CHARM-EU
CHallenge-driven
Accessible
Research-based
Mobile
European
University

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CHARM-EU (CHALLENGE-DRIVEN, ACCESSIBLE, RESEARCH-BASED AND MOBILE EUROPEAN UNIVERSITY)

DELIVERABLE D4.2– CHARM-EU: PROGRAMME STRUCTURE AND CONTENT CREATION GUIDELINES

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DOCUMENT HISTORY

Date	Revision No	Prepared By	Description
01/06/2021	Final	Annet van der Riet	Collation of all module descriptors

Introduction and document aim

This document collates the module descriptors for the MSc in Global Challenges for Sustainability. Withing these descriptors the following details are provided, which describe the overall programme structure:

- Module details
- Module design and content
- Module high-level learning aims:
- Connection with other phases and modules:
- Module Learning Outcomes
- Types of learning activities
- Study materials
- Mobility activity in the module
- Module timetable (CET time)
- Literature/reading list
- Assessment

A total of nine module descriptors are provided for:

- Sustainability
- Social Innovation
- Transdisciplinary Research Methods
- Extremes in the Water Cycle and Their Complex Consequences
- Adaptation Measures and Strategies in Water Management
- Resilient Cities: Water in Urban Environments
- The Food-Health-Environment Nexus
- Food Systems and their Transformations
- Socially Just and Sustainable Food Systems
- Health systems and policies
- Health challenges
- Healthy lives and wellbeing
- Capstone

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Student Module Descriptor

Preparatory Phase (Semester 1)

Transdisciplinary Research

Universitat de Barcelona · Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin · Utrecht University · Eötvös Loránd University | Budapest · Université de Montpellier

Module details

Module title: Transdisciplinary Research

Module coordinator: Dr. Jake Rowan Byrne
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(Trinity College Dublin)

Module deputy: Dr. Sergio Villanueva (University of Barcelona)
Dr. Gabor Zemplen (Eötvös Loránd University)

Teachers: Dr. Jake Byrne (Trinity College Dublin), Dr. Sergio Villanueva (University of Barcelona), Dr. Quentin Crowley (TCD), Prof. Catherine Comiskey (TCD), Dr. Sonam Banka (TCD), Dr. Silvia Gallagher (TCD), Dr. Harun Siljak (TCD), Dr. Santi Segui (UB), Dr. Itziar De Lecuona (UB), Sarah Bowman (TCD), Dr. Barnabas Szaszi (ELTE), Prof. Maria Angeles Garcia (UB).

Start date – end date: 06 September 2021 – 4 February 2022
Assessments: 13

Module design and content

Module high-level learning aims:

Students will develop an advanced understanding of transdisciplinarity to enable them to work in a transdisciplinary/multidisciplinary team. They will be able to demonstrate a critical appreciation of the challenges of integrating different disciplinary and transdisciplinary approaches and research methodologies, of ethical and judicious data creation, discovery and utilisation and assess for specific complex challenges how to master data as a tool for problem identification and solution building.

Connection with other phases and modules:

Module Learning Aims:
Students will develop an advanced understanding of transdisciplinarity to enable them to work in a transdisciplinary/multidisciplinary team. They will be able to demonstrate a critical appreciation of the challenges of integrating different disciplinary and transdisciplinary approaches and research methodologies, of ethical and judicious data creation, discovery and utilisation and assess for specific complex challenges how to master data as a tool for problem identification and solution building.

The module has four parts. After an introductory and community-building week where students explore and discuss their perspectives and explore their biases and epistemologies (knowledge claims) to question engrained assumptions and broaden their own perspectives. In this second part, students are introduced to the key concepts of transdisciplinarity, and theoretical as well as conceptual approaches to appraise wicked problems, including systems thinking. In the third part of the module, students learn about the importance of stakeholders engagement in Transdisciplinary Research and are introduced to a variety of research methods that might be suitable for engaging in this type of research. Finally, in the fourth part students will engage with societal as they engage in a group T Transdisciplinary Research project.

