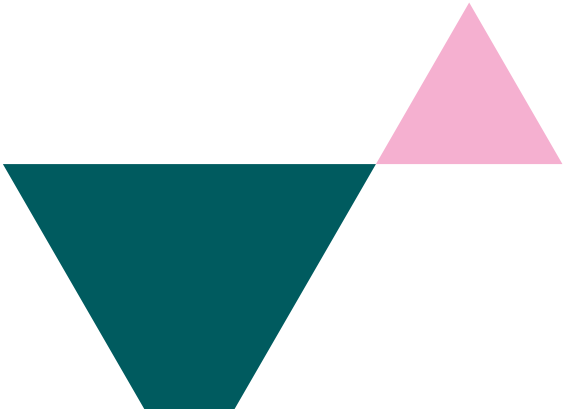

KomSi – how social enterprises and non-profits help build resilience

The Competence Center for Social Intervention Research (KomSi) works on the theoretical and methodological development of social work research, aiming to increase its visibility in the public sphere. It addresses social challenges such as poverty, homelessness, migration, violence, and radicalization, exploring how social work can influence these issues.

Under the leadership of Prof. Dr. Nicole Göler von Ravensburg, the project focuses on fostering resilient neighborhoods in African megacities through the promotion of social enterprises. This partnership project, supported by the German Ministry for Economic Cooperation and Development (BMZ), runs from 2021 to 2024.

Many municipal governments in megacities are currently developing resilience strategies, with public participation and funding often seen as potential solutions, though they can be challenging to implement. The research project is carried out in collaboration with the University of Münster, Bauhaus University Weimar, and the University of the Witwatersrand in Johannesburg, South Africa. With a pragmatic approach, it aims to help local governments manage their partnerships with social enterprises (SE) and non-profit organizations (NPO) and effectively boost resilience in densely populated areas while avoiding personal gain, corruption, and other negative influences. While the study is still ongoing, preliminary findings highlight some of the strategies used by SEs and NPOs with economically disadvantaged populations in Soweto when confronted with natural, economic, political or social crises. Their success does not appear to depend heavily on their sector or business model; rather, it seems fueled by flexible resource acquisition strategies and the ability to maintain strong relationships with beneficiaries, volunteers, and the surrounding community. The final results are expected to outline key features of resilience-promoting co-creation arrangements at the local level.

They will provide important insights into how the public sector in Johannesburg and other (African) megacities can foster local self-help relationships that build and sustain the social, ecological, and economic resilience of disadvantaged urban settlements. As a pioneering study carried out in Johannesburg, its findings will also guide future academics in addressing important topics related to the effectiveness of local public sector work.

SDGs: 10 16 17

Contact

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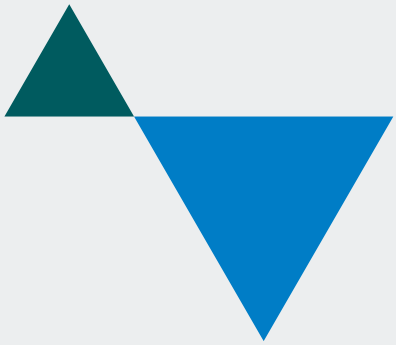
Innovation professorships at Frankfurt UAS

More room for sustainability research and development

Within the scope of its PROFfm initiative, the Frankfurt UAS has established eleven innovation professorships focused on strategically important university projects, including sustainability. These professorships address topics such as lightweight construction, affordable housing, resource-efficient urban development, and AI-based financial solutions.



Prof. Dr.-Ing. Petra Rucker-Gramm, Faculty 1

Sustainable Concretes for Lightweight Constructions @FRA UAS

Why is concrete the most widely used building material worldwide? It owes its popularity to its impressive load-bearing capabilities, which, combined with steel reinforcement, facilitate the construction of large-span structures. The material also boasts relatively good durability and resistance to external factors such as moisture, pollutants, or mechanical stress. Additionally, concrete offers advantages in fire protection, soundproofing, and thermal insulation.

However, concrete construction has downsides, too – namely, the significant CO_2 emissions it generates. About 8 % of global CO_2 emissions stem from the cement used in concrete.

Concrete will remain essential for our built environment: there simply is no alternative for many applications. But it is crucial to focus on resource efficiency, i.e., material efficiency, resource conservation, recyclability, and life-cycle optimization.

These are the aspects addressed by the projects of the Laboratory for Materials, Physics and Maintenance. Its researchers are, for instance, working on a type of concrete in which part of the cement is replaced by alternative raw materials, such as calcined clay or secondary raw materials, while optimizing performance for specific applications.

Efficient construction also requires that structures and components are optimized for their function. Concrete should only be used where its load-bearing strength is needed. 3D printing achieves this with minimal labor and preparation. Thanks to funding from the Herr Foundation and an EU-EFRE project, the Frankfurt UAS has purchased one small and one medium-sized concrete printer. New concrete printing recipes with a focus on resource efficiency are being developed under the innovation professorship ‘Sustainable Concretes for Lightweight Constructions’. Simultaneously, the development of

functional, optimized constructions focusing on the entire lifecycle is the subject of a collaboration with the RESULT (Research Lab for Sustainable Lightweight Building Technologies) research group: Prof. Carl, Prof. Horstmann, Prof. Lüling, Prof. Rucker-Gramm.

SDG: 9 11 12 13

Contact

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Prof. Dr.-Ing. Maren Harnack, Faculty 1

Affordable Housing and Resource-Saving Urban Development

Prof. Dr.-Ing. Maren Harnack uses her innovation professorship for intensified research into affordable housing and resource-saving urban development. Her project aims to develop new urban concepts and trial them in the Frankfurt Rhine-Main metropolitan area.

Housing is scarce and expensive, especially in prosperous regions. The German Federal Government aims to build 400,000 new homes every year – but the right homes must be built in the right places. In the Frankfurt Rhine-Main metropolitan area, any new housing project is virtually guaranteed to face irresolvable conflicts. New construction projects in urban areas put additional stress on infrastructure that is already strained, while the loss of even small green spaces worsens the heat island effect. Residential developments on greenfield sites compete with air corridors, agricultural production, and the recreational needs of urban residents. Additionally, there are justified concerns about rising rents and gentrification, which spark resistance to new developments from those most affected by the housing shortage.

While the housing debate rarely addresses these conflicts, they often surface at specific planning stages and sometimes even halt advanced projects, such as the Günthersburghöfe development. Rather than just discussing figures, it is time to confront these conflicts – otherwise, there will be no way forward.

SDGs: 9 11 12

Contact

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Prof. Dr. Martin Simon, Faculty 2

AI-Based Solutions in Finance

Climate risk management: modeling, quantifying uncertainty, and the role of computer science

The challenges of climate change are undeniable, and pressure to develop effective strategies is mounting. Regulators worldwide have identified the financial industry as a key driver of change due to its unique ability to direct investments towards companies whose actions align with the Paris Agreement's climate goals. But what are appropriate metrics to measure this alignment?

Within the scope of his innovation professorship, Prof. Simon and his team are working closely with industry partners to develop such metrics for the financial sector. Their work is based on the X-Degree Compatibility Model developed by right°, a company based in Frankfurt. It enables the assessment of a company's emissions relative to its value creation and sector-specific decarbonization efforts by calculating a temperature difference in Celsius in relation to the 1.5°C target of the Paris Agreement.

Numerous financial institutions and companies in the real economy already use this model. As the project is the very first attempt at a long-term experiment carried out in a highly complex physical system, the modeling and quantification of inherent uncertainties is a key focus of Prof. Simon's research. In other words, the risks being modelled are only just emerging. Additional uncertainties arise from missing or poor-quality input data, such as emission data. The innovation project addresses the challenge of computing the X-Degree Compatibility of companies or portfolios using a complex physical climate model, which is often too computationally expensive for practical industry use due to the many thousands of possible parameters and future scenarios involved. By using neural networks, it is possible to accelerate the calculations and reduce expenses.

The training of these neural networks is carried out using a computing cluster currently being set up at the Frankfurt UAS, supported by the BMBF's KI@FH-Nachwuchs initiative.

