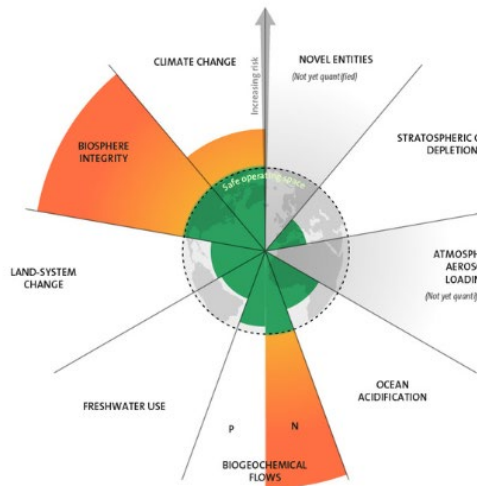
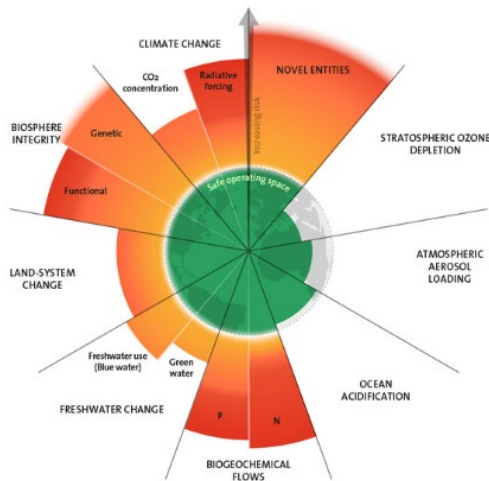


