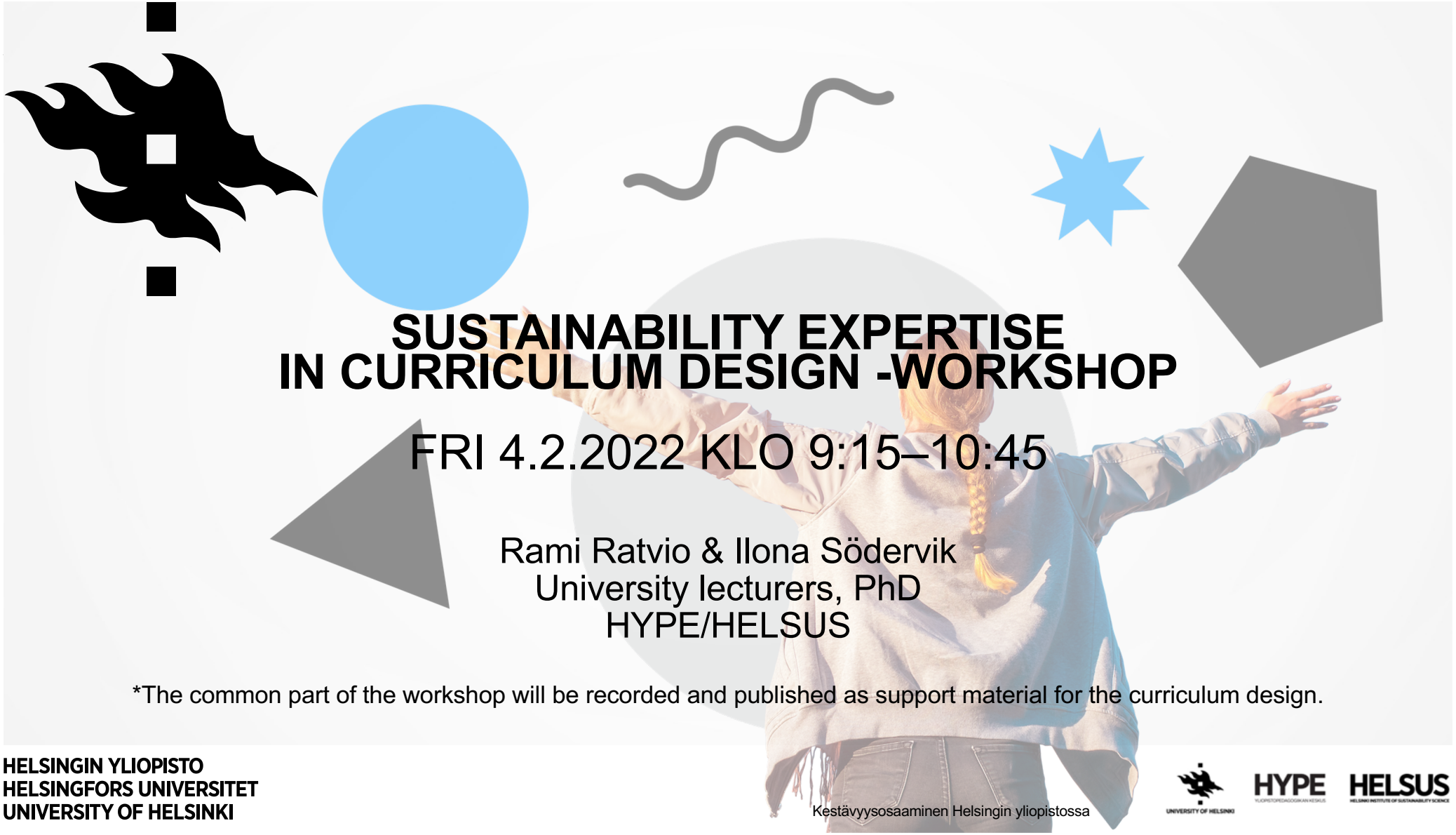


SUSTAINABILITY EXPERTISE IN CURRICULUM DESIGN -WORKSHOP

FRI 4.2.2022 KLO 9:15–10:45

Rami Ratvio & Ilona Södervik
University lecturers, PhD
HYPE/HELSUS

*The common part of the workshop will be recorded and published as support material for the curriculum design.

AGENDA

Introduction

Embedding sustainability in the curricula (15min)

A quick poll on sustainability expertise in curriculum design (10 min)

Example: Different definitions and frameworks for sustainability (5 min)

Sustainability course 3 ECTS common part and 2 ECTS discipline-specific part (15 min)

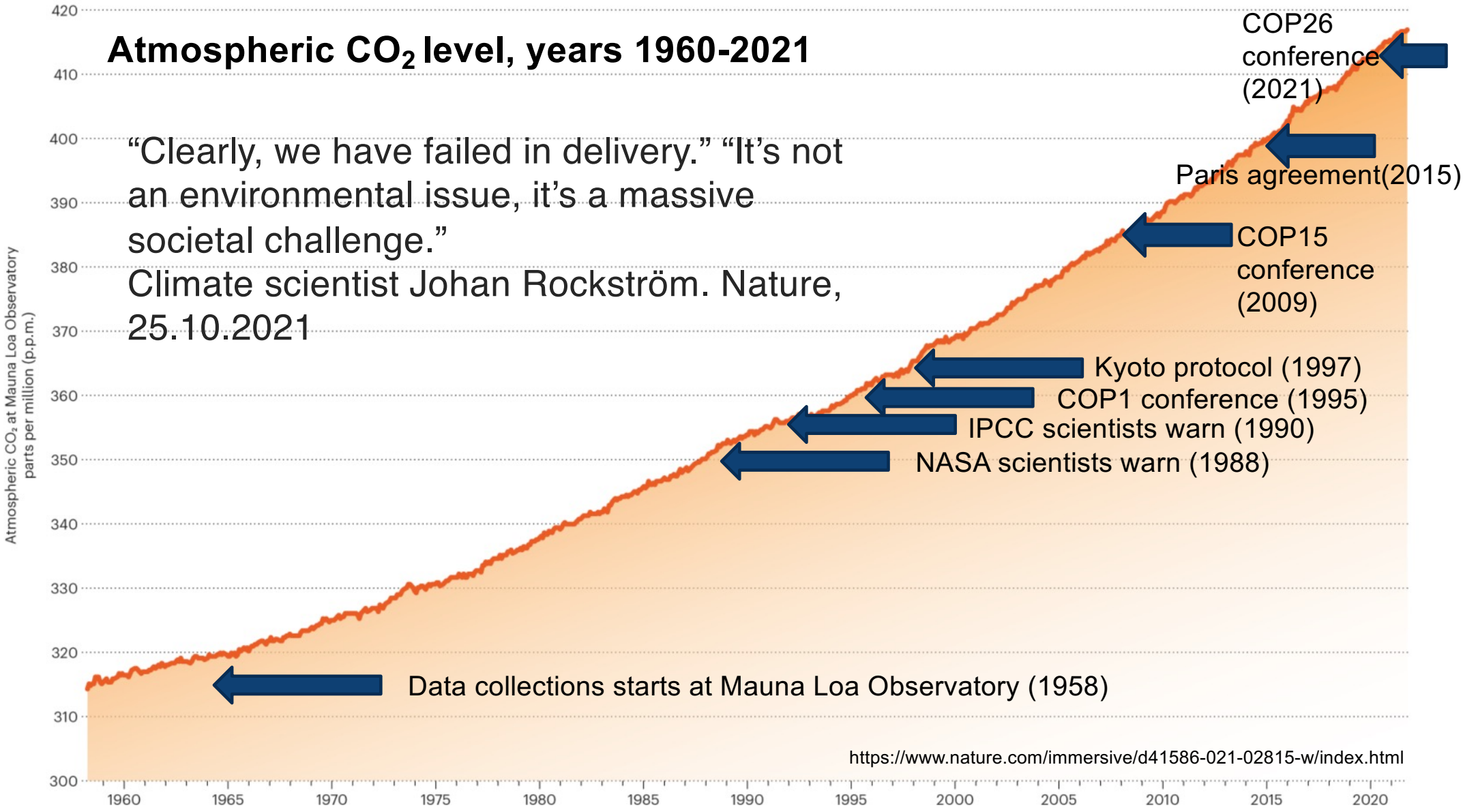
Video: Prof. Lozano: How to embed sustainability into our university teaching? (10 min)

Group discussion: Best practices in different degree programmes (30 min)

Examples of different tools for curriculum design (5 min)

Atmospheric CO_2 level, years 1960-2021

"Clearly, we have failed in delivery." "It's not an environmental issue, it's a massive societal challenge."
Climate scientist Johan Rockström. Nature, 25.10.2021



EMBEDDING SUSTAINABILITY IN THE CURRICULA 2023-2026

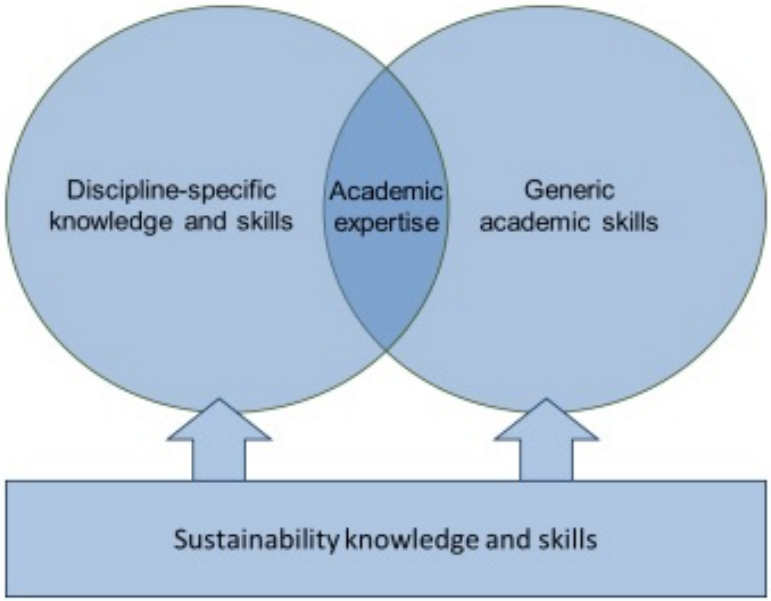
According to the new strategic plan of the University of Helsinki for 2021–2030, the theme of sustainability is to run through all of the University's educational offerings.