This project aims to provide decision-makers in financial institutions with an efficient tool for scientifically sound climate risk management – an important contribution to overcoming climate change.

SDG: 9

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Further education and transfer with an eye on the future

We share the knowledge gained from our research with society in order to consolidate and further it for the benefit of the sustainability transformation.

Our various collaboration and communication formats are available to municipalities, businesses, and organizations wishing to benefit from our sustainability expertise.

Other aspects of sustainability, such as the personal development of employees, corporate resource management, and digitalization, are also integral parts of all our further-education program.

KompetenzCampus

Digitalization, skills shortages, and socio-political challenges are constantly changing our work and life environments. The KompetenzCampus is committed to meeting these demands and empowering participants to embrace change as an opportunity and actively shape it.

Qualifications for sustainable transformation: lifelong learning in changing times

“Nothing is as constant as change” – the famous quote by the Greek philosopher Heraclit of Ephesus (535–475 BC) is more relevant than ever. Our society is in continuous flux. The pandemic, climate change, the war in Ukraine, migration into Europe, population aging, and labor shortages in Germany are just a few of the challenges of our time.

What was once considered stable is now far from certain. But such challenges bring opportunities as well as risks. Taking a positive stance towards change and developing the skills to navigate it sustainably is the mission at the heart of our KompetenzCampus, the division for further education and lifelong learning at Frankfurt University of Applied Sciences.

Faced with a plethora of complex challenges, a crucial question emerges: What qualifications are needed to meet these expectations and develop sustainable solutions?

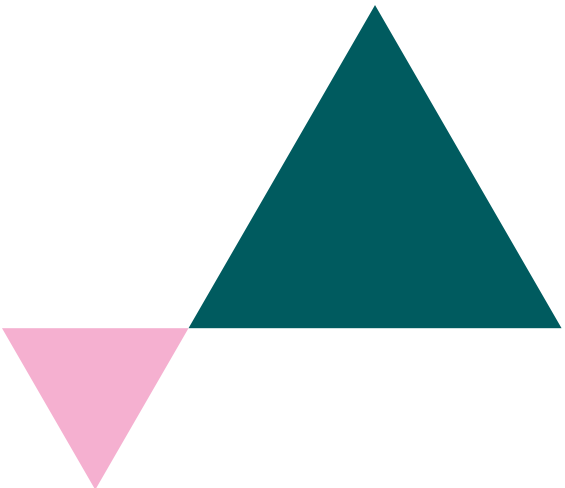
Today’s developments require individuals not only to understand the intricate connections between environmental, social, and economic factors but also to adapt to changes flexibly and find innovative solutions. Relevant skills and qualifications range from sustainability, environmental protection, and business ethics to change management, interdisciplinary collaboration, and creative problem-solving.

The KompetenzCampus operates a large catalog of further-education programs which qualify professionals in these areas. From practice-oriented master’s programs to targeted certificate courses and seminars, they equip their participants to tackle modern challenges and develop sustainable solutions. As well as conveying technical skills, they also encourage continuous personal development – a key factor in actively and sustainably shaping the transformation.

A new sustainability certification program is already in the works, with all four faculties collaborating on its development. Its content will be overseen by the four sustainability professors.

All programs will convey expert knowledge on sustainability topics, such as waste management, urban development, ecological management, and sustainable corporate governance. Broader competencies in the areas of sustainable transformation, change management, and cultural shifts will also play an important role.

More information:
www.kompetenzcampus.de/en/



Existing offers with a focus on sustainability:

Further education	Qualification	Status Quo
Urban Agglomerations	Master	Since the 2008 / 2009 winter semester
Sustainable Business Development	MBA	Since the 2023 / 2024 winter semester
Sustainable Urban Development	Certificate of Advanced Studies (CAS)	Since the 2023 / 2024 winter semester
Urban Development and Sustainable Cities	Certificate of Advanced Studies (CAS)	Since the 2023 / 2024 winter semester
Urban Infrastructure	Certificate of Advanced Studies (CAS)	Since the 2023 / 2024 winter semester
Business Development Manager	Certificate of Advanced Studies (CAS)	Since the 2023/2024 winter semester
Systemic Business Manager	Certificate of Advances Studies (CAS)	From the 2024 / 2025 winter semester
Sustainable Cities, Urban Development and Infrastructure	Diploma of Advanced Studies (DAS)	Since the 2023 / 2024 winter semester

SDGs: 4 8 9 11 12 13

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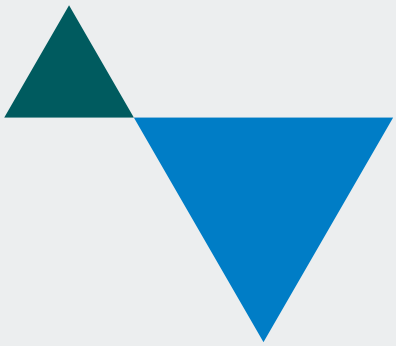
VisibleN 2022 / 2023

Every year, the university's Sustainability Office supports public-facing (and student-led) pilot schemes for sustainability, making the Frankfurt UAS's efforts in this field visible and accessible both internally and externally.



Public-facing pilot schemes in 2022

The **EcoDesign** project, led by **Prof. Dr. Ekkehard Schiefer** and students from Faculty 2, analyzed the entire lifecycle of an everyday object, using a toaster as a case study. From its production and daily usage to the eventual recycling and disposal process, the group sought to optimize the toaster's design, focusing on economic and technical considerations as well as environmental aspects. The project revolved around anticipating the processes likely to occur with and within a product and assessing their impact across each phase of the product's life cycle. This makes it possible to select, design, and improve these processes with environmental and resource justice in mind.

For the **GreenKartCampus** project, a group led by **Prof. Dr. Jens Brauneck** mapped sealed areas on the campus to enhance campus greenery. Its objective was to document the development of the campus and increase its biodiversity. The group mapped sealed, unsealed, and green spaces in order to capture and document the sealing/unsealing and greening processes at play. This mapping technique was based on digital orthophotos (DOPs) – distortion-free, georeferenced aerial photographs. True to scale, their ground resolution allowed for accurate cartography.

Prof. Dr. Kai-Oliver Schocke led the project **LieferradFFM**, which built on the research project LieferradDA. The coronavirus pandemic made delivery networks resilient, which allows them to handle large volumes of deliveries. While online retailers thrived during the lockdowns, non-essential city and town retailers were forced to close to the public, offering only rudimentary, self-organized delivery services. In Darmstadt, an experimental bicycle delivery service was developed from May to December 2020 to respond to this issue. It integrated local retailers and current cargo bike solutions accompanied by empirical research into acceptance among retailers, couriers, and customers. Dubbed VisibleN, the project sought to assess the transferability of the Darmstadt concept to Frankfurt's Nordend district, develop a communication and marketing plan, and identify necessary regional adjustments with the help of students.

The **Wasteland** project carried out during the Museumsuferfest festival in the summer of 2022 transformed bulky waste into valuable materials for musical instruments. Led by **Ruth Schlögl**, student assistants guided children's crafting activities while talking to them and their parents about sustainability. The participants also took part in a sustainability quiz, with everyone who knew the right answer receiving a small prize as an "incentive for sustainability."

SDGs: 11 12 13

LieferradDA © Hochschule Darmstadt

Public-facing sustainability pilot schemes in 2023

Faculty 1 is currently conducting a student-led project titled **Campus-Mapping** to establish a foundation for the future design and greening of the Frankfurt UAS campus. Using a variety of techniques – such as mapping, recording user behaviors, tracking movement networks, photography and drawings, tree vitality measurements, and thermal imaging – the students will map, document, and visualize their campus. The project is coordinated and led by **Prof. Dr.-Ing. Jan Dieterle** and **Ruth Schlögl** in collaboration with tutors from the B.Eng. in Urban Planning. Its objective is to document the current state of the campus from various perspectives, providing a broad basis for campus design planning and supporting the coordination of different ideas, interests, and needs. The resulting maps, images, and data will be used in future campus design processes.