Connection with other phases and modules:
Transdisciplinary Research is one of the three compulsory modules in the preparatory phase of the CHARM-EU Master programme in Global Challenges for Sustainability. In this phase, modules focus on core competencies grounded in contemporary issues and approaches in Transdisciplinary Research. In particular, the Transdisciplinary Research module aims at providing an overview of importance of different perspectives and how different research methods and approaches can be used to integrate these perspectives to answer particular research questions, in consultation with societal actors (i.e. stakeholders) when tackling wicked or complex problems/challenges.

This module runs in parallel with Sustainability and Social Innovation. While the Sustainability module provides a solid foundation of knowledge, theories and approaches to study sustainable development issues and challenges. The Transdisciplinary Research module focuses on research methodologies and provides students with opportunities to practice in transdisciplinary/multidisciplinary team to assess global sustainability challenges. In the Social Innovation module, students learn to develop solutions for sustainability transformations. Together, the modules of CHARM-EU's preparatory phase aim to provide students with the facts/knowledge, concepts and models to understand, analyse and address sustainability challenges within their context and to engage them constructively in their solution.

Module Learning Outcomes

- MLO 3.1: Formulate the different steps in a research process, for example: problem statement, conceptual framework, literature review, analysis and critical reflection on research limitations. (PLO 1)
- MLO 3.2: Describe, critically assess and apply quantitative and qualitative research methods through the design of a proposal for conducting quantitative and/or qualitative transdisciplinary research in a team (PLO 3)
- MLO 3.3: Understand the methodological basis of data collection and determine which methods are most appropriate to a well-formulated research question. (PLO 1, 3)
- MLO 3.4: Investigate basics of complex systems theory, methodological problems of modelling Life and the living; emerging technologies of analysis (Big Data). (PLO 3, 4)
- MLO 3.5: Understand basics of social processes, internal and external scientific communication. Identify obstacles to successful solution: individual and group biases (confirmation bias, groupthink, etc.), and factors influencing trust and consensus. Be familiar with potentials and limits of critical thinking/rational decision making. (PLO 5, 6)
- MLO 3.6: Analyse and critically discuss the role of science and the way in which scientific results can be framed and used to the (dis)advantage of different stakeholders. (PLO 1, 2)
- MLO 3.7: Compare and categorise the diverse ethical concerns (algorithmic bias, privacy, transparency, law, gender, environmental and social impacts of research) raised by data collection, analysis, interpretation and communication. (PLO 2, 6)
- MLO 3.8: Apply concepts to evaluate the needed mix of academic and extra-academic actors throughout the entire research process, taking into account environmental and ethical concerns and legal issues. (PLO 2, 5)

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Lecture	Students follow online or hybrid lectures delivered by expert guest teachers.
Tutorial	Students are provided bespoke support to help them with the current assessments and task they have been set
Workshop	Students work in groups to develop specific skills and competencies with the supervision of a teacher and facilitation teams.
Stakeholder meeting	Students engage with extra-academic actors to discuss sustainability challenges and include the perspectives of extra-academic actors within their assignments.
Sharing session	Students share with their peers the findings of their assignments and reflect on their learning trajectory, with the facilitation of a teacher.
Group work	Students work in (hybrid) subgroups, do hands-on research and work on their contribution to group assignments.

Study materials

These materials will be shared in the Virtual Learning Environment:

- hand-outs and reader;
- obligatory literature;
- links to self-study sources;
- literature database;
- links to relevant websites;
- short video clips;
- recommended (optional) literature

Mobility activity in the module

Focus on virtual mobility including Transnational and intercultural learning, no physical mobility in this phase.

Module timetable (CET time)

Week 0: Induction Week (1st – 3rd September 2021)

Week 1: Worldview Journey & Module Logistics

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
7 September 2021, 12.00-13.00 CET	Workshop	Student Preparation - Worldview Café	Student review the UN Sustainable Development Goals and World Café themes to decide which sessions they would like to attend and what questions they might like to ask the external actors and academics who will be present.	1 hr	Dr. Marjanneke Vijge (UU)	Online (MS Teams)
7 September 2021, 14.00-16.00 CET	Workshop	Worldview Café	The World Café approach is a simple and flexible format for hosting group dialogues between students and external actors. It is a creative process for sharing knowledge and creating possibilities for action.	2 hours	Dr. Marjanneke Vijge (UU)	Online (MS Teams)