The curricula emphasise the strategic choices of the University, one of the focus points being sustainability!

This means making sustainability expertise part of discipline-specific knowledge and skills as well as generic expert skills.

STRENGTHENING OF SUSTAINABILITY SKILLS AS PART OF GENERIC EXPERT SKILLS

- Academic expertise is composed of discipline-specific knowledge/skills and generic skills supplemented with sustainability competencies.
- Strengthening of sustainability skills as part of generic expert skills
- **How has this been operationalized?**



Discipline-specific knowledge and skills supplemented with sustainability expertise	Generic academic skills supplemented with sustainability skills
An understanding of the nature of the discipline Key theories and concepts of the discipline Key research methods of the discipline Relationship between theory and practice in the discipline Practical applicability of knowledge in the discipline Key discipline-specific sustainability expertise related to, for example, the sustainability transition, climate change and biodiversity loss	Identifying and choosing the direction of one's personal expertise Communication, interaction and cooperation skills Scholarly and ethical thinking Systemic thinking Futures thinking Strategic thinking and agency

1. STRENGTHENING DISCIPLINE-SPECIFIC SUSTAINABILITY EXPERTISE

Degree programmes identify and define what sustainability expertise is key to supporting discipline-specific expertise. Learning outcomes for sustainability and responsibility skills are to be recorded on the degree programme level. The following structure can be used to describe the learning outcomes:

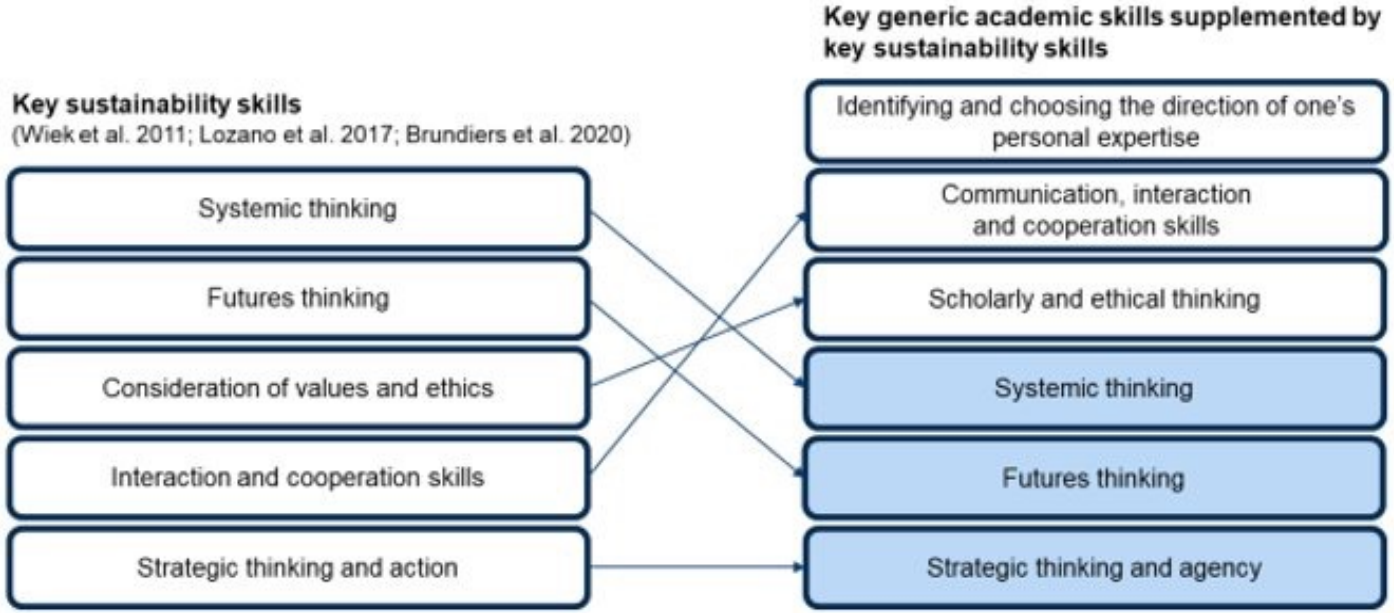
- 1.) Degree programmes describe which knowledge, skills, values and attitudes are key to discipline-specific sustainability expertise.
- 2.) Degree programmes identify, a) Which Sustainable Development Goals of the UN (2015) are key to the degree programme and ensure that they are included in the objectives of the degree whenever applicable
- or b) How the objectives of the degree support the sustainability transition (see UN 2019, Finnish Expert Panel for Sustainable development 2020)
- or c) How the objectives of the degree support the description of sustainability as used in the discipline.

2. DEVELOPING INTO A SUSTAINABILITY EXPERT

- **Each student has the opportunity to develop into a sustainability expert in their discipline.** The University and its degree programmes must ensure that each student has the opportunity to obtain basic knowledge on sustainability, with a focus on knowledge pertaining to the sustainability transition, climate change and biodiversity loss. At the beginning of 2023, a considerable proportion of undergraduate students will have completed the Sustainability course (SUST 001, 3 cr).
- Degree programmes describe how studies that support the development of sustainability expertise have been included in the curriculum.
- **Bachelor's programmes:** The curriculum can include the Sustainability course (SUST-001, 3 cr) as either discipline-specific studies or general studies. The curriculum can also include a course worth five credits designed by the degree programme, which includes the knowledge and skills provided by SUST-001 (3 cr) and a discipline-specific component worth two credits. These courses can be either compulsory or optional in the curriculum.
- **Master's programmes:** The degree structure should allow students to complete the Sustainability course (SUST 001, 3 cr)..
- **Doctoral programmes:** Sustainability expertise should be included in the degree.

3. STRENGTHENING SUSTAINABILITY SKILLS AS PART OF GENERIC ACADEMIC SKILLS

- Degree programmes describe how the degree supports the acquisition of generic academic skills, which include sustainability skills.
- As part of curriculum design, degree programmes define how generic academic skills are reflected in the learning outcomes, teaching methods and assessment of competence, as well as develop teaching to strengthen sustainability skills as part of generic academic skills.



Integration of key sustainability skills identified in the literature into generic academic skills. The list on the left includes five key sustainability skills, while the list on the right presents seven key generic academic skills. Included are also key sustainability skills, some of which (in blue) are included as new additions in the list of generic academic skills.

SUPPORTING THE DEVELOPMENT OF GENERIC ACADEMIC SKILLS DURING BACHELOR'S DEGREE STUDIES

Examples of generic skills to be integrated into discipline-specific studies			
Generic academic skills	1st year	2nd year	3rd year
Identification and direction of personal expertise	• Building motivation and interest • Time management skills • Planning studies, practice in independent study • LStarting to learn how to assess their own learning • Identifying personal skills • Self-knowledge	• Assessing personal work methods, recognition of study-related challenges • Taking responsibility for their own studies • Assessing personal coping skills, stress management and wellbeing • Identifying personal prior learning • Advancement paths, career alternatives, description of personal learning	• Lifelong learning skills • Managing the thesis writing process • Project work skills • Identifying and making visible personal prior learning, job-seeking skills • Career planning and setting of future goals
Communication, interaction and cooperation skills	• Orientation and acquainting themselveswith others • Integrating into the academic community and group formation with peers	• Interaction skills, groupwork skills, constructive interaction skills • Skills in verbal, written and digital communication	• Cooperation and management skills • Negotiation skills • Skills in verbal, written and digital communication • Presentation skills
Scholarly and ethical thinking	• Critical literacy, media literacy and skills in analytic thinking • Training in academic writing begins • Training in ethical thinking begins • Training in sustainability and responsibility thinking begins	• Academic writing • Argumentation skills • Information seeking and retrieval skills and critical evaluation of information • Skills for applying information • Developing ethical thinking • Developing sustainability and responsibility thinking	• Academic writing, critical evaluation of information • Argumentation skills • Innovation and creativity, problem-solving and decision-making skills, taking into account values, principles and objectives related to sustainability and responsibility in problem-solving and decision-making. • Research ethics and ethical behaviour • Sustainable and responsible activities
Systemic thinking	• Launching systemic thinking	• Developing systemic thinking • Identifying the impact of their own sector on sustainability through the operation of different systems	• Systemic thinking skills, such as the review, analysis and evaluation of the structures and dynamics of complex systems
Futures thinking	• Launching futures thinking	• Developing futures thinking • Identifying personal prior learning in tackling future sustainability issues	• Futures thinking skills, such as production of alternative scenarios and their critical evaluation
Strategic thinking and agency	• Launching strategic thinking and action	• Identifying prior learning, opportunities for action and roles in promoting the sustainability transformation	• Skills in the planning, assessment and implementation of experiments, interventions, transitions or change supporting sustainability

Master's degree studies or working life

Tools for developing generic academic skills during university studies: PSP, studies in career orientation and expert identity, portfolio work and reflection of personal skills, HowULearn surveys
The development of generic academic skills continues throughout the studies and in accordance with the concept of continuous learning in working life.