2009



7 boundaries assessed,  
3 crossed

2023



9 boundaries assessed,  
6 crossed

*Richardson et al. 2023*

# Sustainability in my research

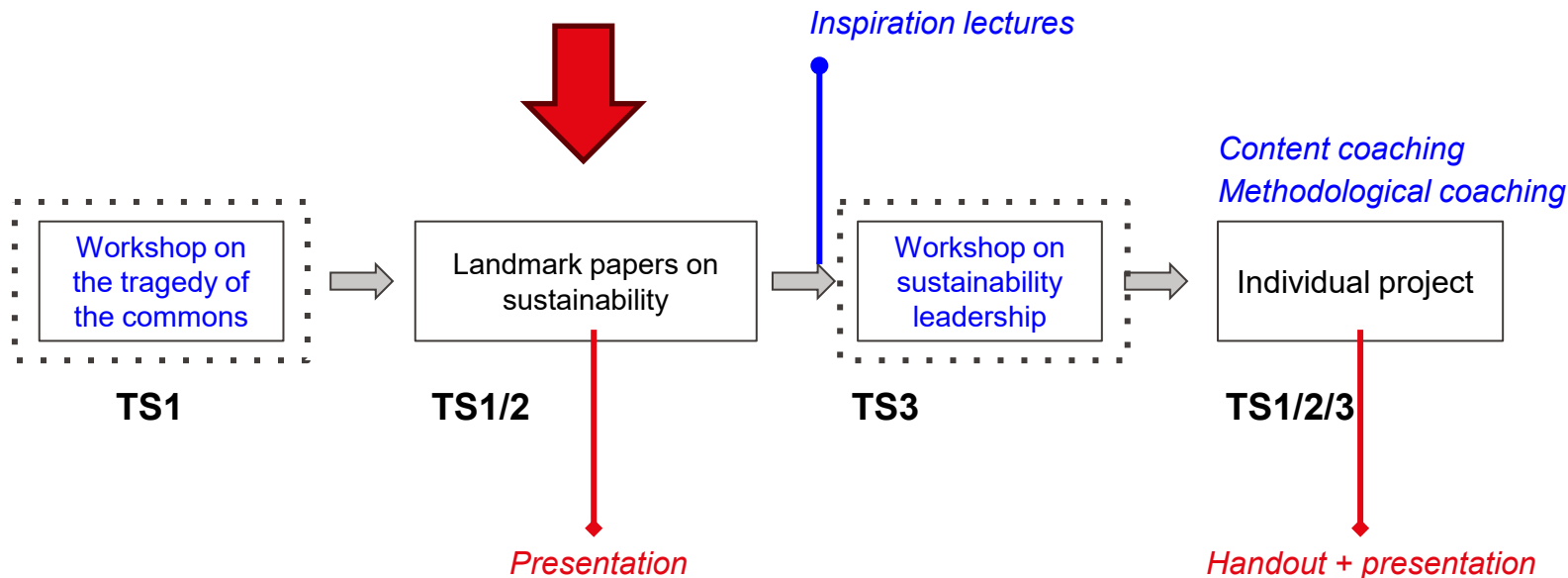
ENG-650

Jacopo Grazioli  
Mélanie Studer  
Michka Melo  
Joan Suris  
Juliane Miani

# Calendar

September			
12	<a href="#">AAC106</a>	13:00 – 17:00	Introduction to the course. Serious game on the tragedy of the commons. Introduction of the next assignment: journal club
30	<a href="#">CM1113</a>	10:00 – 15:45	Journal club presentations on sustainability landmark papers
October			
01	<a href="#">CM1113</a>	9:15 – 17:00	<b>Morning (9:15 – 12:00)</b> Presentation: Sustainability in Research Practices Presentation: Scientists facing Anthropocene <b>Afternoon (13:30 – 17:00)</b> Introduction of the next assignment: final project Sustainability leadership workshop
November			
28	-		Hand-in individual project deadline
December			
03	<a href="#">CM1113</a>	9:15 – 17:00	Final presentation of the projects