Week 2*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
14th Sep 10:00-11:00	Workshop	Icebreaker	Get to know your peers perspectives	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
11:00-12:00	Lecture	Epistemologies and wicked problems	Exploring epistemological perspectives in science and knowledge claims with the context of Transdisciplinary approaches to tackling wicked problems	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
12:00-15:00	Workshop	Reflection	Reflect individually and as a group on challenges from week 1 and activity 1	2hr (with lunch break)	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
At end of week students submit personal epistemology statement/reflection (assignment #1)						
Essential readings & other study material: - *Patel, S. (2021). The research paradigm – methodology, epistemology and ontology – explained in simple language – Dr Salma Patel. Retrieved 21 July 2021, from http://salmapatel.co.uk/academia/the-research-paradigm-methodology-epistemology-and-ontology-explained-in-simple-language/* - *McGregor, S. L., & Volckmann, R. (2013). Transversity: Transdisciplinarity in higher education. Leading transformative higher education, 58-81.* - Scholz, R. W., & Steiner, G. (2015). The real type and ideal type of transdisciplinary processes: part I—theoretical foundations. *Sustainability Science*, *10*(4), 527-544.						

Week 3*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
21st Sep 10:00-11:00	Lecture	Systems mapping	Approaches to tackling wicked problems through systems mapping	1hr	Dr. Quentin Crowley (TCD)	In Class /online
11:00-12:00	Tutorial	System mapping review	Revisit challenge form week 1 and discuss what elements might have been left out	1hr	Dr. Quentin Crowley (TCD)	In Class
12:00-14:00	Workshop	Mapping systems	Reflect on challenges from week 1	2hr	Dr. Quentin Crowley (TCD)	In Class
	At end of week students submit **System map for challenge in week 1** (assignment #2)					

Essential readings & other study material (note additional reading listed at the end of this document):

- Arnold, R.D. & Wade, J.P. (2015). A Definition of Systems Thinking: A Systems Approach. Procedia Computer Science, Volume 44, 669-678, DOI: 10.1016/j.procs.2015.03.050. (Open Access)
- Kim, D.H. (1999). Introduction to Systems Thinking. Pegasus Communications, ISBN10 188382334X (out of print but available online). https://static1.squarespace.com/static/535849dae4b0f67f52ae0568/t/5e42d6fbecf987525cb25dfc/1581438716299/Introduction+to+Systems+Thinking.pdf
- *Termeer, C.J.A.M, Dewulf, A., Biesbroek, R. (2019). A critical assessment of the wicked problem concept: relevance and usefulness for policy science and practice, Policy and Society, 38:2, 167-179, DOI: 10.1080/14494035.2019.1617971.*

Week 4*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
28th Sep 10:00-11:00	Lecture	Stakeholders in Transdisciplinary Research	Stakeholders types, roles and perspectives and importance of consideration.	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class /online
11:00-13:00	Tutorial	Reflection	Reflect on stakeholders of week 1 challenge.	2hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
14:00-15:00	Workshop	Role play and Stakeholders mapping exercise	Role play and mapping exercise based on Stakeholders personas' developed in Social Innovation	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
At end of week students submit Stakeholder perspectives/personas and dichotomies and tensions and goal and research questions definition (assignment #3)						
Essential readings & other study material (note additional reading listed at the end of this document): - *Yarime, M., Trencher, G., Mino, T., Scholz, R. W., Olsson, L., Ness, B., ... & Rotmans, J. (2012). Establishing sustainability science in higher education institutions: towards an integration of academic development, institutionalization, and stakeholder collaborations. Sustainability Science, 7(1), 101-113.* - *Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability transitions research: transforming science and practice for societal change. Annual Review of Environment and Resources, 42, 599-626.* - *Gordon, S., & Thomas, I. (2018). 'The learning sticks': reflections on a case study of role-playing for sustainability. Environmental Education Research, 24(2), 172-190.*						