*Targeted learning outcomes comply with national and European Qualifications Frameworks (NQF and EQF).

Centre for University Teaching and Learning, counselling psychologists, Career Services

SUSTAINABILITY EXPERTISE IN CURRICULUM DESIGN – INSTRUCTIONS IN A NUTSHELL

- Degree programmes identify and define what sustainability expertise is key to supporting discipline-specific expertise as follows:
  1. Which knowledge, skills, values and attitudes are key to discipline-specific sustainability expertise? What are the sustainability and responsibility learning outcomes for the degree programme (e.g. sustainable development goals, support for the sustainability transformation, or other description of sustainability)
  2. How are studies that support the development of sustainability expertise included in the curriculum? (e.g. SUST-001 etc.).
  3. How does the degree support the acquisition of generic expert skills, which include sustainability skills?

A QUICK POLL ON SUSTAINABILITY EXPERTISE IN CURRICULUM DESIGN

- What do you think of the following statements regarding sustainability expertise in your degree programme or unit? Please answer the quick poll here: https://www.menti.com/154biek6ej
  - Sustainability expertise is relevant to me on a personal level.
  - Sustainability expertise is relevant at a societal level.
  - Sustainability expertise is relevant to me professionally.
  - Our degree program already includes studies that support developing into a sustainability expert.
  - We are planning to include the Sustainability Course (SUST-001, 3 ects) in the curriculum (as a compulsory or optional course).
  - We are planning a 2 ects discipline-specific Sustainability Course component.
  - In the future, sustainability knowledge and skills will be included through all of the educational offerings in our degree programme.

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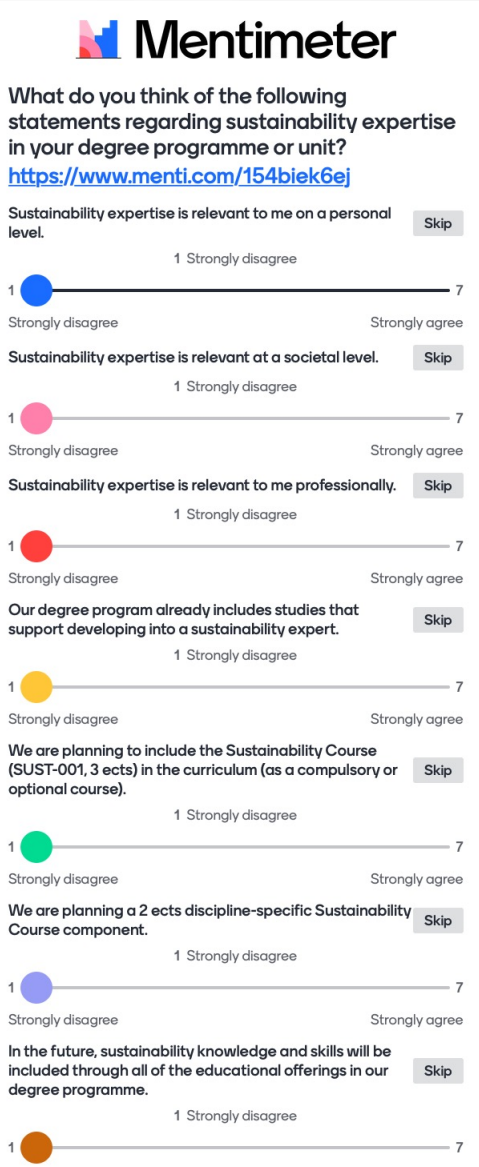
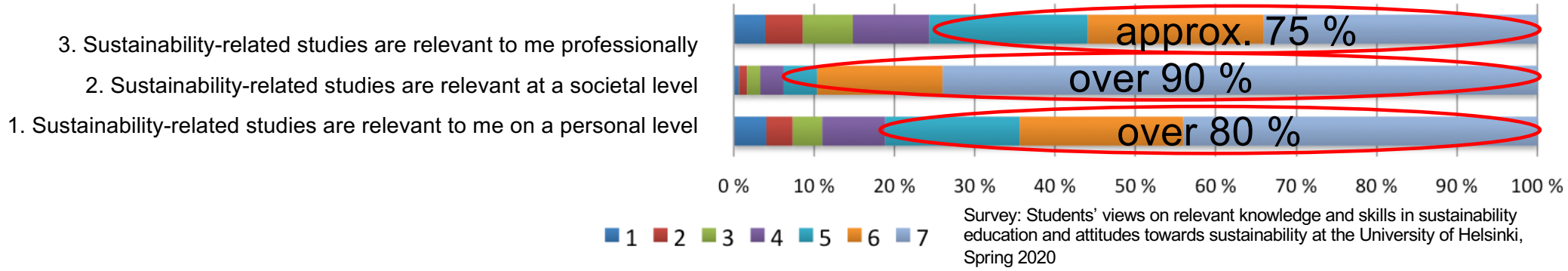


A QUICK POLL ON SUSTAINABILITY EXPERTISE IN CURRICULUM DESIGN: RESULTS

- Workshop participants' responses: https://www.mentimeter.com/s/84906b76a61cd1dc65dc8d59a4529a5e/25fa9e63b2e4
- Students found sustainability-related studies relevant on a personal, societal and professional level (Survey at the University of Helsinki, spring 2020)

What do you think of the following statements regarding sustainability-related studies? Please answer using the scale from 1 (strongly disagree) to 7 (strongly agree). N=797

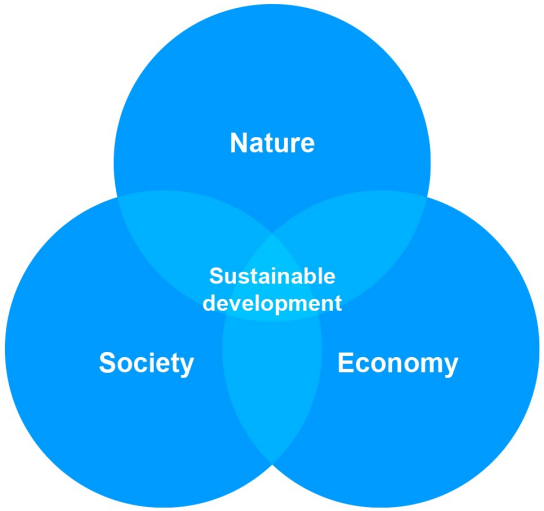


Survey: Students' views on relevant knowledge and skills in sustainability education and attitudes towards sustainability at the University of Helsinki, Spring 2020

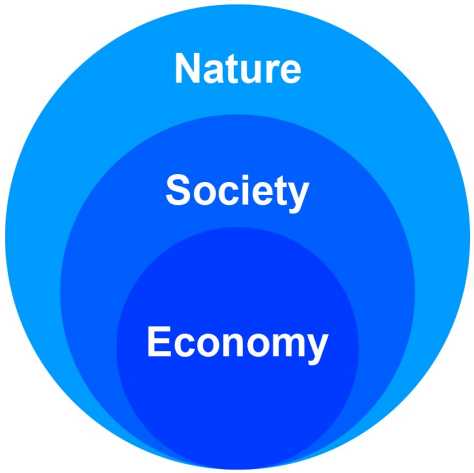
DIFFERENT DEFINITIONS AND FRAMEWORKS FOR SUSTAINABILITY

”Ability to exist” ”Co-existence of human race and the rest of nature on the Planet”