# Course structure



*In red: deliverables*

*In blue: contact/class*

work blocks

larger audience

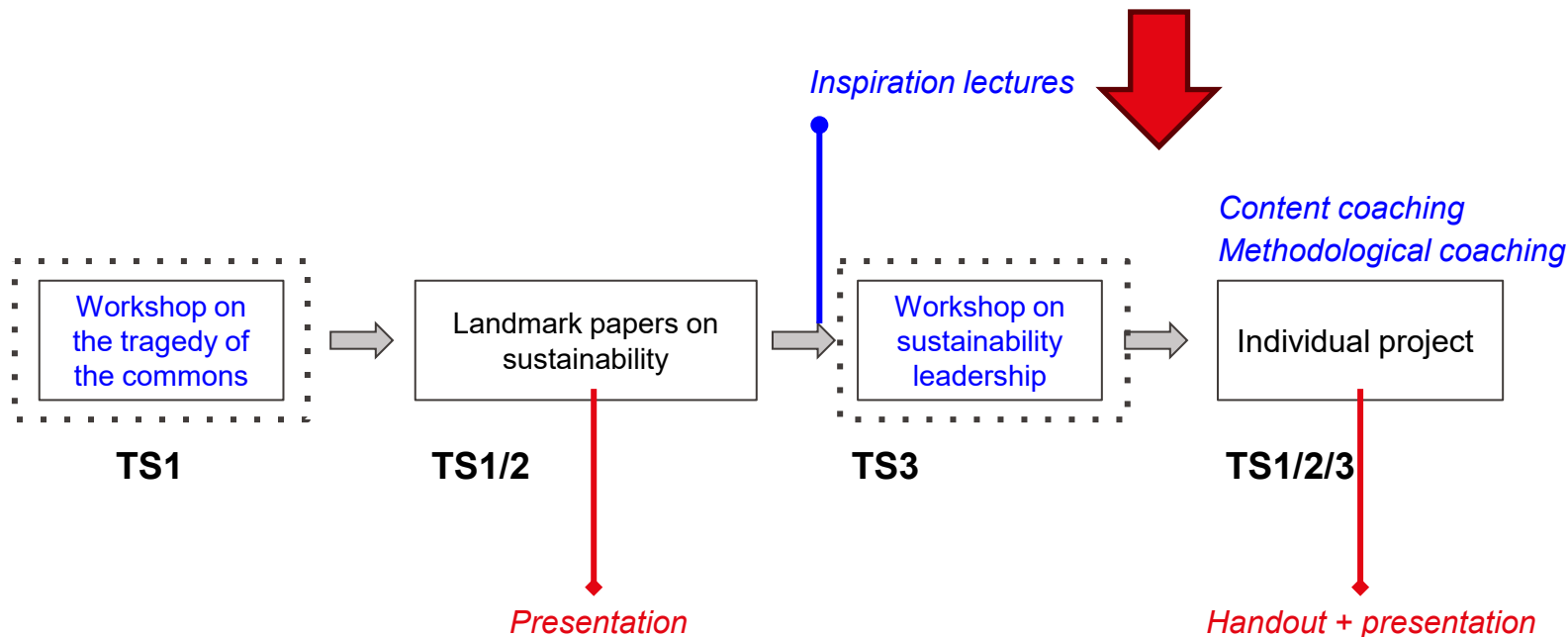
# Journal Club schedule

TIME SLOT	Group	Paper
10:00 / 10:30	Anupam Naveen	<a href="#">Earth beyond six of nine planetary boundaries</a> , Richardson et al, 2023
10:35 / 11:05	Cédric Kanaha	<a href="#">A good life for all within planetary boundaries</a> , O'Neill et al 2018
15' Break		
11:20 / 11:50	Gabriele Manon	<a href="#">Biodiversity conservation threatened by global mining wastes</a> , Aska et al. 2023
11:55 / 12:25	Beatriz Kristina Shyam	<a href="#">The Water Planetary Boundary: Interrogation and Revision</a> , Gleeson et al 2020
Lunch break		
14:00 / 14:30	Claire Sanjay	<a href="#">Food Security: The Challenge of Feeding 9 Billion People</a> , Godfray et al 2010
14:35/15:05	Emily Noémie	<a href="#">Online misinformation about climate change</a> , Treen et al 2019
15:10/15:40	Arthur Mustafa	<a href="#">Understanding the Complexity of Economic, Ecological, and Social Systems</a> , Hollings, 2001



Thank  
you !

# Course structure



*In red: deliverables*

*In blue: contact/class*

work blocks

larger audience

## Project content

Develop a reflection following one of the two axes below (A and B), or both if relevant and possible.

- A. Identify and prioritize a list of measures you could implement in your current research to make it more sustainable. Back your list and priorities with evidence.
- B. Define a sustainability-related research questions you could explore within or after your PhD. Defend, with supporting evidence, how it could contribute to solve a sustainability-related issue.

## Transversal skills focus and guiding questions

Capacity to think in systemic manner	Can you draw/describe «your» system? Which are the powerful levers and how do you act on them? What are the main blockages and how do you plan to address them?
Ability to summarize and prioritize	Why are you focusing on this topic? (impact / simplicity / system levers) What are the (max 5) key points of your project? Your prioritization should be based on reliable facts and sources.
Communication to a diverse audience	What does your audience need to know about your field of research or your research activities, <b>before</b> you go into the details of your project?

## Deliverables

- **2/3-pages written** synthesis (deadline for submission: 28 Nov). You are welcome to go further if it is interesting and useful for your future.
- **10' final presentation** + discussion

## Resources

You are encouraged to reach out to the **teachers and to the coaches** to discuss about methodology, transversal skills as well as about specific technical and scientific topics. We recommend at least one discussion during the development of the project.





## Charlotte Weil

Team lead, ENAC computer services, EPFL-ENAC

Environmental researcher and data scientist, leads a technical team of data and software engineers [ENAC-IT4R](#), to support researchers and build open-source software and data tools for researchers in the sustainability domains.

Their work include for example the development of a greenhouse gas (GHG) calculator for refugee camps in collaboration with UNHCR or other projects serving both researchers and the general public.

Previously at Stanford University (California), she contributed to the implementation of an open-source software for ecosystem services modeling widely used by researchers and landscape stakeholders globally.

**Expertise:** Research IT, open research data, open-source software, open science, data science, ecosystem services

**Contact:** [charlotte.weil@epfl.ch](mailto:charlotte.weil@epfl.ch)

**Joan Suris**

Sustainability Officer, EPFL - SV

Joan is head of the Sustainability Office in the School of Life Sciences, working with scientists, students and admin staff to build a more sustainable university and particularly focused on estimating and lowering the carbon footprint of our research labs.

Joan has a background of Environmental Sciences and Engineering at EPFL and ETH and he worked also in the fields of consulting for sustainable finance as well as sustainability risk analysis.