Week 5*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
5th Oct 10:00-11:30	Lecture	Methodologies and methods	Methodologies and methods for Transdisciplinary Research	1.5hr	Prof. Catherine Comiskey (TCD) & Dr. Sonam Banka (TCD)	In Class /online
12:30-13:00	Workshop	Methodologies and Method in practice	Aligning methodologies and methods with challenges from week 1 example	1.5hr	Prof. Catherine Comiskey (TCD) & Dr. Sonam Banka (TCD)	In Class
14:00-15:00	Tutorial	Literature reviews	How to conduct a literature review	1hr	Dr. Silvia Gallagher (TCD)	In Class
At end of week students submit **Draft Research plan including main areas of background reading needed** (assignment #4)						
Essential readings & other study material (note additional reading listed at the end of this document): - *Elizabeth A. Curtis, Catherine Comiskey and Orla Dempsey, Correlational Research: Importance and Use in Nursing and Health Research, Nurse Researcher, 23, 6, 2015, 20 – 25* - *Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research, 104, 333-339.* - *Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. Sage.*						

Week 6*: (Wednesday due to holiday on the Tuesday)

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
13th Oct 10:00-11:00	lecture	Data Complexity, modelling and analysis	Approaches to dealing with data for complex systems	1hr	Dr. Harun Siljak (TCD)/ Dr. Santi Segui (UB)/ Dr. Silvia Gallagher (TCD)	In Class /online
11:00-15:00	Workshop	Data Complexity, modelling and analysis in practice	Exploring data using different approaches – Agent Based modelling – Machine learning – Qualitative research – Discussion (3 x 1hr concurrent sessions)	3hr (with lunch break)	Dr. Harun Siljak (TCD)/ Dr. Santi Segui (UB)/ Dr. Silvia Gallagher (TCD)	In Class
	Optional	https://greenmedia.sites.uu.nl/green-media-at-uu/ecogames-conference-2021/				Online

Essential readings & other study material (note additional reading listed at the end of this document):

- Romanowska, I., Wren, C. D., & Crabtree, S. A. (2021). The Foundational Steps of Building an Agent-Based Model. In Agent-Based Modeling for Archaeology: Simulating the Complexity of Societies (pp. 19–42). Santa Fe Institute. https://www.sfipress.org/books/agent-based-modeling-archaeology
- Pedemonte, V. (2020, February 29). AI for Sustainability: an overview of AI and the SDGs to contribute to the European policy-making. Futurium. https://futurium.ec.europa.eu/en/european-ai-alliance/document/ai-sustainability-overview-ai-and-sdgs-contribute-european-policy-making
- Braun, Virginia, and Victoria Clarke. Successful qualitative research: A practical guide for beginners. sage, 2013.

Week 7*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
19th Oct 10:00-11:00	Lecture	Ethics in Research and Policy	Ethical issues and problems in Transdisciplinary Research	1hr	Dr. Itziar De Lecuona (UB)	In Class /online
11:00-12:30	Workshop	Research Planning	Draft research plan with "new challenge" including ethics considerations, draft research questions and literature review	1.5hr	Dr. Jake Byrne (TCD)/ Dr. Sergio Villanueva (UB)	In Class
13:30-15:00	Tutorial	Machine Learning Bias activity	Student use case studies to explore biases	1.5hr	Dr. Santi Segui (UB)	In Class

Essential readings & other study material (note additional reading listed at the end of this document):

- *de Lecuona, I., Bertrán, M. J., Bórquez, B., Cabré, L., Casado, M., Corcoy, M., ... & Subías, P. (2020). Pautes per avaluar projectes de recerca i innovació en salut que utilitzin tecnologies emergents i dades personals. http://www.bioeticayderecho.ub.edu/en/guidelines-reviewing-health-research-and-innovation-projects-use-emergent-technologies-and-personal*
- *University of Barceona (2020) The Univeristy of Barcelona code of conduct: http://diposit.ub.edu/dspace/bitstream/2445/166917/3/11636_497723_3145_.pdf (from page 67 on).*
- *Angwin, J. A., Larson, J. L., Mattu, S. M., & Kirchner, L. K. (2020, February 29). Machine Bias. ProPublica. https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing*

Week 8*:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
No Classes – Reading Week						
 At end of week students submit **Draft research plan for new challenge (due for week 9) & literature review** (assignment #5)						