For their **Green Coding @ Frankfurt UAS** project, **Prof. Dr. Jörg Schäfer** and **Prof. Dr. Martin Simon** are developing a framework allowing them to measure the CO_2 footprint of machine learning training processes. The results will be rolled out at the university's new computing cluster, which is currently under construction with funding from the Federal Ministry of Education and Research (BMBF) as part of the KI@FH-Nachwuchs initiative. Not only will such a framework improve the university's sustainability transparency, it will also grant valuable insights which can then inform courses on green coding. Beyond just teaching technical skills, the project also aims to convey an in-depth understanding of the ethical, social and ecological implications of AI. Training current algorithms requires enormous amounts of computing power, which comes with a significant and rapidly growing carbon footprint. The Frankfurt University of Applied Sciences is carrying out various research endeavors aimed at minimizing this impact.

For the **Materialstatt** project led by **Ruth Schlögl, Prof. Dr. Natalie Heger**, and **Patrik Palmu** (head of the model workshop), student assistants from the teaching unit architecture are working on a material storage shelf for collecting and reusing materials. The initiative promotes sustainability, responsible resource use, and material diversity in model making at the Frankfurt UAS. Whenever old models are no longer needed or material scraps accumulate during model making – in short, when any so-called "waste" is created anywhere at the university – the shelf can save these materials from being discarded: They are simply cut into useful shapes, sorted, and made available for reuse. The student assistants were in charge of planning and building the shelf itself and are now responsible for maintaining and organizing the materials and contents. They also advertise the shelf around the university, encouraging faculty, staff, and students to use resources more consciously.

The sustainable DesignBuild project **Welcome Harbour for Culture and Integration** under **Prof. Dipl.-Ing. Tatjana Vautz** creates a space and community for refugees. Students played a key role in developing and implementing this initiative, which has produced a 1:1 scale structure providing flexible spaces for social interaction. Its collaboratively designed, modular elements are made from recyclable and renewable materials. They can be reproduced, rearranged, and flexibly used for learning, working, playing, or relaxing. The six elements have become a popular study space on the mezzanine of Building 1. Visitors of the Festival of Democracy held at the Frankfurt UAS on May 23, 2023, had the opportunity to contribute to the "Welcome Harbour" during a textile workshop by sewing cushions and small fabric fish from recycled campus flags. These will accompany the installation to future destinations, such as praxistage.HOLZ – an event where students will get a chance to explore the recyclable structure, and social organizations will learn about the flexible application of its modules.

On November 12 and 13, 2023, an online symposium on **decolonizing relationships: eco-social transformation in social and educational practice** took place. The event sought to introduce new voices, approaches, and methods at the intersection of eco-social transformation and diversity to the national professional audiences. Spearheaded by **Prof. Dr. Yari Or** and **Prof. Dr. Chaitali Das**, among others, it delivered lectures and workshops focusing on various aspects of diversity in eco-social transformation: anti-racist and diversity-sensitive projects, ecological justice, and diversity-aware methods and practices of eco-social transformation. It was attended by around 180 participants who represented diverse communities across Germany. They all experienced the event as an important platform for exchange, networking, and working together toward a just and inclusive eco-social transformation. The symposium concluded with a presentation of the book "Transformation dekolonisieren"

(“decolonizing transformation”), a guide for professionals featuring examples, case studies, and reflections.

SDGs: 9 10 11 12 16

Materialstatt © Frankfurt UAS

Chapter 4: University operations and campus development

> We, the Frankfurt UAS, see ourselves as a living laboratory and a model project for sustainable building, campus and green space planning and transportation. All our construction projects are planned, bid, and implemented with the goal of carbon neutrality in mind.
>
> From the Sustainability Strategy


FRANKFURT
UNIVERSITY
OF APPLIED SCIENCES

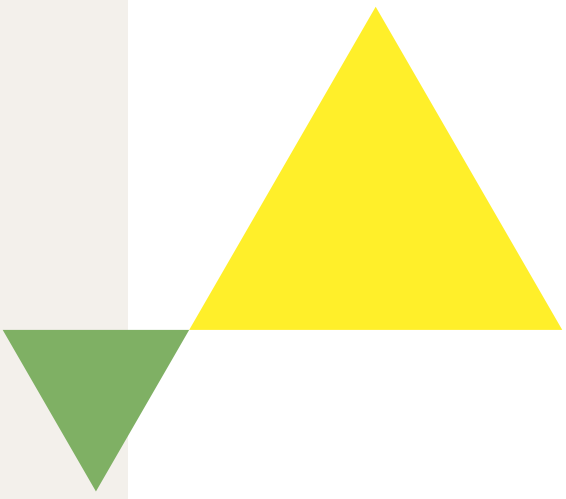
→ Key figures on operations

Towards a sustainable setting

Sustainable university operations should entail more than just carbon neutrality. We must take a holistic view of all resources and processes used at our university and on our campus, as operations are a major driver of ecological sustainability. This chapter provides an insight into our operational figures, ongoing projects, and future plans. While data collection is already taking place across many crucial areas, others are yet to be addressed. We want to increase transparency in our campus operations and identify necessary measures to reduce our resource consumption, promote a circular economy, and ensure fair procurement practices. Other important aspects related to campus development include maintaining or improving the urban climate and biodiversity.

	2021*	2022
Net area	94,533 m²	97,881 m²
CO_2 emissions **	1,481 t	1,305 t
Electricity	3,603 MWh	4,119 MWh
District heating	5,952 MWh	5,074 MWh
Natural gas	177 MWh	112 MWh
Water	15,327 m³	18,287 m³
Air travel:	137,400 km	1,407,796 km
Short distances (up to 463 km):	2,999 km	5,004 km
Medium distances (up to 3,700 km):	69,091 km	988,918 km
Long distances:	65,310 km	413,874 km

* Due to billing and data collection delays, the 2021 and 2022 figures are presented.
** Calculations by HIS-Institut für Hochschulentwicklung e. V.



Reducing CO_2 emissions from campus operations

The Frankfurt UAS has committed to reducing the greenhouse gas and CO_2 emissions of the areas under its responsibility under the Hessian Higher Education Pact 2021–2025. Our overarching goal, as anchored in our sustainability strategy, is to achieve climate neutrality with minimal reliance on carbon offsets by 2023.

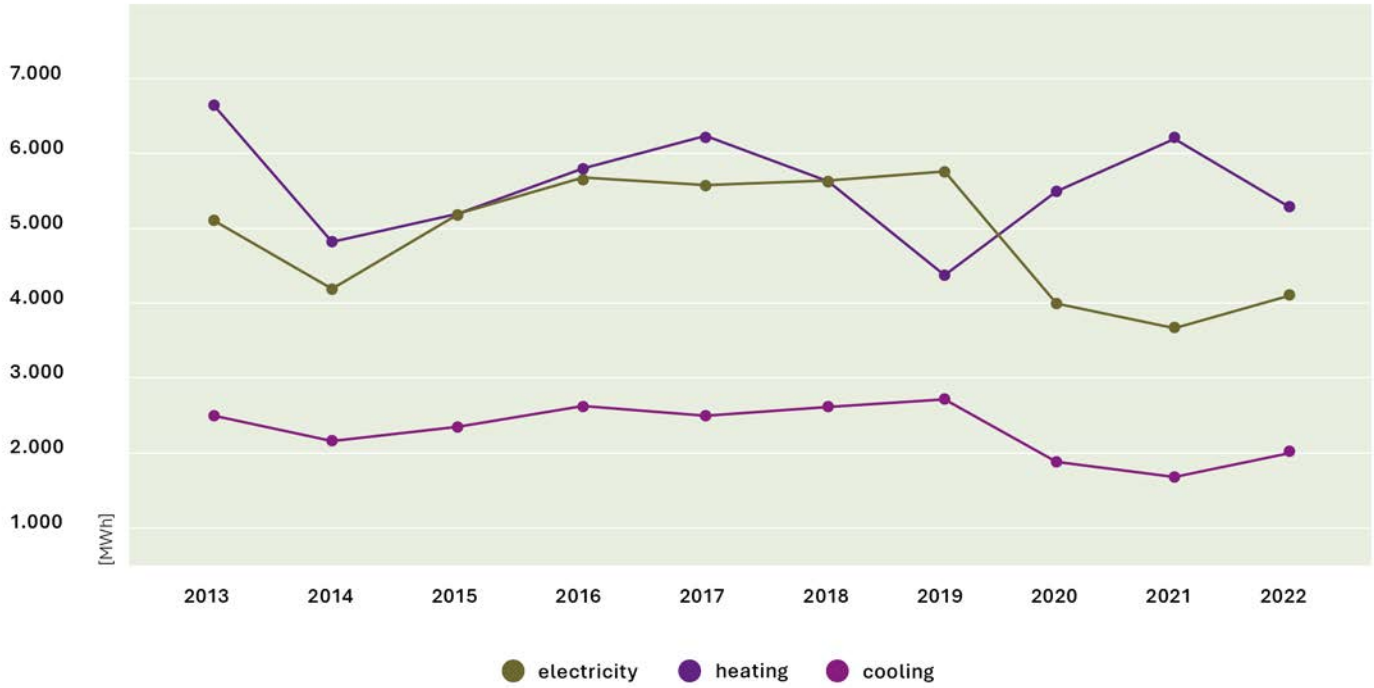
Since 2010, the Frankfurt UAS has more than halved its CO_2 emissions as a result of its decision to source green electricity and transition to district heating. In 2022, we recorded 1,305 tons of CO_2 emissions.