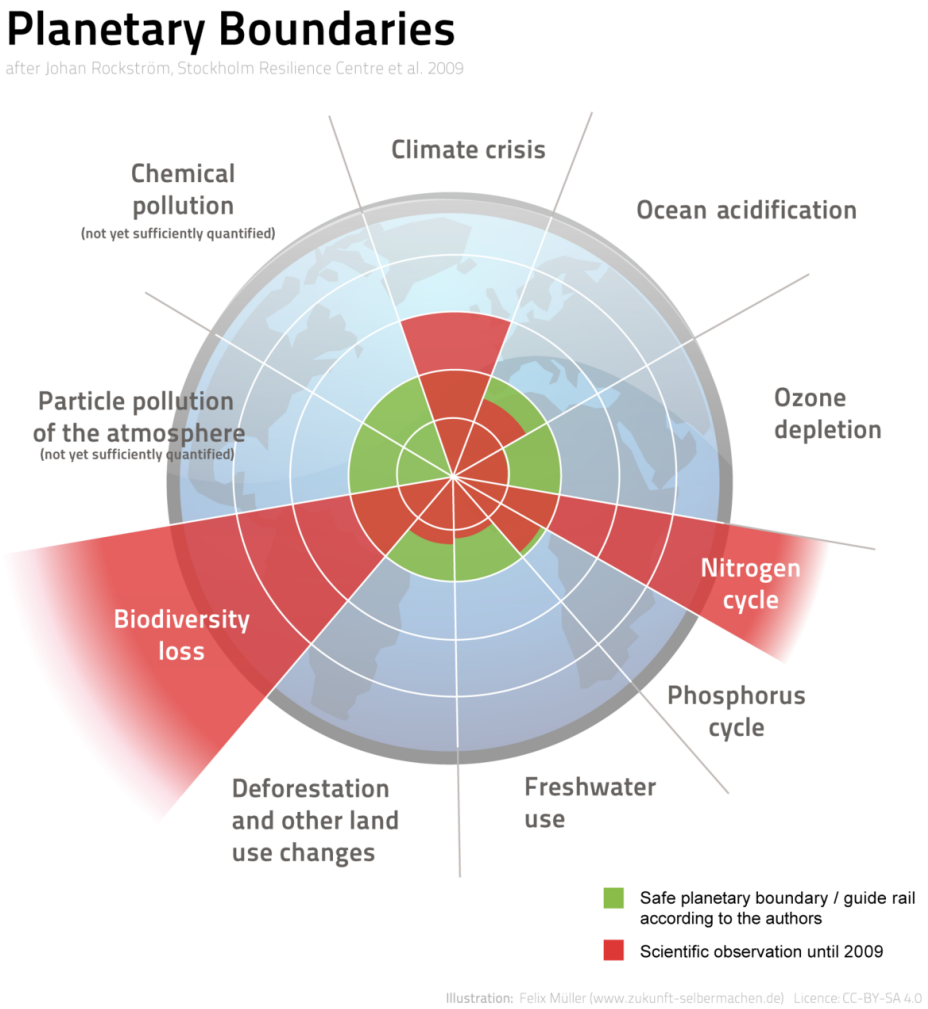
”The key question is how to bring about a profound change towards sustainability in people's values and lifestyles in different parts of society” (Soini 2017)

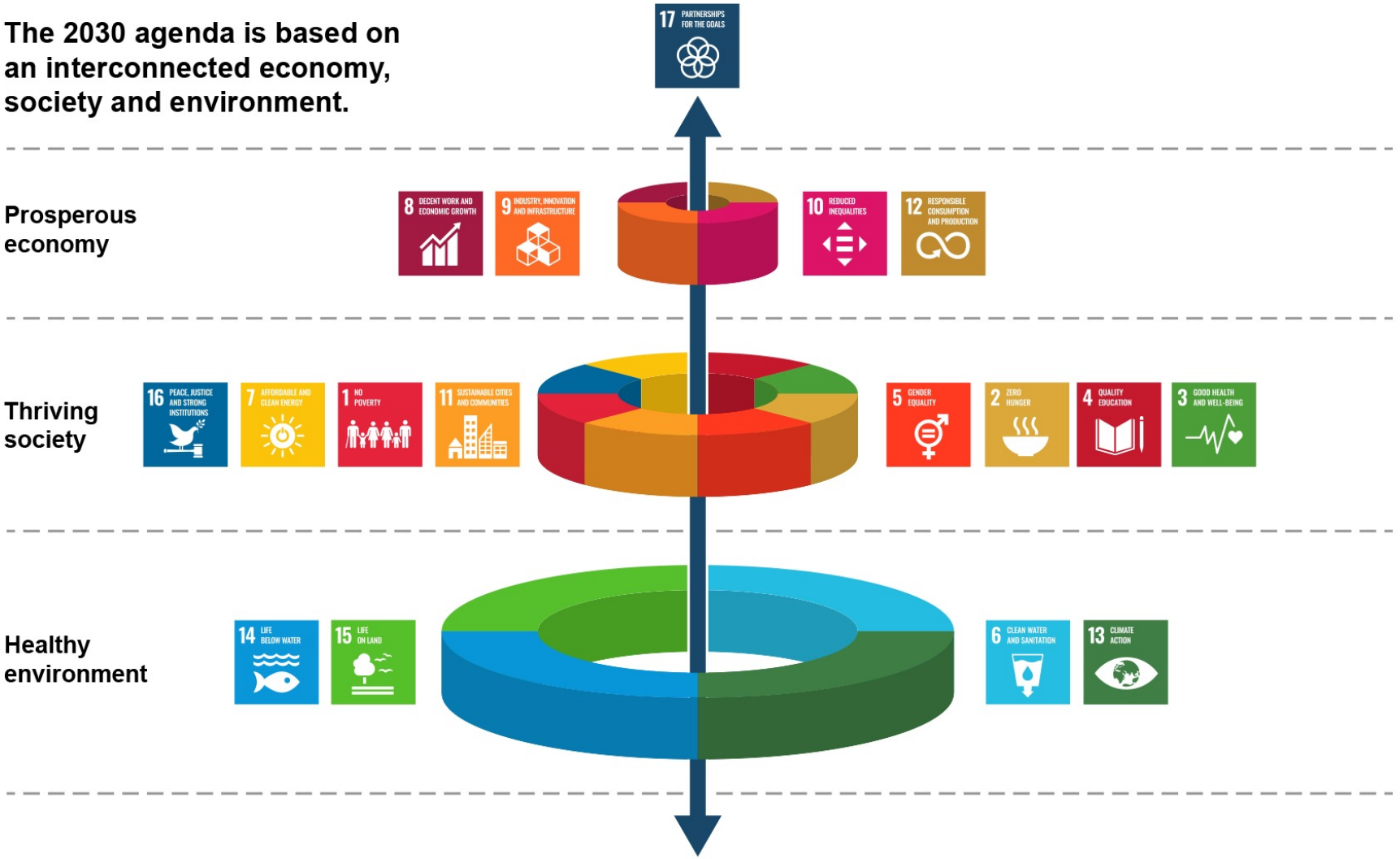


Weak sustainability



Strong sustainability



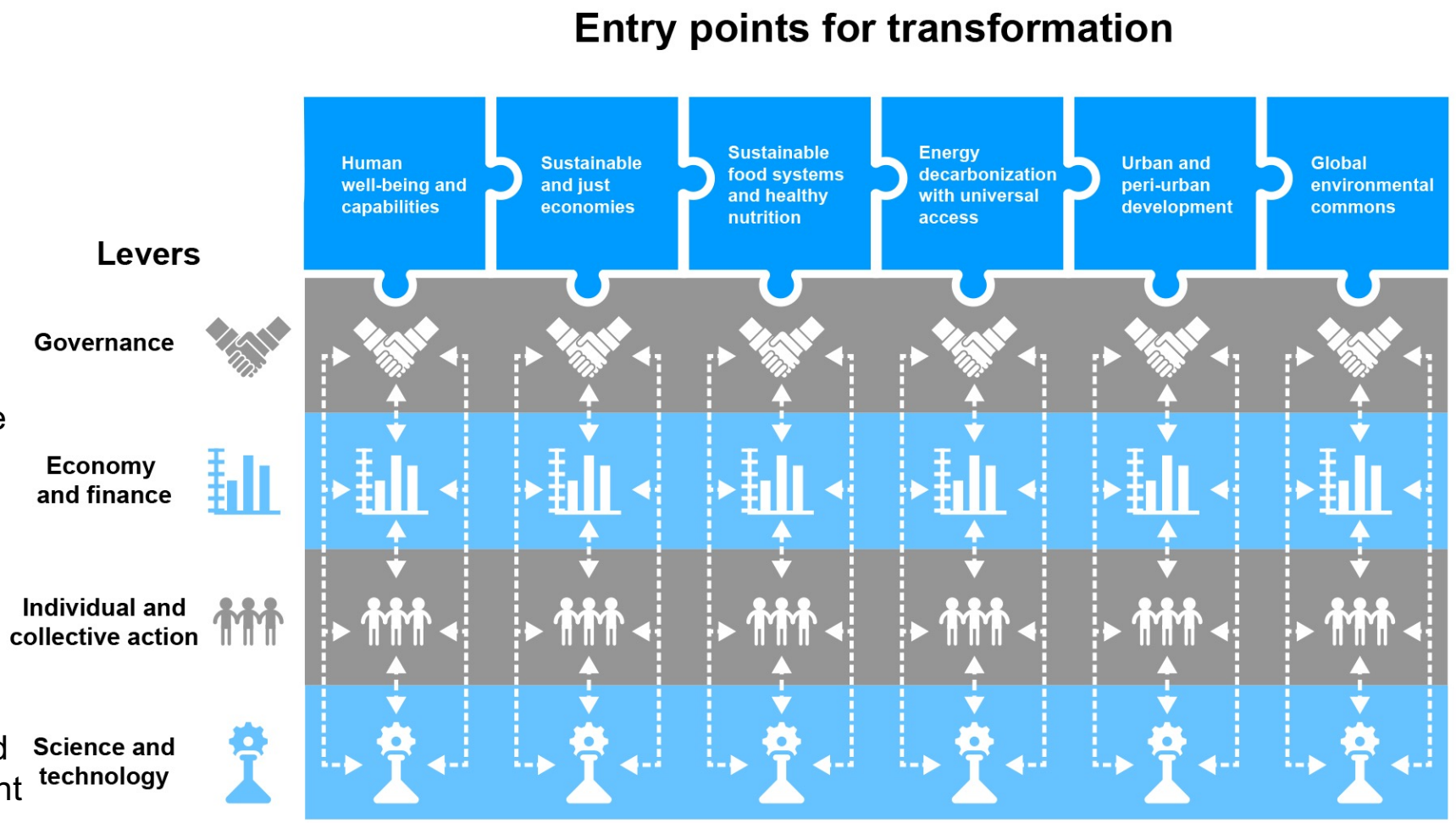


The United Nations Agenda 2030 Sustainable Development Goals (SDGs) according to Rockström and Sukhdev (Stockholm Resilience Centre 2016). Ecological sustainability is the foundation on which global sustainability is built.