Week 9*:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
2nd Nov 10:00-11:00	Lecture	Stakeholder tensions and conflicts	Facilitating engaged research with diverse stakeholders: facilitation techniques, observations and active listening	1hr	Sarah Bowman (TCD) & Michael Foley (TCD)	In Class /online
11:00-12:30	Tutorial	Prep for stakeholder engagement	Update Stakeholder presentations and prepare for engaging with stakeholders	1.5hr	Sarah Bowman (TCD)	In Class
13:30-15:00	Workshop	Consulting with stakeholders	Stakeholder meetings and research proposal presentation for feedback.	1.5hr	Sarah Bowman (TCD)	In Class
At end of week students submit **Stakeholder perspective presentation including updated systems mapping** (assignment #6)						
Essential readings & other study material (note additional reading listed at the end of this document): - *Heckert, A., Forsythe, L.P., Carman, K.L. et al. Researchers, patients, and other stakeholders' perspectives on challenges to and strategies for engagement. Res Involv Engagem 6, 60 (2020). https://doi.org/10.1186/s40900-020-00227-0* - *A Framework for Engaged Research: Society and Higher Education Working Together to Address Grand Societal Challenges* - *Engaged Research for Impact: A Policy Briefing for Higher Education Institutions* - *Consensus Decision Making Videos 1 – 3, Seeds for Change*						

Week 10*:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
9th Nov 2021 10:00-11:30	Lecture	Research methods 2	Methodologies behind data sources.	1.5hr	Dr. Sonam Banka (TCD)	In Class /online
11:30-15:00	Tutorial	Research methods review and selection	Research methods review and selection of appropriate research methods to tackle specific challenges	2.5h (with lunch break)	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)/ Dr. Silvia Gallagher (TCD)	In Class
At end of week students submit **Draft research Questions** (assignment #7)						
Essential readings & other study material (note additional reading listed at the end of this document): - *University of Sydney on Digital Humanities Data Collection - https://libguides.library.usyd.edu.au/Digital_Humanities/DataCollection* - *Benedictine University on Data Sources - https://researchguides.ben.edu/c.php?g=282050&p=4036581* - *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) - http://www.prisma-statement.org/*						

Week 11*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
16th Nov 10:00-11:00	Lecture	Open Science & Open Sources of Data	Introduction to Open Science and a review the different open sources of data through hands-on examples and the related best practices.	1hr	Prof. Frank Miedema & Dr. Barnabas Szaszi (ELTE)	In Class /online
11:00-12:30	Workshop	Explore existing datasets/sources	Provide resources on existing datasets. Getting creative with existing data e.g. web scrapping techniques.	1.5hr	Prof. Catherine Comiskey (TCD) , Dr. Sonam Banka (TCD) & David McDonagh (TCD)	In Class
13:30-15:00	Workshop	Data collection strategy and methods	Develop data collection strategy and methods	1.5hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB) & Dr. Silvia Gallagher (TCD)	In Class
At end of week students submit **Draft data generation and methods plan linked to research questions** (assignment #8)						
Essential readings & other study material (note additional reading listed at the end of this document): - *Patel, H. (2020, March 27). These Are The Best Free Open Data Sources Anyone Can Use. FreeCodeCamp.Org. https://www.freecodecamp.org/news/https-medium-freecodecamp-org-best-free-open-data-sources-anyone-can-use-a65b514b0f2d/* - *Utrecht University. (2021, October 7). Open Science. Universiteit Utrecht. https://www.uu.nl/en/research/open-science*						

Week 12*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
23rd Nov 10:00-11:30	Lecture	Research Communication	Oral skills to communicate and pitch research posters	1.5	Dr. Jocelyn Ballantyne (UU)	In Class /online
11:30-13:00	Workshop	Poster session preparation	Preparation of posters for pitching	1.5	Dr. Sergio Villanueva (UB) &Facilitators	In Class
14:00-15:00	Workshop	Stakeholder Poster feedback	Review Plan in poster format	1	Facilitators	In Class

Essential readings & other study material (note additional reading listed at the end of this document):

