



University: University of Pécs (UP)
Country: Hungary

13.3 Environmental education measures

13.3.1. Local education progress on climate

Provide local education programmes or campaigns on climate change risks, impacts, mitigation, adaptation, impact education and early warning

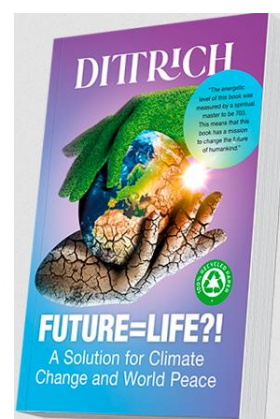
The University of Pécs has educational programmes on climate change, linked to different faculties of the university. These programs and teaching materials focusing on different faculties of the university and comprehensively cover the effects of climate change from a scientific, health, and social perspective.

- **The Faculty of Engineering and Information Technology** has a course that focuses on the physical and chemical basis of climate change, changes in climate to date, global goals, and complex solution programs.

About the course: Dr. Ernő Dittrich is a lecturer at the Faculty of Engineering and Information Technology at the University of Pécs, who deals with climate protection in addition to water protection and aquatic ecosystems. Through his course, he demonstrates practices that can be applied in our everyday lives and with which we can take huge steps towards saving the Earth. The base of the course is a 6 program solution system, that he developed for climate change and world peace. The course is available for every university student for free, lectures for other interested parties are also available as a paid course.

Lectures are about:

- The physical and chemical basis of climate change.
- The current extent of climate change and changes to date. Comparison of natural global cooling and warming cycles and warming caused by anthropogenic emissions.
- Climate models, climate projections.
- The tipping points of irreversible change.
- Global goals.
- The effects of climate change on the environment and human society.
- Technical and scientific solutions in the fight against climate change.
- Social and economic solutions in the fight against climate change.
- The role of the individual in the fight against climate change. The Change
- 6 Program as a complex solution system



- **The Faculty of Medicine** has a course on the integration of climate change into the medical curriculum.

About the course: Nowadays, it is becoming increasingly clear that climate change has a significant impact on human health. According to WHO estimates, between 2030 and 2050, climate change could lead to an additional 250,000 deaths per year. Consequently, knowledge about the health effects of climate change is crucial for the training of future doctors. The aim of this course is to provide an overview of the diseases that, according to our current knowledge, are most closely related to the effects of climate change, as well as the possibilities for their prevention and treatment.

Lectures are about:

1. Health effects of climate change
2. Health effects of forest fires, droughts, and extreme weather events
3. Thermal regulation, heat effects, heat shock
4. Pharmacological aspects of climate change
5. Effects of climate change in relation to cardiovascular diseases
6. Effects of climate change in relation to metabolic disorders



7. Effects of climate change in relation to kidney diseases
8. The effects of climate change in relation to childbirth and birth complications
9. The effects of climate change in relation to mental health
10. The relationship between climate change and skin diseases and allergies
11. The relationship between climate change and vector-borne diseases
12. The relationship between climate change and waterborne diseases, toxic algae and balneology

- **The Faculty of Economics** has a course on the Introduction to the issue of the UN's 17 Sustainable Development Goals (SDGs)

About the course: with Dr. Hanga Bilicz as the coordinator, during the semester, students can learn about the 17 Sustainable Development Goals adopted by the United Nations General Assembly for the period up to 2030, which offer a better future for our planet and billions of people worldwide. The goals call on both developing and developed countries to take action to address inequalities and tackle climate change. The goals address not only economic growth and prosperity, but also people's health, education and social needs, while focusing on environmental protection. The instructors of this online course, which is unique in Hungary, are experts from various universities who analyse different aspects of the Sustainable Development Goals. The instructors of this online course, which is unique in Hungary, are experts from various universities who analyse different aspects of the Sustainable Development Goals.