**Expertise:** Carbon footprint / LCA / Green labs

**Contact:** [joan.suris@epfl.ch](mailto:joan.suris@epfl.ch)



## **Manuel Cubero-Castan**

Project manager, Sustainable IT, EPFL Sustainability office

Sustainable IT covers the environmental and social impact of IT in research and in IT operations (data center, network, etc.) on campus + sensibilization of these topics on all EPFL community. An example about how Manuel could support you could be to measure environmental impact of IT for your publication or research topic both due to software and hardware components (simulation time, terminal manufacturing and use, etc.).

Manuel has a PhD in hyperspectral thermal infrared image processing as well as industrial experience as system engineer, DevOPS and remote sensing applications.

**Expertise:** Sustainable IT / responsible computing

**Contact:** [manuel.cubero-castan@epfl.ch](mailto:manuel.cubero-castan@epfl.ch)

**Juliane Miani**

Sustainability Project Officer, EPFL - SV

Amongst other projects, Juliane leads the development of an online carbon footprint calculator for research laboratories and core facilities, conducts a life cycle assessment (LCA) of the animal facility on campus to analyze its environmental impacts, collaborates with EPFL's procurement department and suppliers to reduce the environmental footprint of lab purchases, and develops an e-learning for green labs best practices.

She received her degree in Sustainability and Environmental Management from Harvard University after working as an architect for several years.

**Expertise:** Carbon footprint / LCA / Green labs

**Contact:** [juliane.miani@epfl.ch](mailto:juliane.miani@epfl.ch)



**Tomoko Muranaka**  
Sustainability Officer, EPFL - SB

Tomoko Muranaka is the sustainability officer for the school of basic sciences (SB) at EPFL and Co-Chair of the Energy and Sustainability Section of the Swiss Physical Society. She has extensive experience in sustainability strategy, research project management, and fundamental research.

Her background includes roles as a fellow at CERN and postdoctoral researcher at Uppsala University and CEA (Commissariat à l'énergie atomique et aux énergies alternatives). She holds both a Master's in Environmental Science from the University of Geneva and a Ph.D. in Atomic/Molecular Physics from Université de Caen Normandie.

**Expertise:** Physics / Chemistry / Energy research

**Contact:** [tomoko.muranaka@epfl.ch](mailto:tomoko.muranaka@epfl.ch)



## Adélie Garin

Project leader Sustainability Education + Transversal Skills Center

Mathematician by training, Adélie holds a PhD in Mathematics obtained at EPFL. Her work focused on inverse problems in topology and geometry, with applications in neuroscience. She lectured at EPFL on large first year courses and worked for their coordination

Interested since many years about exploring the links between mathematics, sustainability and education, she is now project manager at [the Sustainability Education team](#) and in the [Transversal Skills Center](#) with a particular focus on the link between transversal skills and sustainability.

**Expertise:** Mathematics, System Thinking, Transversal Skills

**Contact:** [adelie.garin@epfl.ch](mailto:adelie.garin@epfl.ch)





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Caroline  
Electrical Engineering  
(edoc), EDOC



Bhati Naveen  
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Bright Kristina  
Civil and Environmental  
Engineering (edoc),  
EDOC



Terrier Cédric  
Energy (edoc), EDOC



Venkatachalam Sanjay  
Chemistry and Chemical  
Engineering (edoc),  
EDOC



Yalcinkaya Mustafa Onur  
Materials Science and  
Engineering (edoc),  
EDOC



Bueno Mourão Beatriz  
Chemistry and Chemical  
Engineering (edoc),  
EDOC



Chuat Arthur  
Energy (edoc), EDOC



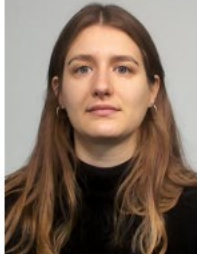
Gambardella Gabriele  
Biotechnology and  
Bioengineering (edoc),  
EDOC



Jeannin Noémie  
Energy (edoc), EDOC



Jena Anupam  
Energy (edoc), EDOC



Pribille Manon Laetitia  
Civil and Environmental  
Engineering (edoc),  
EDOC



Shoji Kanaha  
Civil and Environmental  
Engineering (edoc),  
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Sirimalla Shyam Sunder  
Architecture and  
Sciences of the City  
(edoc), EDOC