- *Rowe, N. (2017). Academic and Scientific Poster Presentation. Springer. ISBN: 978-3-319-61280-5 https://link.springer.com/book/10.1007%2F978-3-319-61280-5*
- *Turner, K. J., Osborn, R., Osborn, M., Osborn, S. (2018). Public speaking : finding your voice. Pearson. Eleventh Edition. ISBN-13: 9780134401416*

Week 13*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
30th Nov 10:00-11:00	Lecture	Data collection and Generation	Data types and sources and processing techniques	1hr	Dr. Sonam Banka (TCD)	In Class /online
11:00-12:00	Tutorial	Sourcing data	Finding potential data sources	1hr	Dr. Jake Byrne (TCD) & Dr. Silvia Gallagher (TCD)	In Class
12:00-15:00	Workshop	Collating data sources	Collating and processing potential data sources	2hr (with lunch break)	Facilitators/Dr. Jake Byrne (TCD) & Dr. Silvia Gallagher (TCD)	In Class

Essential readings & other study material (note additional reading listed at the end of this document):

- *Minitab – "Understanding Qualitative, Quantitative, Attribute, Attribute, Discreet and Continuous Data Types"* *https://blog.minitab.com/en/understanding-statistics/understanding-qualitative-quantitative-attribute-discrete-and-continuous-data-types*
- *University of New South Wales Sydney – "Types of Data and the Scales of Measurement"* *https://studyonline.unsw.edu.au/blog/types-of-data*

Week 14*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
7th Dec 10:00-11:30	Lecture	Data Analysis	Statistical methods overview	1.5hr	Prof. Catherine Comiskey (TCD)	In Class/Online
11:30-13:00	Tutorial	Data Analysis Planning	Developing an analysis plan, identifying data types and technology needs.	1.5hr	Prof. Catherine Comiskey (TCD)	In Class
Essential readings & other study material (note additional reading listed at the end of this document): - *Comiskey, C.M. and Dempsey, O. (2013). Analysing data from small and large samples and normal and non-normal distributions. Chapter in Quantitative Health Research, Ed. E.A Curtis and J. Drennan, McGraw Hill, Open University Press, England. ISBN 978-033524573-4* - *Curtis, E. A., Comiskey, C., & Dempsey, O. (2016). Importance and use of correlational research. Nurse researcher, 23(6).*						

Week 15*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
14th Dec 10:00-12:00	Tutorial	Stakeholder meeting preperation	Prepare for meeting with stakeholders	2hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
12:00-14:00	Workshop	Stakeholders feedback on preliminary results	Present preliminary results to stakeholders for feedback	2hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	In Class
 At end of week students submit **Preliminary findings poster** (assignment #9)						

Week 16*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
11th Jan 2022 10:00- 11:00	Tutorial	Reflexivity and perspectives	Reflexivity session, dialogue on findings and analysis to date	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	Hybrid Learning spaces/online
11:00-15:00	Workshop	Tensions, omissions and limitations	review findings with a view towards stakeholder considerations and identify gaps, limitations, tensions and dichotomies and what next steps might be	3hr (with lunch break)	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	Hybrid Learning spaces/online
 At end of week students **submit Limitations and future work report** (assignment #10)						

Essential readings & other study material (note additional reading listed at the end of this document):

- *Thompson, N., & Pascal, J. (2012). Developing critically reflective practice. Reflective practice, 13(2), 311-325.*
- *Mulder, P. (2021, May 10). Gibbs Reflective Cycle by Graham Gibbs. Toolshero. https://www.toolshero.com/management/gibbs-reflective-cycle-graham-gibbs/*

Week 17*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
18th Jan 2022 10:00-11:30	Lecture	**Writing a research report**	How to structure and write a research report	1.5hr	Dr. Silvia Gallagher (TCD)	Hybrid Learning spaces/online
12:00-13:00	Workshop	Pitch/presentation preparation	**Presentation pitch preparation and demo pitches to peers**	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	Hybrid Learning spaces/online
14:00-15:00	Workshop	Pitch/presentation preparation continued.	**Presentation pitch preparation and demo pitches to peers**	1hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	Hybrid Learning spaces/online
21st Jan 2022 10:00-15:00	**Sharing session** *(note this is a cross-module session)*	Presentations and Feedback	Students present to their peers and extra-academic actors their final assessment #4 bis. They pitch how their multi-stakeholder partnership may address the sustainability challenge they have selected, and how it fares against different normative analytical lenses (e.g., inclusiveness, transparency, accountability, effectiveness, integration and coherence, reflexivity). They answer questions and receive feedback from their peers and extra-academic actors, based on a rubric provided by the module coordinators.	5 hours	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), and Dr. Jake Byrne (Transdisciplinary Research module coordinator)	Hybrid classroom 5 universities