Lectures are about:

Week	Lecture title	Lecturer	University	Objective
1	The dilemma of sustainable development	Dr. Viktor Glied	University of Pécs	Students will understand the general structure of the course. Students understand the challenges facing our world and the topics related to sustainable development.
2	How long can infinite growth continue within finite limits – the responsibility of corporate leaders	Péter Renfer	Budapest Metropolitan University	Students understand the economic implications of sustainability and the environmental impact of economic activities. Students understand the differences in economic development between countries and the determining factors of economic growth in each country.
3	Money and happiness, inequality	Prof. Dr. Gergely Tóth	Hungarian University of Agricultural and Life Sciences	Students understand the importance of reducing inequalities and the economic background of the tools needed to achieve this. Students will understand the various factors that contribute to the development of some countries while others do not.
4	From farm to table, then to the bin? – The dissonance between a world without hunger and food waste from an environmental, social and economic perspective	Gergely Macher, Dr. habil. Anikó Zseni, Dóra Sipos, Dalma Bódizs	University of Győr	Students will understand the opportunities available in different countries to eradicate extreme poverty; Students will understand food security, agricultural systems and ecology, and examine what can be done to ensure sustainable global and local food supplies.
	Who are the poor, really? Tools for defining, measuring and reducing poverty	Dr. Hanga Bilicz	University of Pécs	
5	Sustainable food systems: Horticultural solutions and challenges for future nutrition	Dr. Tímea Kiss	John von Neumann University	Students will understand the various planetary boundaries and their effects on growth dynamics.
	Planetary boundaries	Prof. Dr. Gergely Tóth	Hungarian University of Agricultural and Life Sciences	
	The only Earth? The finite Earth!	Dr. Ferenc Kiss	University of Nyiregyháza	
6	Cases concerning gender equality	Katalin Ásványi	Corvinus University of Budapest	Students understand aspects of gender equality and fair work
	Creating decent work	Katalin Ásványi	Corvinus University of Budapest	



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Additional:

The Faculty of Engineering and Information Technology of the University of Pécs at Solar Decathlon

The Faculty of Engineering and Information Technology implements conferences, expos, competitions and project work into its educational plan.

Solar Decathlon Europe is an international intercollegiate innovation competition that has been held since 2002. During the competition, each participating team must design and build an energy-efficient, environmentally conscious, lightweight residential building that uses only solar energy, in collaboration with market participants.

At the 2024 Solar Decathlon, the University of Pécs's team was the only Hungarian representative at the competition with its 'Lungs of the City' project.



"The climate regulation formulated by the European Union envisions a carbon-neutral Europe by 2050 (...). For this to be possible, significant changes are needed in almost every segment of our current social, industrial, and economic existence," emphasized Tamás Kondor. "The path to achieving this goal starts with people who think and act consciously. Here, at the University of Pécs we consider ourselves to be such people. Even if we sometimes make mistakes, we strive for the right thing and are constantly improving. We are committed advocates of the struggle for a sustainable, healthy existence and a green vision of the future for people who live in harmony with nature and therefore take active action. The Solar Decathlon project, designed according to the principles of environmentally positive architecture, is an exciting and challenging undertaking," he concluded.

This year, UP students came up with a complex plan focused on community building, sustainability, and carbon neutrality: they designed an apartment building for young people where they can live as a large community in an environmentally positive space. **The goal of the UP project is to create affordable, sustainable, and carbon-neutral homes for young people.** Their idea is unique in that, in addition to apartments, they would create a community space for work and entertainment.

"Our building has three residential floors and a communal floor. Each residential floor has three 38-42 m² apartments, which can be easily converted if the family expands. One of the communal floors is for work, while the other is for internal collaboration. Here, residents can enjoy collaborations such as shared childcare, study groups, club activities, workshops, a library, and community gardening."

Join-Rise Project – Development of a virtual learning platform (VLC) 2024

The main objective of the Join-Rise project was to create innovative teaching materials and resources that science, technology, engineering, and mathematics teachers can incorporate into their sustainability-focused curricula. To this end, **a handbook of best practices was compiled with numerous recommendations.**

In addition to the handbook, the Join-Rise project **also developed a virtual learning platform (VLP) that provides educational resources for students, teachers, and curriculum developers, including educational videos, quizzes, and interactive content** related to the 17 Sustainable Development Goals unanimously adopted by the United Nations. The project aims to revolutionise higher education STEM teaching and learning by designing an innovative virtual blended SDGs training environment.

The 2030 Agenda for Sustainable Development is one of the most ambitious and important global agreements in recent history. In order to achieve the 17 SDGs, it is necessary to educate smart, creative and entrepreneurial individuals that have confidence and critical thinking.