According to the UN (2019), we have to transform six entry points (systems) in order to drive change towards a more sustainable society:

Global environmental commons, Sustainable and just economies, Sustainable food systems and healthy nutrition, Energy decarbonization with universal access, Human well-being and capabilities, Urban and peri-urban development

Multiple levers are needed for transformation.



Entry points of transformation towards a more sustainable society, identified by the United Nations, Independent Group of Scientists appointed by the Secretary-General (2019). Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development, United Nations, New York. https://sustainabledevelopment.un.org/gsdr2019

KESTÄVYYSKURSSI / SUSTAINABILITY COURSE / HÅLLBARHETSKURS / SUST-001 / SUST-001B

AT THE UNIVERSITY OF HELSINKI

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- New strategic plan: The theme of sustainability is to run through all of the University's educational offerings. This means making sustainability expertise part of discipline-specific knowledge and skills as well as generic expert skills
- A new multidisciplinary course for all students of the University of Helsinki
- Co-developed with 160+ members of the university community (students, teachers, researchers & other staff) from all faculties in semester 2020–2021
- Online-course (MOOC), 3 ECTS common part (open now) + 2 ECTS discipline-specific part (in development), bachelor level course
- Currently mostly in English, will be translated into Finnish and Swedish
- A second pilot in period II (autumn 2021), with 240 students from 89 degree programs studying the Sustainability Course at the University of Helsinki, next time in period IV (spring 2022)

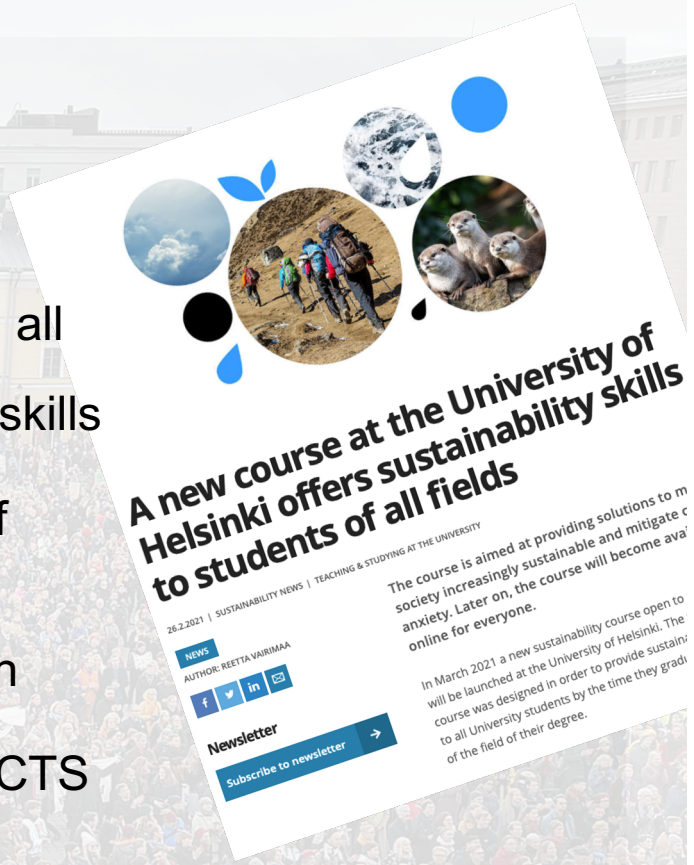

Image: Climate Strike demonstration at the Senate Square in Helsinki, 2018. Photo: Marit Henriksson. Creative Commons Attribution-Share Alike 4.0 International license.

SUSTAINABILITY COURSE (3 ECTS) LEARNING OBJECTIVES

AFTER COMPLETING THE SUSTAINABILITY COURSE YOU...

- Have become acquainted with the complexity and multidisciplinarity of sustainability issues and the ethical and philosophical dimensions of sustainability.
- Understand the changes, and the related processes, phenomena and potential solutions to sustainability challenges related to course themes. You have become acquainted with the themes and in more depth with one of six themes: a) Global environmental commons, b) Human well-being and capabilities, c) Sustainable and just economies, d) Sustainable food systems and healthy nutrition, e) Climate change and just energy transitions f) Urban and peri-urban development.
- Have considered your roles as experts, actors and members of society in solving sustainability issues and have been given tools for solutions.
- Are able to discuss sustainability-related questions in an empathetic and constructive manner and understand other people's viewpoints and be able to take them into account.
- Can apply knowledge and skills related to sustainability in multidisciplinary project work and as experts in your field.

SUST-001 SUSTAINABILITY COURSE (3 ECTS) COURSE STRUCTURE

1. INTRO: Sustainability as a concept, the complexity of sustainability challenges and systemic approach

2. SOLUTIONS to sustainability challenges

Ongoing changes and new perspectives

Causes of change:
underlying processes and phenomena

Solutions to theme-specific sustainability challenges

THEMATIC MODULE A.	THEMATIC MODULE B.	THEMATIC MODULE C.	THEMATIC MODULE D.	THEMATIC MODULE E.	THEMATIC MODULE F.
Global environ-mental commons	Human well-being and capabilities	Sustain-able and just economies	Sustain-able food systems and healthy nutrition	Climate change and just energy transitions	Urban and peri-urban develop-ment

PROJECT WORK: Completing, presenting and evaluating the Sustainability solutions project assignment

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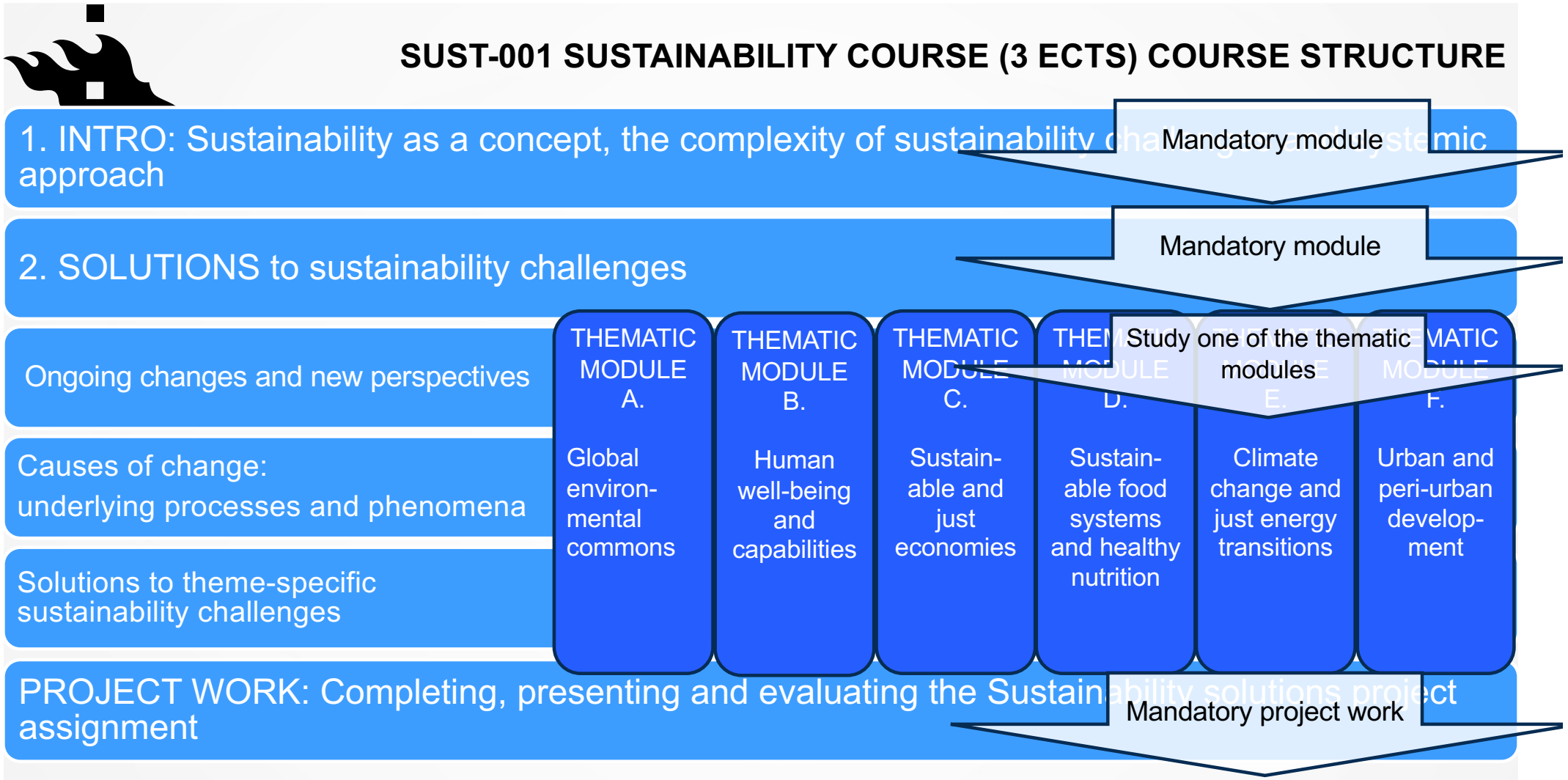
Thematic module framework (module names) is based on:
United Nations, Independent Group of Scientists appointed by the Secretary-General (2019). Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development, United Nations, New York. https://sustainabledevelopment.un.org/gsdr2019