Considering the university large student body of 15,300 students, along with 859 full-time equivalent employees (as of 2022), the Frankfurt UAS has relatively low carbon emissions compared to the 14 state universities in Hesse. Nonetheless, the reductions achieved thus far through green electricity and district heating are not enough for climate neutrality. We need to save more energy by implementing organizational and behavioral changes and energy-efficient renovations to reduce both operational costs and CO_2 emissions significantly.

CO_2 emissions (Frankfurt UAS*)

*Data source: Person, R.-D. & Wöhning, C.: CO_2-Bilanz 2018 der Hessischen Hochschulen. Einsatz von Energie und Kennzahlen. Projektbericht 2020 / CO_2-Bilanz 2020 der Hessischen Hochschulen. Anlagen / CO_2-Bilanz 2022 der Hessischen Hochschulen. Anlagen (Vorabdaten). HIS-Institut für Hochschulentwicklung e.V.

Energy use (Frankfurt UAS*)



* Data source: Person, R.-D. & Wöhning, C.: CO_2-Bilanz 2018 der Hessischen Hochschulen. Einsatz von Energie und Kennzahlen. Projektbericht 2020 / CO_2-Bilanz 2020 der Hessischen Hochschulen. Anlagen / CO_2-Bilanz 2022 der Hessischen Hochschulen. Anlagen (Vorabdaten). HIS-Institut für Hochschulentwicklung e.V.

A working group for a carbon neutral university (AG CO_2-neutrale Hochschule) was established in 2021 to achieve this. It consists of representatives of the Construction Office, Facility Management, Faculty 1: Architecture - Civil Engineering - Geomatics, and the Sustainability Office. The group has planned a range of measures to reduce CO_2 emissions, such as upgrading the lighting in Building 4 to LED and installing photovoltaic systems on the roof of Building 2 (funding provided by the Hessian CO_2 Reduction and Energy Efficiency Program, COME for each of these measures). It also intends to establish monitoring infrastructure and an energy control system.

A task force on “energy”, consisting of representatives from Facility Management, Controlling, and the Sustainability Office, was established in November 2022 under the leadership of managing Chancellor Prof. Dr. Christiane Saure. Its purpose is the advancement of measures to reduce energy consumption and to monitor their implementation in response to the energy crisis. The following behavioral and organizational measures have been implemented thus far:

→ Turning off heating in hallways and less frequently used rooms,

→ Turning off the lighting on the facade of Building 9,

→ Reducing the temperature in offices to 19 °C,

→ Adjusting the heating settings,

→ Distributing energy-saving tips among staff (“Give me five” initiative)

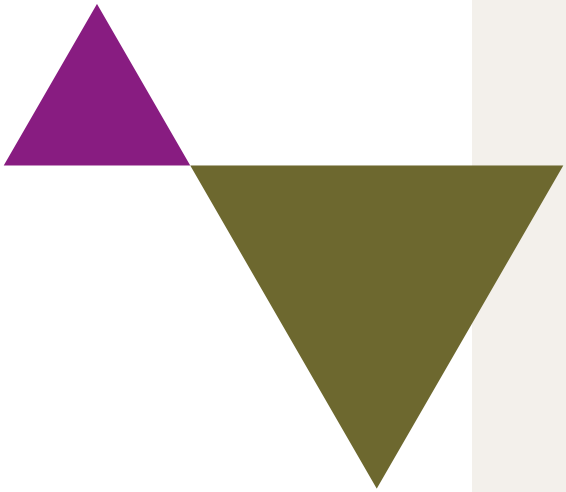
→ Closing the university over the year-end holidays.

→ Some of these measures, such as the call for staff to save energy and the winter closure, were repeated during the winter of 2023 / 2024.

The LED lighting upgrade in Building 4 is complete and has resulted in a 66% annual electricity savings compared to the previous lighting system. Applications for photovoltaic installations on Buildings 1, 4, and 10 were submitted to the State of Hesse, and approval has been granted. Further grants from the program for photovoltaic expansion and energy optimization of building equipment (PV-TGA) have been awarded to cover the purchase of smart thermostats, replace the ventilation system in Building 4, and install LED lighting in Building 2. They will be distributed over several years to facilitate a gradual renovation, with the university also contributing its own funding.

To achieve our goal of climate neutrality by 2030, we must develop a clear CO_2 roadmap which outlines our climate protection plans through 2030 and tracks our progress through effective monitoring.

SDGs: 7 13



Circular economy and waste management

Waste in 2023*	• Municipal waste: approximately 1,500 m^3 • Packaging: 10.22 t • Paper: 26.37 t • Bulky waste: 250 m^3 • Hazardous materials: 100 kg • Construction debris: 15 m^3

*Start of systematic recording

Waste management is an important lever for universities wishing to operate sustainably and contribute to a circular economy. Some parts of the campus already have waste separation facilities, where paper, cardboard, and mixed packaging can be disposed of in designated containers. The university aims to extend this capability to offices, classrooms, and hallways so that staff and students can consistently separate waste. Collection points for batteries, rechargeable batteries, and electrical devices are available. Other waste – such as municipal waste, bulky waste, hazardous materials, and construction debris – is disposed of properly and in an environmentally friendly manner.

Since 2023 the Frankfurt UAS receives a sustainability certificate from the Remondis Group, Germany's largest recycling, services, and water management provider. This certificate lists the volumes of mixed packaging (excluding paper, cardboard, and glass) and paper/cardboard disposed of and provides an overview of the primary raw materials, energy, and greenhouse gas emissions saved through waste disposal and recycling. In the 2023 calendar year, the university achieved savings equivalent to 2.1 tons of fossil oil-equivalent raw materials, 4.1 tons of copper-equivalent metals, 48.1 cubic meters of wood-equivalent biogenic materials, 164.2 MWh of energy (saved or generated), and 2.8 tons of CO_2-equivalent emissions.

As waste data was not systematically collected in previous years, no comparison with earlier figures is possible. In future, the university's waste management efforts will be made more visible, and a monitoring and dashboard system will be implemented to track their progress.

SDG: 12

Sustainable and environmentally friendly procurement

In our sustainability strategy, we have declared that all procurement and commissioning decisions will be made from a sustainability perspective to avoid financially motivated compromises. As a matter of principle, the Frankfurt UAS only enters into cooperative arrangements with businesses and organizations that are already committed to sustainability – subject to verification wherever possible. As part of our Fairtrade University initiative, we serve fair-trade products, such as coffee and chocolate, at events and meetings.

To conserve resources, we've centralized services such as printing, reducing the number of individual office printers. Used IT equipment and old furniture are offered to university members for personal reuse.