			Detailed schedule: 10:00-10:45: initial preparation and explainer videos 10:45-11:00: break 11:00-13:10 (including a 10 min break): presentations (10-12 min presentation / 8-10 min feedback / 3 groups of 5 students, divided into 3 parallel sessions) 13:10-14:00: lunch time 14:00-15:00: feedback			
 At end of week students submit Pitch/Presentation (assignment #11)						
Essential readings & other study material (note additional reading listed at the end of this document): - *Morley, J. (2014). Academic phrasebank. Manchester: University of Manchester.* - -						

Week 18*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
25th Jan 2022 11:00-12:00	Tutorial/Feedback	Feedback integration	Integrate feedback from pitches	1hr	Dr. Jake Byrne (TCD)	Hybrid Learning spaces/online
12:00-15:00	Workshop	Report writing support session	Additional report writing support session	3hr	Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)	Hybrid Learning spaces/online

Week 19*:

Time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
~~1st Feb 2022~~ ~~12:00-15:00~~	~~Workshop~~	~~Report writing support session~~	~~Additional report writing support session~~	~~3hr~~	~~Dr. Jake Byrne (TCD) & Dr. Sergio Villanueva (UB)~~	~~Hybrid Learning spaces/online~~
3rd Feb 2022 16.00-17.00 CET	Module evaluations	Module evaluations	Students fill in the evaluations of the modules of the Preparatory Phase.	1 hour	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne (Transdisciplinary Research module coordinator), and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
3 February 2022, 17.00-19.00 CET	Social event (note this is a cross-module session)	Celebrate session!	TBD	2 hours	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne (Transdisciplinary Research module coordinator), and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
On the 2nd February 2022 students submit their final group report(assignment #12)						

* Note this is subject to change

Assessment table

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	First submission W2: 17/09/2021 23:59 CET Final submission W18: 28/01/2022 23:59 CET	personal epistemology statement/reflection	Individual - 500 words– revised every 4 weeks	Teacher	Comm, PPD, TD
2	W3: 24/09/2021 23:59 CET	System map for challenge in week 1	Group submission – including reference to group reflection on working together	Teacher & Peer Group	Coll, DS, SC
3	W4: 1/10/2021 23:59 CET	Stakeholder perspectives to define research questions	Individuals assigned unique personas to complete template exploring tensions and dichotomies. Group submission collates individual work and synthesises the perspectives into specific research question	Teacher & Team Peer	TD, Comm, SC
4	W5: 08/10/2021 23:59 CET	Draft Research plan including main areas of background reading needed for week 1	Group submission of abstract (500 words), with specific background reading topics assigned to individuals	Peer Group	Schol, TD, Comms
5a	W8: 29/10/2021 23:59 CET	Draft research plan for new challenge	Group submission (4000-5000 words), including abstract, introduction and	Teacher	Schol, TD, Comms

			Literature Review, with individual contributions highlighted.		
5b	W8: 29/10/2021 23:59 CET	Peer feedback on collaboration for draft research plan	Provide feedback to your peers on collaboration experience during research plan drafting	Team Peer	Collab
6	W9: 04/11/2021 23:59 CET	Stakeholder perspective presentation	Group submission (video recording of approx.10 slides – max 7 minutes), including stakeholder mapping, feedback and references with individual contributions highlighted.	Teacher & Peer Group	TD, Comm, DS
7	W10: 12/11/2021 23:59 CET	Draft Research Questions	Group submission, with individual concerns/reflections	Teacher	TD, Schol, PPD
8	W11: 19/11/2021 23:59 CET	Draft data generation and methods plan	Group submission (1,000 words), linked to research questions, with individual contributions highlighted.	Teacher	Schol, TD, SC
9	W15: 15/12/2021 23:59 CET	Preliminary findings poster	Group submission, with individual contributions highlighted.	Peer Group	Schol, TD, DS
10	W16: 14/01/2022 23:59 CET	Limitations and future work report	Group submission (800 words), with individual concerns/reflections	Teacher & Peer Group	Schol, TD, Sus
~~11~~	~~W17: 21/01/2022 23:59 CET~~	~~Pitch/Presentation~~	~~Summary of highlights from report (individual comparison between first presentations from weeks 9 and 15~~	~~Teacher & Stakeholders~~	~~Schol, TD, Comm, Collab~~