SUST-001 SUSTAINABILITY COURSE (3 ECTS) COURSE STRUCTURE



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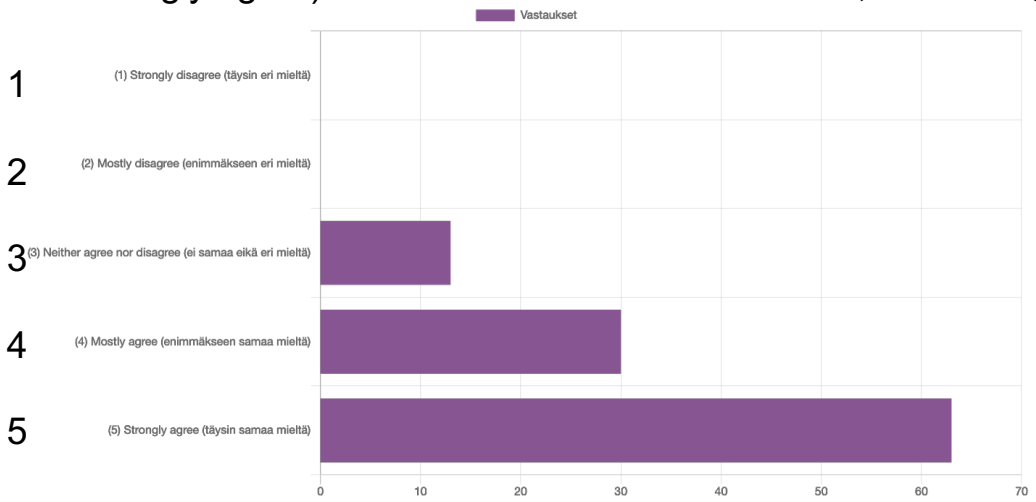
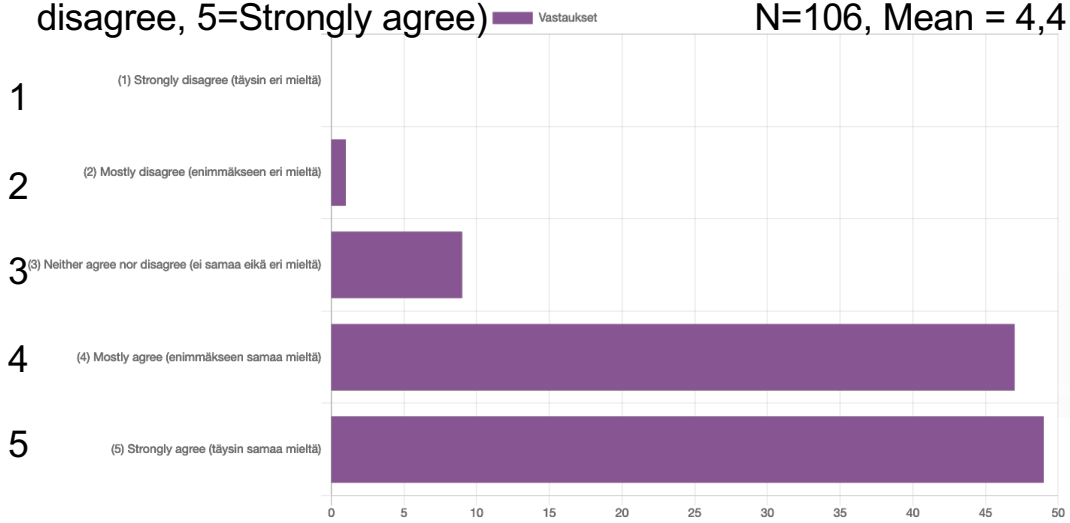
United Nations, Independent Group of Scientists appointed by the Secretary-General (2019). Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development, United Nations, New York. https://sustainabledevelopment.un.org/gsdr2019

I would recommend the course for others. (1=Strongly disagree, 5=Strongly agree) N=106, Mean = 4,5



On the whole I am satisfied with the course. (1=Strongly disagree, 5=Strongly agree) N=106, Mean = 4,4



STUDENT FEEDBACK IN A NUTSHELL: FINAL FEEDBACK SURVEY, PILOT 2 (AUTUMN 2021)

- Approx. 50% of the students who took the course completed it.
- Students from 89 degree programmes registered for the course
- 88% of the respondents would recommend the course for others. (strongly or mostly agree)
- 91% of the respondents are satisfied with the course (strongly or mostly agree)
- Students found course modules mostly understandable, interesting and appropriate in terms of workload, development work continues.

THE PREVIEW VERSION OF THE SUSTAINABILITY COURSE IS NOW OPEN – WELCOME TO GET ACQUAINTED WITH THE LEARNING MATERIAL

- https://www2.helsinki.fi/en/news/sustainability-news/the-preview-version-of-the-sustainability-course-is-now-open-welcome-to-get-acquainted-with-the-learning-material

SUSTAINABILITY COURSE (3 ECTS + 2 ECTS) IN CURRICULUM DESIGN

- The curriculum can include the Sustainability course (SUST-001, 3 ECTS) as either discipline-specific studies or general studies.
- The curriculum can also include a course worth five credits designed by the degree programme, which includes the knowledge and skills provided by SUST-001 (3 ECTS) and a discipline-specific component worth two credits. These courses can be either compulsory or optional in the curriculum
- Some faculties are already planning a joint course in cooperation between degree programs or other faculties

EXAMPLE OF PLANNING A 2 ECTS DISCIPLINE-SPECIFIC SUSTAINABILITY COURSE COMPONENT TOGETHER AS A JOINT PROJECT OF SEVERAL DEGREE PROGRAMMES (AUTUMN 2021, FACULTY OF PHARMACY)

Kestävyyskurssi
SUST-001
3 op

- Kaikille HY:n opiskelijoille
- Monitieteinen MOOC
- Pilotti keväällä 2021

Tieteenalakohtainen opintojakso
2 op

- Yhteistä kurssia täydentämään
- Toteutus tiedekuntien vastuulla
- Valinnainen

Suunnittelu käynnistynyt elokuussa 2021 yhteistoteutuksena

- Eläinlääketieteen koulutusohjelma
- Farmaseutin koulutusohjelma
- Hammaslääketieteen koulutusohjelma
- Lääketieteen koulutusohjelma
- Proviisorin koulutusohjelma
- Master's Programme in Pharmaceutical Research, Development and Safety

More information: Ilkka Miettinen / Faculty of Pharmacy
https://researchportal.helsinki.fi/en/persons/ilkka-miettinen

VIDEO: PROF. RODRIGO LOZANO: HOW TO EMBED SUSTAINABILITY INTO OUR UNIVERSITY TEACHING? (6 MIN 35 SEC)

During watching the following video, reflect, how the study program you represent, can support students' sustainability competencies and promote sustainability in general?

http://blogs.helsinki.fi/uhsustained/
https://youtu.be/hq3SkT3RJcg

HANDS-ON AND SHARING THE BEST PRACTICES

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DISCUSSION ABOUT THE BEST PRACTICES IN SMALL GROUPS, APPROXIMATELY 20 MINS