Paper consumption:	
2022	833,750 sheets
2023	829,500 sheets

Under our procurement guidelines, the university must use recycled products to meet its paper needs, with wood-free white paper allowed only for exceptional purposes, such as certificates, diplomas, and business cards. Overall, there has been a slight decrease in our paper consumption from 2022 to 2023, a trend supported by remote work and increasing digitalization.

At the end of 2023, the university renewed its cleaning contract, and sustainability was a key criterion in the selection process.

SDG: 12

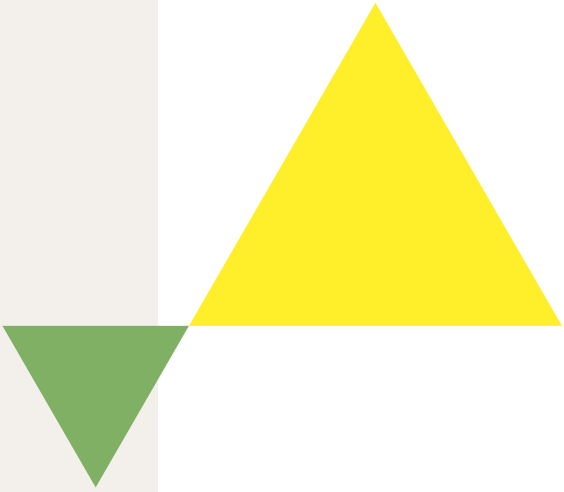
Making our campus greener

Our students, employees, and professors have long asked for a greener campus. Since 2021, a working group consisting of members of the Presidential Board, Faculty 1: Architecture - Civil Engineering - Geomatics, the Sustainability Office, the Construction Office, and Facility Management has been studying open-space planning. The group aims gradually to unseal and sustainably green the campus as part of a larger concept, which will lead to a higher quality of stay, improve the urban climate, and boost biodiversity.

Spearheaded by the Sustainability Office, a feasibility study for various potential designs for an open-space project was commissioned in 2022. It proposed that the areas to be unsealed should be given organic shapes to cater to the different movement and walking directions on campus while allowing for island-like area arrangements. The resulting cells of variable sizes can be used individually, for example, for lawns, seating areas, or raised beds. Their implementation can be carried out in phases, responding to different needs while considering future campus construction measures. In the summer of 2023, the working group discussed the concept with a wider group of employees who had already planned their own projects or submitted requests, aiming to identify additional requirements. This revealed that accessibility would need to be considered in more ways (for example, by installing a clear signage system). Event spaces and quiet areas would be just as important as access roads, constructed in accordance with fire protection regulations.

To find a partner who would oversee the project and carry out the planning work, a steering group consisting of Prof. Dipl.-Ing. Jean Heemskerk, Prof. Dr.-Ing. Jan Dieterle (Dean and Sustainability Professor at Faculty 1), and Marina Ringwald (Sustainability Office) obtained quotes from various providers. This step was completed by the end of 2023. Preparations for the awarding process and the tenders for the planning phase are scheduled for the spring of 2024.

SDGs: 11 13



Biodiversity on campus

In an effort to increase biodiversity on our campus, three beehives were placed on the green roof of Building 4 in June 2021. Wildflowers are being sown on parts of the roof and around campus to create a habitat for wild insects. The idea was submitted and awarded through the Frankfurt UAS's suggestion scheme. Bettina Belz and Thomas Jäschke, both hobby beekeepers, are looking after the university hives.

The Frankfurt UAS support association (Förderverein der Frankfurt UAS e. V.) has supported the project from the start, funding the purchase of beehives, smokers, and beekeeping suits. To ensure its continuation, the Sustainability Office has launched a bee sponsorship program for university members and external parties, who may adopt bees for an annual contribution of €25. Sponsorships are also available as gifts.

More than 20 kilograms of honey were harvested in the summers of 2022 and 2023. It is a deeply flavorful quality honey with a high linden blossom content, which we gift to bee sponsors, honored guests, and university supporters.

Many thanks to all bee sponsors and the university support association for their continued assistance!
As well as looking after the beehives, we will keep expanding biodiversity on campus.

SDG: 11

Fairtrade University status

The Frankfurt UAS actively takes responsibility for its members and wider society. Nearly one year after the release of the sustainability strategy on January 27, 2022, we earned the title of Fairtrade University – as the first university in Hesse to do so. By winning this designation, the Frankfurt UAS has achieved one of the goals outlined in its sustainability strategy.

Five criteria must be met for the title of Fairtrade University:

1. There must be a resolution from the university's governing bodies and the student body to participate in the campaign.
2. There must be a steering group to coordinate activities on campus.
3. At least two Fairtrade products must be offered at official university events and during meetings of the central university's governing bodies and the student body.
4. Fairtrade products must be available in campus shops, cafés, and cafeterias.
5. At least two events related to Fairtrade must be held on campus every semester.

Fairtrade events and activities

The Sustainability Office and CampusKultur, among others, regularly organize events and initiatives relating to fair trading practices in order to raise awareness of the topic among the university community. Larger initiatives took place alongside smaller events. For the Sweet Revolution campaign on St. Nicholas Day 2022 and the AStA Christmas Market, CampusKultur (which oversees the university's cultural events) hosted an information stand on fair-traded cocoa and chocolate – of course, visitors had the opportunity to taste and sample a range of delicious products. The Festival of Democracy on May 23, 2023, featured an open creative workshop: festival-goers got to design a Fairtrade cotton bag with a personal statement for democracy, Europe, and human rights.

We work closely with students and other university members, and external guests are also invited. In collaboration with the City of Frankfurt's Fairtrade Coordination Office, we organized a free campus Fairtrade breakfast for all university members and guests in the spring of 2022. As well as a breakfast buffet, the event included an exhibition about Fairtrade, informational materials, and a discussion between Vice President Prof. Dr. Susanne Rägle, City Treasurer Dr. Bastian Bergerhoff, students, and guests.

Encouraged by the overwhelmingly positive feedback, the event management team repeated the Fairtrade breakfast in 2023. It has since begun to support first-year students' breakfast events with a selection of fair-traded products. At the freshers' info market, we provided information about the Fairtrade University campaign and offered small prizes during a Fairtrade memory game to ensure that the new first-year students learned about our work.

Cafeteria, cafés and catering

Our cafeteria and student-run cafés are also doing their part by offering fair-traded sugar and coffee among other products. Fair-traded coffee, tea, sugar, small chocolate bars, and fruit can be easily provided for meetings and other events. In doing so, we demonstrate our commitment to global justice – another criterion for renewing our certification in 2024.

Contact

Nadine Näther
Marketing / CampusKultur
Kirsten Moriggl-Neynaber
Sustainability Office
nachhaltigkeit@stn.fra-uas.de

Sustainable and fair trade on campus

Our steering group is open to all students and staff who wish to help organize and run events and activities related to Fairtrade and sustainability. We look forward to working together as a university community to promote sustainable and fair trade on campus and in society.

Learn more about the Frankfurt UAS as a Fairtrade University:
www.frankfurt-university.de/en/campuskultur
www.frankfurt-university.de/campuskultur

SDG: 12

Expanding sustainable cafeteria dining

Our “esswerk” cafeteria is run by Studierendenwerk Frankfurt, so responsibility does not lie with the university. We are pleased that Studierendenwerk has chosen to contribute to the Fairtrade University initiative as a partner, expanding its sustainable catering for our students and staff while becoming more sustainable as an organization.

As of May 2023, all main dishes are labeled with an environmental score which covers categories such as carbon emissions, water consumption, rainforest impact, and animal welfare. Dishes with particularly low CO_2 emissions are branded “climate plate.”

To minimize food waste, an AI-driven forecasting system helps plan food quantities and ensure that the right amounts are prepared. Under the new “Restlos Glücklich” program, unsold meals are discounted 15 minutes before closing. Reusable lids for coffee-to-go cups and deposit bowls have been introduced to reduce waste, with disposable packaging costing extra.