JOIN-RISe will therefore create courses, optional subjects, subject contents and databases to help lecturers and bachelor's and master's degree coordinators to adapt the current curricula to the needs contemplated in the Agenda 2030. In addition, Universities and higher education institutions will have a methodological guideline at their disposal to adapt the Certificate of Sustainable Commitment (CSC) to the European Qualifications Framework (EQF) and to the idiosyncrasy of the involved university. Thanks to JOIN-RISe, students will be ready to use their knowledge and expertise to contribute to the achievement of the SDGs, through a more inclusive and digital approach.

SpongeCity 2024

The city of Pécs and the University of Pécs are committed to working together to achieve climate neutrality and green transition, with a particular focus on research and development, joint applications, and the coordinated use of university and municipal competences.

Among the activities of the University of Pécs supporting the achievement of the climate strategy goals of the city of Pécs is the SpongeCity project coordinated by the University, which aims to improve the ability of cities to adapt to climate change by testing and promoting the "sponge city" methodology, and to help scientists



and researchers develop solutions for real urban problems that can address climate change and flash-floods in cities.

The extreme weather conditions of recent years, including intense rainfall and periods of drought, increasingly highlight the need for efficient water management. Flooding and rapid drainage are serious problems in urban areas, so new, innovative solutions are needed. The aim of the **Sponge City** project is **to increase green spaces, reduce asphalt-covered soil surfaces and create green roofs**. The goal is to successfully store large amounts of precipitation and use it for irrigation or, if necessary, firefighting. The project is led by the University of Pécs, with 13 partners from 12 countries working together on the project. Cities with different geographical characteristics have been included, so it is possible to test models in densely populated, sparsely populated, hilly and flat areas. Several factors have been taken into account: the city's current water management, hydrological conditions, previous practices and technical plans.

As part of the tender, UP experts will develop a **local action plan for the city** that takes into account sponge city principles and aims to reduce rainwater utilisation and flash flood risks. A **feasibility study** will also be developed to provide a detailed description of one of the investments/measures proposed in the action plan. The measure will be selected based on a proposal from the City of Pécs with county rights. Experts from Faculty of Sciences of the UP have established an experimental rain garden in the Botanical Garden, equipped with measuring instruments. The **water balance measurement results** will be provided to the city, which may help in the development of further urban rain gardens.

Green University Program of the University of Pécs

The University of Pécs launched its Green University Program in 2016. **The mission of the program is the encouragement of all innovations, good practices, initiatives and local policies regarding environmental sustainability; and furthermore, to shape and strengthen ecological awareness by the means of science and education. The university aspires to mitigate its carbon footprint and supports technologies, services and consumer habits that reduce the use of natural resources, realizing decarbonisation goals.**

UP has consciously formulated its mitigation efforts, which are in line with the decarbonisation goals of the 'Second National Climate Change Strategy'. The first main step of the University's decarbonisation strategy is to exchange fossil fuels with renewable energy resources. The ratio of renewable energy resources used by the UP has been constantly increasing since 2016. More than 50% of the entire energy usage of the University is covered by renewable sources, of which biomass has the largest proportion, followed by geothermal and solar energy.

Environmental Education at a young age

Litter collection in the school's surrounding area on sustainability Week 2024- organised under the "YouPick!" Volunteering for a clean Hungary" campaign, with the support of the Green University Program

The "YouPick!" campaign is Hungary's largest volunteer waste collection movement. The University of Pécs's Practice Elementary School joined the campaign, the teachers took their pupils to participate in this noble initiative. Before the waste collecting, the children received accident prevention training, where they learned which hazardous waste items, they should not pick up themselves, but only their supervisors. Following that, the children enthusiastically cleaned up the area around the school. For twelve years now, the movement has been encouraging primary and secondary school students, as well as their parents and teachers, to care for our environment and be more environmentally conscious.

The main goal of the campaign is to raise awareness among children, parents and teachers about the importance of environmental protection. The school students enthusiastically cleaned the surrounding streets, and, through their hard work, they removed several bags of household waste from the area. At the same time, the joint litter collection increased the children's awareness and made them realise that they must work together for the environment. "We believe it is important to start this kind of education at an early age, because this way environmental awareness becomes part of their moral principles, and they will be able to set a good example for their own children and grandchildren."