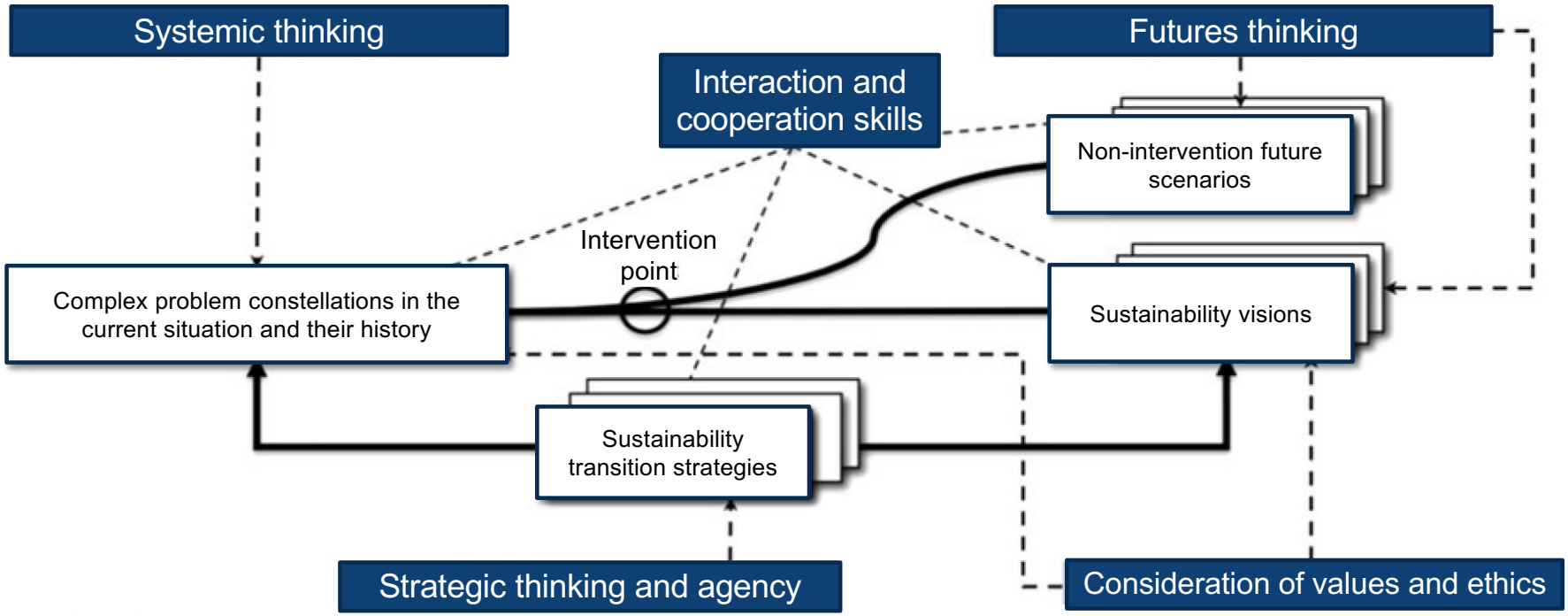
- Breakout rooms in groups of 4-5 participants.
- Take a short introduction round: Who are you and e.g. which study program you represent?
- Open the Flinga link and share the screen: https://edu.flinga.fi/s/EKPABJJ
- Discuss and write in Flinga:
  - To the middle of the Flinga area:
  - *How your degree program can contribute to sustainability? You may think of what sustainability related knowledge, skills, values and attitudes student graduating from your discipline in 2026 has?*
  - To the around in the Flinga area:
    Which kinds of changes are needed in your study program to be able educate sustainability experts in your discipline?
- Prepare to sum up the main points for the general discussion.
- *Recording will be paused during the group work.*

WRAPPING-UP THE GROUP WORK

- Flinga: https://edu.flinga.fi/s/EKPABJJ
- Sum up the main points from your discussion*:*
  - *How your degree program can contribute to sustainability? You may think of what sustainability related knowledge, skills, values and attitudes student graduating from your discipline in 2026 has?*
  - *Which kinds of changes are needed in your study program to be capable to educate sustainability experts in your discipline?*

HOW SUSTAINABILITY SKILLS ARE LINKED TO SOLVING SUSTAINABILITY CHALLENGES, SUCH AS BIODIVERSITY CRISIS, CLIMATE CHANGE OR GLOBAL INEQUALITY?

Example of a problem-solving framework for the sustainability challenges (Wiek et al. 2011)



EXAMPLES HOW TO DESIGN AND VISUALIZE THE "SUSTAINABILITY TRACK" IN THE COURSE AND STUDY PROGRAM LEVELS

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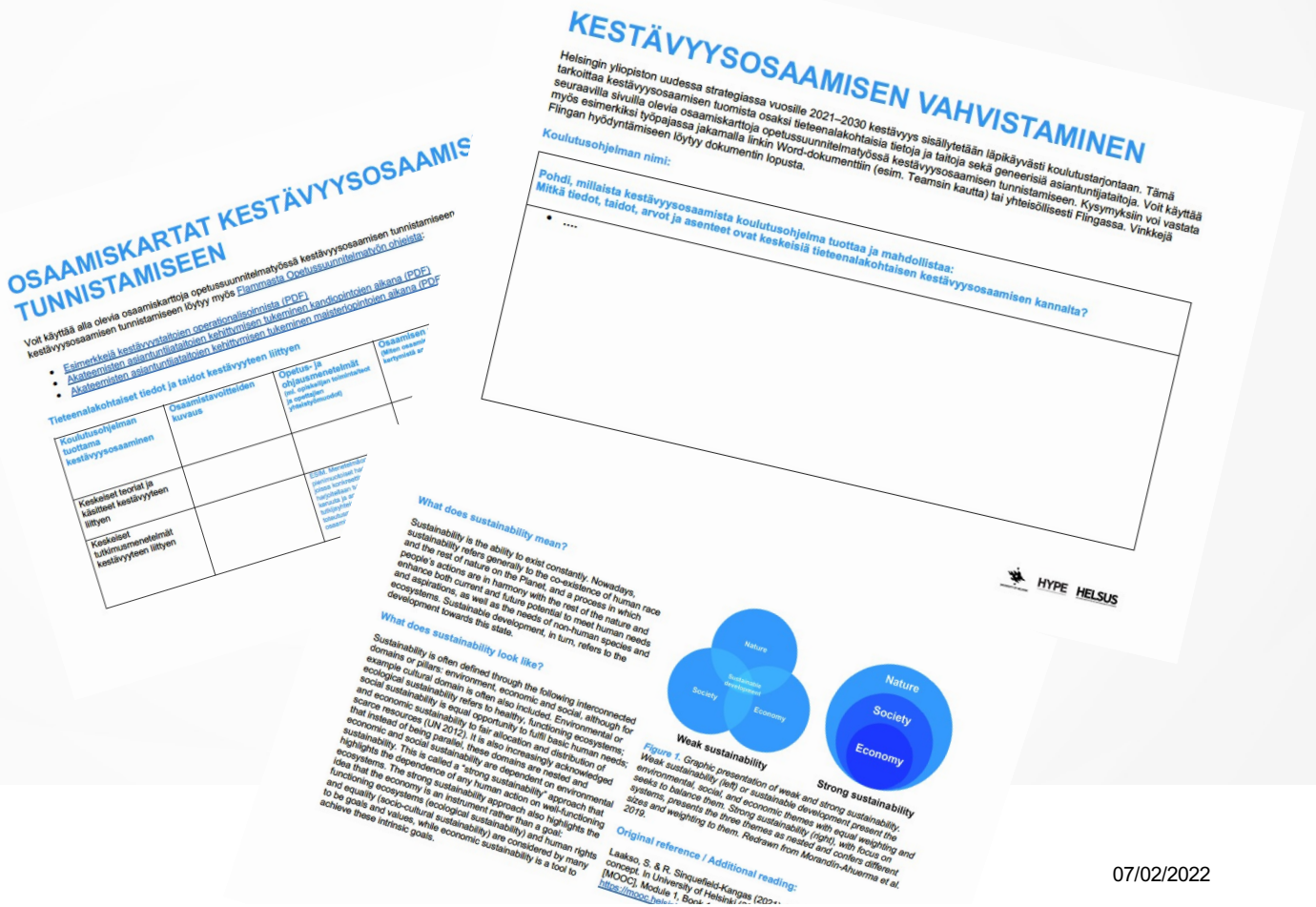
IDENTIFYING SUSTAINABILITY COMPETENCIES PROMOTED BY YOUR DEGREE PROGRAM

- When identifying and writing the sustainability competencies in your own degree program, you may use a so called "competence map" -tool.
- You can e.g. share the document in Flinga or Teams for your community to work collaboratively.
- Link for uploading the materials and instructions (currently in Finnish, English version published soon): https://blogs.helsinki.fi/uhsustained/