For more information, see:
www.swffm.de/studierendenwerk/nachhaltigkeit

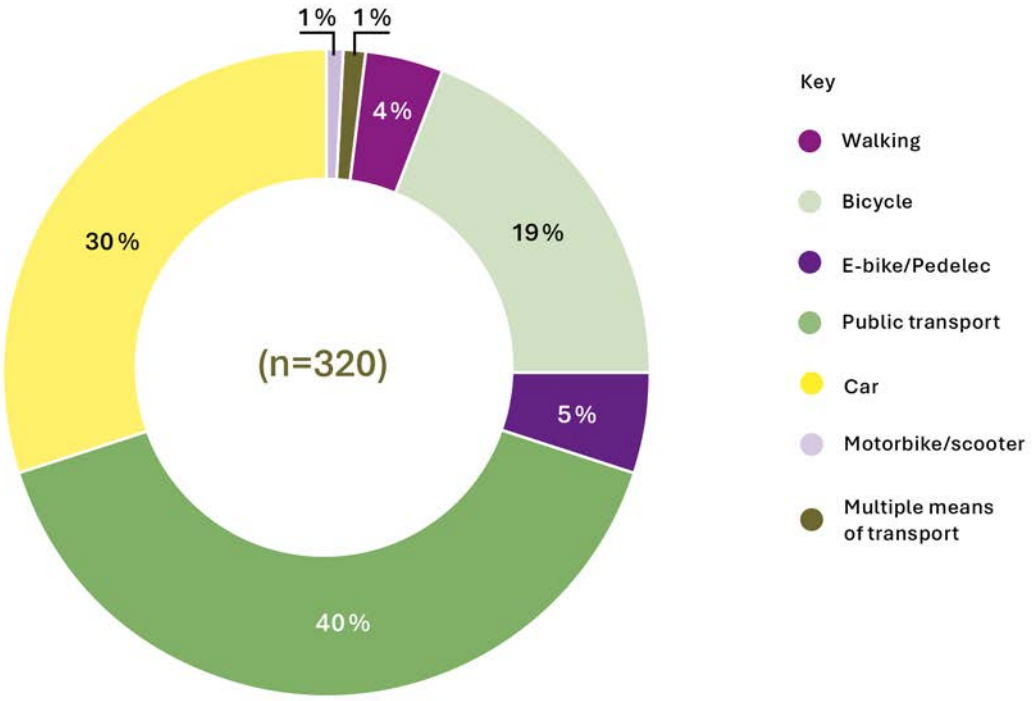
Mobility at the Frankfurt UAS

Staff mobility survey

The Frankfurt UAS regularly conducts a mobility survey among its staff. Following the initial surveys in 2017 and 2018, another such study was carried out in 2023 with 320 participants. The questionnaire is intended to provide insights into staff mobility habits by asking questions about their commute: How do our employees get to work, and how happy are they with the existing transport options?

The results revealed that most respondents take public transport (40 %) or commute by car (30 %). Another 19 % cycle to work.

Which means of transport do you primarily use to get to the Frankfurt UAS?



Primary means of transport, 2023 (n=320) (participant's responses)

Contact

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The 2018 survey revealed similar results, with the majority of respondents using public transport (54 %) for their commute, followed by cars (23 %) and bicycles (16 %). While public transportation usage decreased in favor of car use, bicycle use slightly increased.

A section survey was dedicated to satisfaction among cyclists and public-transport users, showing that 74% of cyclists were happy with their commute. In comparison, only around 65% of public-transport commuters reported satisfaction.

This year's survey newly examined mobility habits in the context of the COVID-19 pandemic. The societal changes of the post-pandemic period have had a clear impact on transportation choices: nearly one third (31 %) of respondents reported that their commuting habits had changed, with public transportation falling out of favor while reliance on private cars, bicycles, and walking rose.

Overall, the commuting habits of the Frankfurt UAS members are largely unchanged from previous years. Most commuters still use public transportation, cars, and bicycles, and their choices generally depend on the length and distance of the commute. There has, however, been a slight shift in preferences: While the ranking of transport methods remains the same, there has been a relative increase in cyclists. It will be interesting to monitor these trends in the coming years, especially with potential changes following the pandemic. The next survey is scheduled for the first quarter of 2024.

SDG: 11

Promoting cycling at the Frankfurt UAS

Since 2018, the Frankfurt UAS has held the ADFC (National Cyclist Association) certification "Bike-friendly Employer". This has further encouraged us to improve bicycle-friendly measures at our university on a constant basis. Did you know that there are three service pedelecs available at the university for work-related trips within Frankfurt and the region? One of them is a cargo bike for transporting larger items. The underground garage of Building 2 offers covered parking spaces, and showers are available in Building 10. We also organize regular activities related to cycling. In 2022, we scored even higher during the recertification and earned the Gold certification until 2025.

Sustainability will be one of our university's key priorities in the coming years. In this context, we want and need to rethink our mobility. Frankfurt is working on improving its transport infrastructure, so that cyclists can navigate the city more safely and quickly. We also want to make cycling more attractive at our university and encouraging as many of our members as possible to switch from cars to bikes.

SDG: 11

Contact

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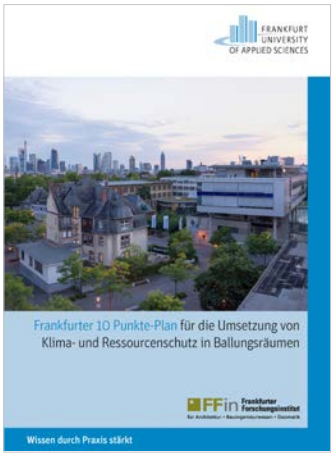
Sustainable Highlights 2022 / 2023

Sustainable highlights 2022: events, awards, partnerships

FFin, the Frankfurt Research Institute for Architecture, Civil Engineering, and Geomatics at the Frankfurt UAS, has developed the “Frankfurt Ten-Point Plan for Climate and Resource Protection in Metropolitan Areas”. It is calling on politics, business, and society to use their knowledge for the benefit of our climate. The plan covers topics from urban development and the circular economy to building renovation and sustainable mobility.



On January 27, 2022, our university was awarded the status of Fairtrade University. Our goals include establishing fair traded products at our dining facilities and events and raising awareness of fair trade and responsible consumption through targeted events and communication.

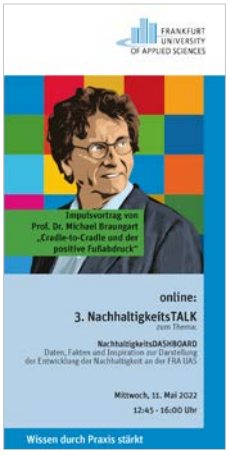
In 2022, the Sustainability Office introduced itself for the first time at the first-year students' fair in April. During an interactive quiz titled SustainPONG, students got to demonstrate their knowledge of sustainability and Fairtrade at the Frankfurt UAS to win prizes.

ESE 2022 © N. Wagner

On May 24, 2022, the Frankfurt UAS partnered with Fairtrade City Frankfurt and the Fairtrade Campaign to host a free Fairtrade breakfast for its students. As well as a free breakfast buffet, the event included a fascinating exhibition and an interesting discussion about fair trade.

Fairtrade breakfast © B. Bieber | Frankfurt UAS

On May 11, 2022, the third Sustainability TALK was held. It revolved around the joint development of a dashboard, and all university members were encouraged to contribute. To achieve our sustainability goals, we need to develop indicators, metrics, and measurements to monitor and evaluate progress. These will allow us to assess the impact of our own habits and derive measures accordingly.



Between August 26 and 28, 2022, the Frankfurt UAS participated in the Museumsuferfest, a festival on the banks of the river Main. It granted the public insights into its four faculties and their latest teaching and research projects. Visitors of all ages participated in fun activities, such as a workshop for building musical instruments from scrap materials or a sustainability quiz rally.

Museumsuferfest © B. Bieber | Frankfurt UAS

The three campus beehives of the Frankfurt UAS produced their first batch of honey in the summer of 2022 – the perfect gift for honored guests, award winners, and supporters of the university. We only give our honey away for special occasions! The project is supported by the university's association (Förderverein der Frankfurt UAS e. V.) and the bee sponsorship program, which allows university members and external supporters to sponsor bees for an annual contribution of €25 and receive a jar of honey as a thank you.

Campus bees © B. Bieber | Frankfurt UAS

"Cloth Instead of Plastic / Reusable, not Disposable" – under this motto, students from the Panoramaschule, a public special education school in Frankfurt, created reusable items such as lunch bags, beeswax wraps, and gift wraps to replace their disposable counterparts. These items were sold at creative fairs and Christmas markets. The Frankfurt UAS rewarded their commitment to sustainability with an award of €3,000.

Sustainability prize for Panoramaschule © Panoramaschule

September 29, 2022, was the 7th Hessian Sustainability Day. Prof. Dr. Ekkehard Schiefer, Sandra Eisenträger, and students from Faculty 2 – Computer Science and Engineering presented their EcoDesign project. It involved an analysis of the entire life cycle of a toaster, from the initial production to its day-to-day usage and final recycling. The goal was to optimize its product design from an ecological, economic, and technical perspective.

A model of the EcoDesign-optimized toaster © M. Murrenhoff, V. Prestinari, L. Ripper, C. Schwab

We want to create spaces of sustainability at our university, and one great idea for this came from within the Interdisciplinary General Studies program: A wooden bug hotel was set up at the rear of the container on Nibelungenallee to boost biodiversity on campus. It is designed to resemble the university logo. The project was financed through an initiative by the Frankfurt Foundation for Research and Education seeking to channel funds from legal penalties into social causes.

Bug hotel © K. Moriggl-Neynaber

Sustainable highlights 2023: events, awards, partnerships

During the winter of 2022/23, all university members were encouraged to save energy by turning off devices after work and wearing warmer clothes instead of turning up the heating. Intended as a further step towards carbon neutrality, this message was communicated through a posted campaign at TU Darmstadt, which the Frankfurt UAS joined.

Marking the 175th anniversary of the National Assembly's first meeting at Paulskirche, the city of Frankfurt organized a large festival in May 2023. The Frankfurt UAS hosted a parallel celebration under the banner of " Democracy and Democratic Values in Europe". The campus festival, which coincided with the German Diversity Day organized by Charta der Vielfalt, featured many activities relating to democracy, sustainability, diversity, and equal access to education.

In February 2023, we set up the new Tiny Studio Lab behind the House of Science and Transfer (HoST). It is a small laboratory intended for the sustainable construction, planning, and operation of buildings. Equipped with a reversible air-to-water heat pump, climate control system, photovoltaic system, many sensors, and sophisticated measuring technology, is an environment for Faculty 1 students to test building concepts and prototypes under real conditions.

The university's cyclists achieved an impressive result in the Academic Bicycle Challenge (ABC) again this year, collectively covering 29,827 kilometers. The Frankfurt UAS has been participating in the ABC since 2019, spending a month every year riding for a good cause.

Tiny-Studio-Lab ©B. Bieber | Frankfurt UAS

Academic Bicycle Challenge © Frankfurt UAS

In June 2023, Frankfurt University of Applied Sciences received its seventh family-friendly university audit certificate. Vice President Susanne Rägle: “The certificate confirms that the Frankfurt UAS has successfully implemented many family-friendly initiatives, which greatly motivates us to keep improving and expanding these concepts.” From expanding work-from-home options to supporting students with caregiving responsibilities and increasing daycare capacity, they are all aimed at helping people balance their family, studies, and work.

Family-friendly university award © B. Bieber | Frankfurt UAS

Safe and sustainable city transport by cargo bike In July 2023, the Frankfurt UAS hosted another one-day workshop on this topic. A professional road safety trainer offered university members and the general public theoretical and practical advice on safely navigating urban road traffic.

Cargo bike workshop © H. Marschner

On the occasion of International Raw Food Day in June, CampusSport collaborated with CampusCulture and the Techniker Krankenkasse to host an event focused on raw food, health, and nutrition. Sustainability, fair trade, and consumption also played a role. Attendees enjoyed two expert talks by a nutritionist, raw snacks, and plenty of interesting facts and recipe ideas.

International Raw Food Day@Frankfurt UAS

Since the 2023/2024 winter semester, all four sustainability professorships at the Frankfurt UAS have been awarded. As a core element of the university’s sustainability strategy, they focus on developing forward-looking solutions for teaching, research, further education, and knowledge transfer. Professors Dr. Timo von Wirth (Faculty 3), Dr. Caroline Schmitt (Faculty 4), Dr.-Ing. Jan Dieterle (Faculty 1), and Dr.-Ing. Bhavin Kapadia (Faculty 2) are contributing impressive expertise and enthusiasm to this initiative.

Sustainability Professorships © Frankfurt UAS

In November 2023, the Frankfurt UAS joined DG HochN, a nationwide network of higher-education institutions and their staff aimed at fostering sustainability in academia. It aims to support the implementation of the UNESCO program "Education for Sustainable Development: Realizing the Global Sustainability Goals" (ESD 2030) in German higher education.

Mitglied von
DG HOCH N
Deutsche Gesellschaft für Nachhaltigkeit an Hochschulen e.V.

On November 15, 2023, the 4th SustainabilityTALK took place at our university. It featured a keynote speech by Katja Diehl, a nationally recognized activist who wrote the book "Auto Korrektur" on green mobility ("Auto Korrektur – Mobilität für eine lebenswerte Welt"). Her speech and the subsequent discussion, which Diehl moderated herself, revolved around the four new sustainability professors and their contribution to a more sustainable world that is fit for the future.

Keynote speech by Katja Diehl © C.Staat | Frankfurt UAS

Talk © C. Staat | Frankfurt UAS

Teaching at our university is diverse and constantly evolving. What path should it take in the coming years? Our Teaching Day event on November 29, 2023, saw lively exchanges among faculty, staff, and students on this topic. While most of the day was dedicated to didactics, many other important topics played a role: AI, service learning, the university of the future, inter- and multiculturalism, sustainability, personal development, social responsibility, and system accreditation.

Teaching Day 2023 © ScoPE

The above selection of sustainable highlights is a small sample of the many events organized in 2022/2023, and each of them made an important contribution to environmental, economic, or social sustainability.

Moving forward, we will continue to advocate for sustainability through interactive experiences which highlight and share our activities, knowledge, and commitment in this field. We intend to communicate these topics more effectively and encourage even greater participation of university members and the general public of Frankfurt.

In this context, we will be awarding the Sustain Award for the first time in the spring of 2024: it recognizes a future-oriented university project which broadly influences studies and teaching, research, business, and society and whose findings hold strong potential for further development.

The award is sponsored by the Frankfurt Foundation for Research and Education at the Frankfurt UAS, and its €4,000 prize money is designated for use in research and teaching. The jury will consist of renowned members from business, academia, and society.

Chapter 5: Implementation of measures

> [The Sustainability Office] will regularly present a sustainability report outlining the university's progress towards sustainability and the degree to which each measure has been implemented.

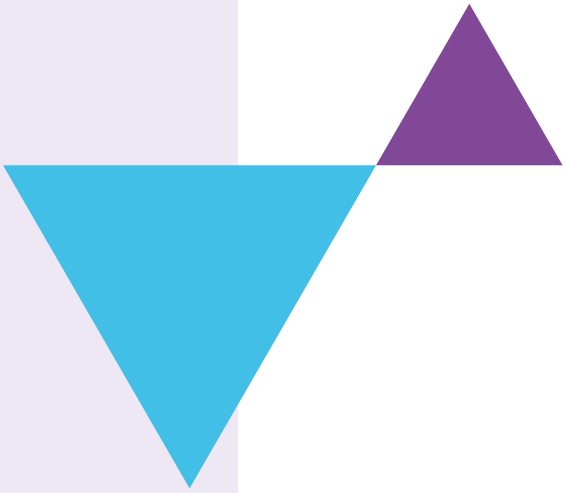
From the Sustainability Strategy

Implementing sustainability measures at the Frankfurt UAS

The 111 sustainability measures and ideas initially collected during the strategy development phase have grown: in 2023, there are 125. While some were discarded for being duplicates or very similar, 24 measures have been completed, 34 are in progress, and a further 20 are planned. They address topics such as:

- → Enshrining education for sustainable development (ESD) across all degree programs: teaching and promoting relevant knowledge, skills, and values in all programs
- → Further-education offers for faculty, staff, and external individuals
- → Greening and improving the quality of stay on campus
- → Improving waste separation and increasing the recycling rate
- → Raising awareness and implementation of sustainable procurement practices
- → Adapting buildings to the impact of climate change
- → Reducing emissions from work-related travel

The following overview shows how the university's implemented, ongoing, and current measures and activities contribute to our sustainability strategy. It reflects many aspects from the aforementioned "125 measures".