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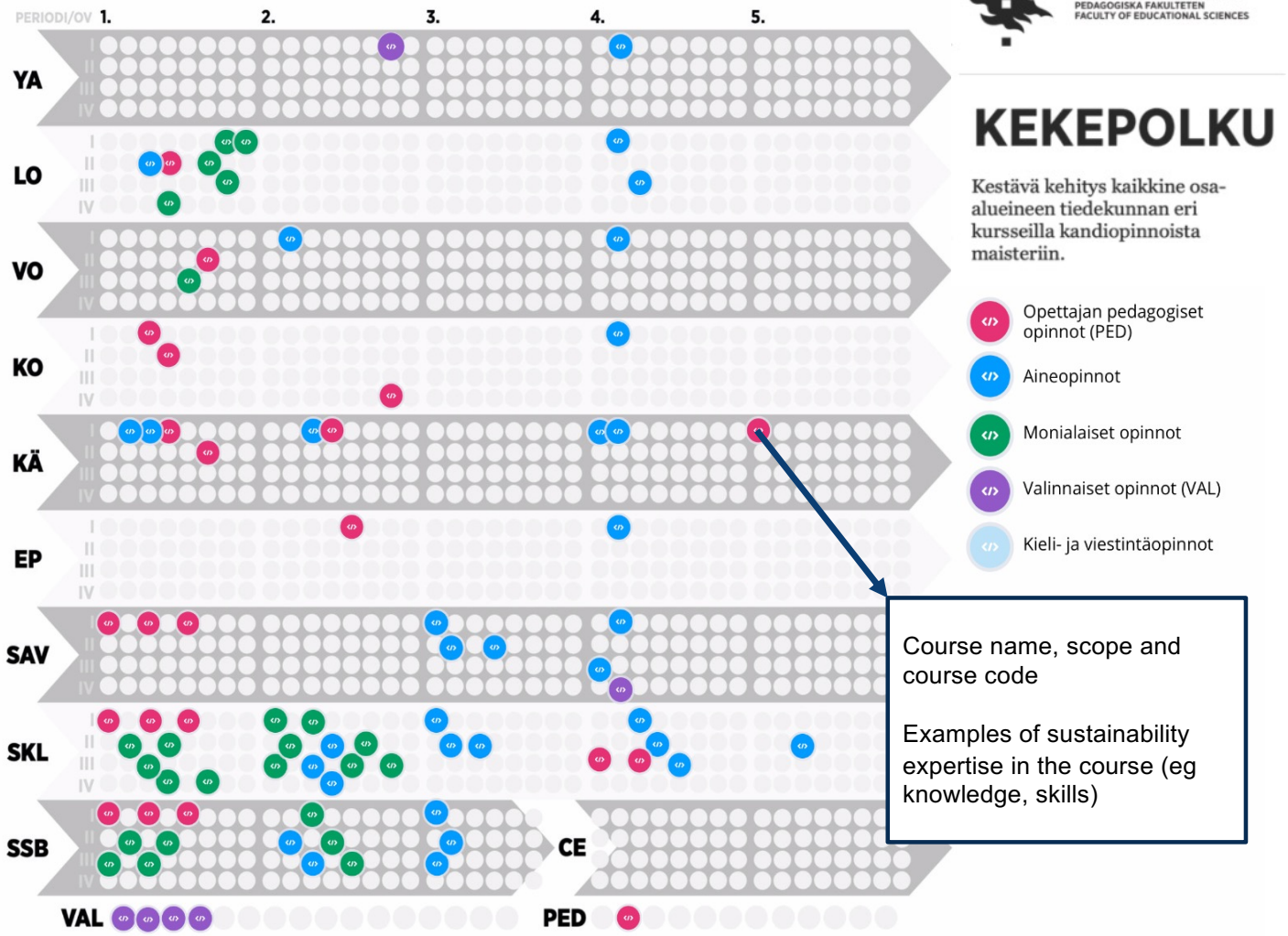
07/02/2022

EXAMPLE OF THE VISUALIZATION OF THE "SUSTAINABILITY TRACK" IN ONE FACULTY

Example: Visualization of the sustainability track. Sustainable development in the various fields of study / specialist options of the faculty, from bachelor's degree to master's degree.

- Adapted from Digipolku/ Digipath presentation: (Kalle Juuti, Tiina Korhonen, Milla Kruskopf)
- Data on the courses were compiled into Excel using an e-form and with the assistance of Education planners. The graphic designer visualized the data using the genial.ly service. https://view.genial.ly/5ff30445485b460cf9c7a59d/interactive-image-kt-digipolku
- https://blogs.helsinki.fi/digiloikka/kasvatustieteiden-maisteriohjelma/



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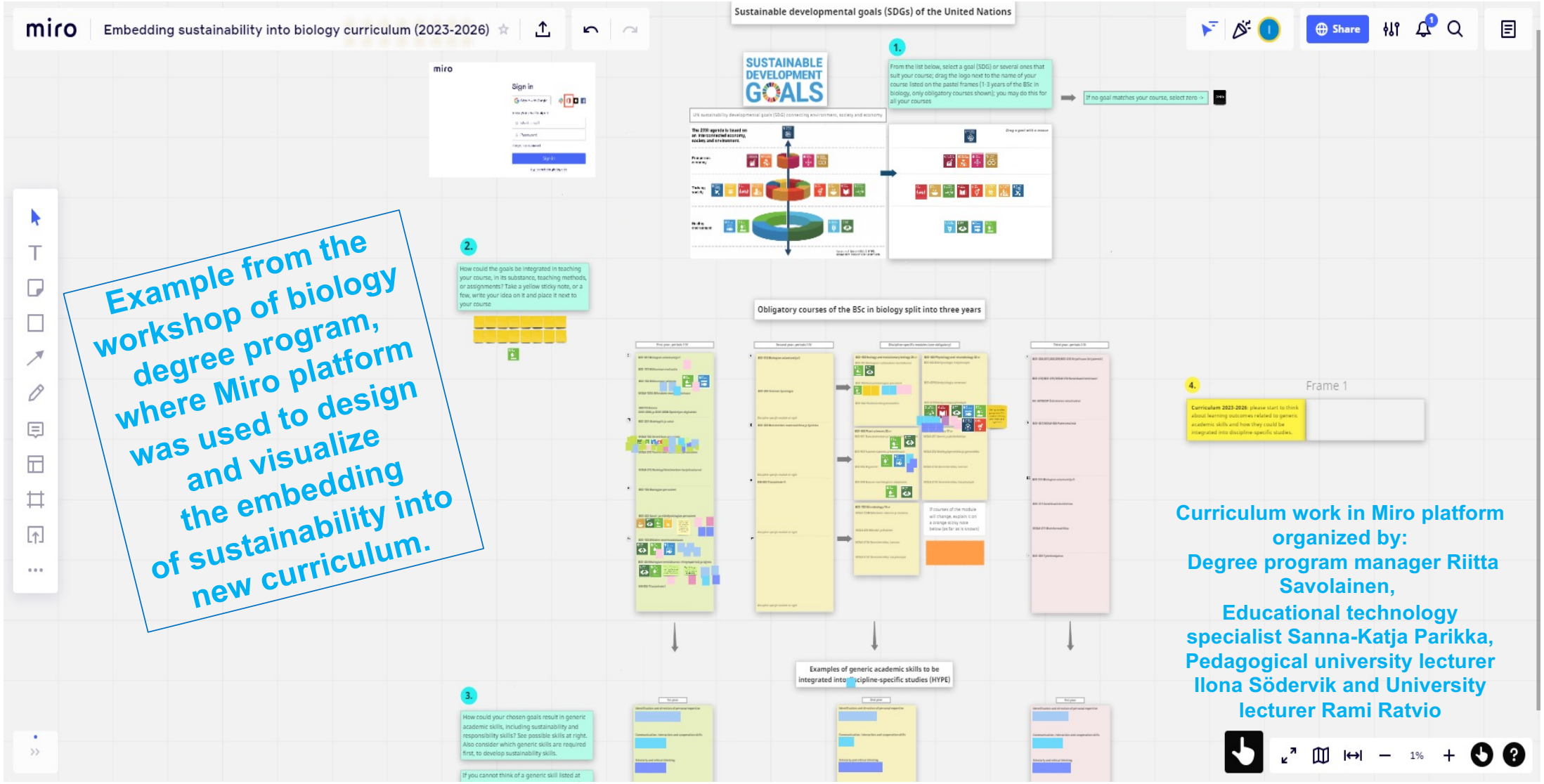
miro
Embedding sustainability into biology curriculum (2023-2026)
Share
Sustainable developmental goals (SDGs) of the United Nations
SUSTAINABLE DEVELOPMENT GOALS
1.
2.
Obligatory courses of the BSc in biology split into three years
Examples of generic academic skills to be integrated into discipline-specific studies (HYPE)
3.
4.
Frame 1
Example from the workshop of biology degree program, where Miro platform was used to design and visualize the embedding of sustainability into new curriculum.
Curriculum work in Miro platform organized by:
Degree program manager Riitta Savolainen,
Educational technology specialist Sanna-Katja Parikka,
Pedagogical university lecturer Ilona Södervik and University lecturer Rami Ratvio

SUPPORT FOR CURRICULUM DESIGN IN SPRING 2022

- Several general curriculum workshops will be organized, where support is offered for various topics:
  - Tue 15.2.2022 at 10.15-12, registration in Lyyti
  - Fri 11.3.2022 at 12.15-14, registration in Lyyti
    - The workshops will feature 2-3 expert-led sessions on different topics. Participants are free to choose which sessions to attend. Some sessions are held in Finnish only, some in English only and some are held in Finnish or English, depending on the needs of the participants.
- Information on workshop sessions in Flamma.
- Support material in our blog: Educating Sustainability Experts: https://blogs.helsinki.fi/uhsustained/
- Flamma: https://flamma.helsinki.fi/en/group/opetuksen-tuki/opetussuunnitelma

THANK YOU!

QUESTIONS OR COMMENTS?

LINK FOR WORKSHOP MATERIALS:
https://blogs.helsinki.fi/uhsustained/

FEEL FREE TO GIVE FEEDBACK VIA CHAT OR EMAIL!

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