Sustainability strategy	Relevant measures and activities	Implementation
Sustainability is a visible, interdisciplinary aspect of all our degree programs. In addition to specialist knowledge and skills, we furnish all our students with a broad understanding of sustainability. They are taught to consider all dimensions of sustainability – ecological, social, economic – equally and analyze and assess relevant questions accordingly.	• All new degree programs will be reviewed for sustainability within the scope of the planned system accreditation • This goal will be pursued through U!REKA SHIFT • We will launch the project "Transformative Skills for Sustainability" to convey relevant competencies • Four sustainability professorships will act as multipliers • Sustainability-focused teaching projects, e.g. "Zero Waste" (business informatics, ranked among the top in the international Data Mining Cup 2024)	Ongoing, for new degree programs as part of the system accreditation until the end of 2026
We hone our conflict management skills and critical analysis to become good ambassadors of sustainability.	• Supervisor training und further-education opportunities for employees • ScoPE services • Working group on antisemitism and hate speech (Faculty 4)	Ongoing
In our academic environment, the topic of sustainability is a consistent and high-profile consideration across all research projects.	• Publication of research projects aligned with SDGs in the Research Information System (FIS) to increase transparency • Sustainability as a criterion for internal research funding	From 2023
Using our research insights, we create solutions for the sustainable development of a world that is fit for the future.	Conferences and publications, e.g.: • FFin Annual Conference on energy savings in existing buildings ("Energieeinsparungen beim Bauen im Bestand – Rückblick und Ausblick") • 9th EMES International Research Conference on Social Enterprise • Symposium and book release: Decolonizing Relations: Ecosocial Transformation in Social and Pedagogic Practice ("Beziehungen dekolonisieren: Ökosoziale Transformation in der sozialen und pädagogischen Praxis") • 6th Symposium of the Institute of Addiction Research on Tobacco Harm Reduction • Lecture series and publication of the project "Women in AI": Artificial Intelligence in Healthcare	Ongoing

Sustainability strategy	Relevant measures and activities	Implementation
Transfer of our expertise and our technologies in the field of sustainability to municipalities, businesses and associations using suitable collaboration and communication formats.	• Online course: Child Protection Conference for Schools (Kinderschutzfachtag Schule) on the Hessian Teachers Academy learning platform • Exhibitions, including: "U!R Commons Expo2023," featuring project results from the U!REKA Labs international network meeting, aimed at fostering urban co-creation and commoning • SustainabilityTALKs	Ongoing
We support municipalities, companies, and associations in their transition towards sustainability by developing technical, social and institutional innovations and overseeing their implementation.	• Partnership with the Offenbach district • Projects by the RELUT research center, e.g., the bicycle-friendly redesign of Oeder Weg • Projects by the Sustainable Finance Research Lab (SuFiRe Lab) • Service-learning projects to foster social responsibility among students	Ongoing
Sustainability aspects such as the personal development of employees, corporate resource management, and digitalization are integral parts of all our further-education programs. They are consistently designed with their future viability in mind.	• Staff development measures • Services from the KompetenzCampus • AGWW program • Central further-education programs of the State of Hesse • HeFDI Data Talks • DigiTaL workshop program	Ongoing
We aim to operate our entire university carbon-neutrally by 2030.	• Transition to green electricity and district heating (completed in 2010/2019) • Replacement of lamps with LED lighting • Energy-saving measures (heating and electricity), including with staff involvement • Plans for photovoltaic systems and optimization of technical building equipment (PV-TGA program, State of Hesse)	By 2030

Sustainability strategy	Relevant measures and activities	Implementation
We, the Frankfurt UAS, see ourselves as a living laboratory and a model project for sustainable building, campus and green space planning and transportation.	• Tiny Studio Lab • Campus greening plans • E-bikes / electric cargo bikes in our vehicle fleet • Electric charging stations in our underground garage	Ongoing
All our construction projects are planned, bid, and implemented with the goal of carbon neutrality in mind.	• LBIH, the state construction and real estate agency of Hesse, implements energy-efficient building and renovation regulations on campus	Ongoing
We are mapping our resource and energy consumption to adapt our behavior and infrastructure as needed.	• Development of a sustainability dashboard	By 2024
We authentically demonstrate our transformation process towards becoming a sustainable university, inviting the general public and the urban community to experience real-life sustainability on our campus.	• Festival of Democracy • SustainabilityTALK • Road safety trainings for cargo bike riders • ScoPE events (such as CAES) • Sustainable finance research seminar	Ongoing
In the spirit of sustainability, we use all available resources prudently and with appreciation. That is why we are undertaking a review of our administrative and operational procedures, making full use of the digital options at our disposal.	• campUAS learning platform • FranCa eCampus student portal • Exam conduct and administration (Wiseflow, peregos) • Digital vacation requests • Centralized printers (Campusprint) • Ongoing digitalization initiatives in all faculties	Ongoing
When it comes to procurement and commissioning, we make all decisions with a sustainability perspective to ensure that no compromises are made for financial reasons.	• Criterion for awarding new cleaning contracts	Ongoing
As a matter of principle, the Frankfurt UAS only enters into cooperative arrangements with businesses and organizations that are already committed to sustainability – subject to verification wherever possible.	• Form “Social, ecological, and innovative requirements / sustainability in the procurement process”	By 2025

Sustainability strategy	Relevant measures and activities	Implementation
Our endeavor to become certified as a Fairtrade University underscores the importance of fair-trade practices and sustainable procurement and consumption at our institution.	• First Fairtrade University in Hesse (since 2022) • Ongoing recertification	Title renewal in 2024
We ensure healthy studying and working conditions.	• Occupational health management • Psychosocial counseling • CampusSport • Meditation and mindfulness programs (ScoPE) • Bicycle-friendly university	Ongoing
A good work-life balance, diversity and inclusion are crucial prerequisites for fair employment, teaching, and learning and a pleasant atmosphere among colleagues.	• Childcare on campus • Family Services Office • Family-friendly university audit (7th time in a row) • Mobile work • Flexible working hours • Diversity audit • Anti-discrimination policy and Anti-Discrimination Council • Women's and equality representatives • Guidelines to ensure good academic practice • Counseling center for students with disabilities • Anti-discrimination counseling • StudyCompass (academic counseling) • Learning center	Ongoing
To monitor and adjust our behavior accordingly, the Sustainability Office will report on current projects, carbon reduction, and resource and energy consumption on a relevant platform.	• Dashboard to be completed in the summer of 2024	From 2024
The Sustainability Office will regularly present a sustainability report outlining the university's progress towards sustainability and the degree to which each measure has been implemented.	• Reports for 2021 and 2022 / 2023 published	The 2024 / 2025 edition is scheduled for 2026

Sustainability strategy	Relevant measures and activities	Implementation
A Sustainability Council meets at least once a year to review our transformation process.	• Regular meetings are held. The Council provides advice on the implementation of the sustainability strategy	Ongoing
In implementing and further developing our sustainability goals, we are wholly committed to fostering a participatory culture in which our professors, employees, and students have the opportunity to play a crucial role.	• Representatives of the Sustainability Office: One representative per faculty and administrative department plus student representatives, meetings twice a year • Sustainability Office as a port of call for initiatives • Various steering groups	Ongoing
We regularly review our sustainability strategy.	• Last updated in 2023	On a case-by-case basis

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