~~12~~	Merged with Social Innovation final report ~~W19: 02/02/2022~~ ~~23:59 CET~~	~~Final Report~~	~~To include:~~ ~~Systems Mapping~~ ~~Epistemologies~~ ~~Stakeholder Perspective and Engagement plan~~ ~~Dichotomies/Tension~~ ~~Research/Background~~ ~~RQs/Goal~~ ~~Methodology~~ ~~Ethics~~ ~~Methods~~ ~~Data Generation~~ ~~Data Analysis~~ ~~Limitations~~ ~~Section outlining individual contributions and inputs~~	~~Teacher~~	~~All~~
~~12b~~	~~W19: 01/02/2022~~ ~~23:59 CET~~	~~Peer feedback on collaboration for final report~~	~~Provide feedback to your peers on collaboration experience during final report writing~~	~~Team Peer~~	~~Collab~~
13	Continuous	Personal Reflection/Self-Assessments	How have I improved and where can I improve? - Epistemological perspective	Self	All

			- Understanding of others' perspectives - Research methods - Inclusion of STK voices - Communication skills - Working with stakeholders/extra academic actors		

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Literature/reading list (* are essential reading)

Epistemologies, Research Paradigms, Transdisciplinarity

Nicolescu, B. (2014). Multidisciplinarity, interdisciplinarity, indisciplinarity, and transdisciplinarity: Similarities and differences. RCC Perspectives, (2), 19-26.

*Patel, S. (2021). The research paradigm – methodology, epistemology and ontology – explained in simple language – Dr Salma Patel. Retrieved 21 July 2021, from http://salmapatel.co.uk/academia/the-research-paradigm-methodology-epistemology-and-ontology-explained-in-simple-language/

*McGregor, S. L., & Volckmann, R. (2013). Transversity: Transdisciplinarity in higher education. Leading transformative higher education, 58-81.

Hoffmann, S.H., Klein, J., & Pohl, C. (2019). Linking transdisciplinary research projects with science and practice at large: Introducing insights from knowledge utilization. Environmental Science & Policy, 102, 36-42.

Scholz, R. W. (2017). The normative dimension in transdisciplinarity, transition management, and transformation sciences: New roles of science and universities in sustainable transitioning. Sustainability, 9(6), 991.

Mitchell, C., & Willetts, J. (2006). Learning to be a “Transdisciplinary” Sustainability Researcher: A Community of Practice Approach.

Norris, P. E., O'Rourke, M., Mayer, A. S., & Halvorsen, K. E. (2016). Managing the wicked problem of transdisciplinary team formation in socio-ecological systems. Landscape and Urban Planning, 154, 115-122.

Nicolescu, B. (2014). Methodology of transdisciplinarity. World Futures, 70(3-4), 186-199.

Systems Thinking and Complexity

Weaver, Warren 1948. Science and Complexity. American Scientist 36 (4):536-44.

*Arnold, R.D. & Wade, J.P. (2015). A Definition of Systems Thinking: A Systems Approach. Procedia Computer Science, Volume 44, 669-678, DOI: 10.1016/j.procs.2015.03.050. (Open Access)

*Kim, D.H. (1999). Introduction to Systems Thinking. Pegasus Communications, ISBN10 188382334X (out of print but available online).
https://static1.squarespace.com/static/535849dae4b0f67f52ae0568/t/5e42d6fbecf987525cb25dfc/1581438716299/Introduction+to+Systems+Thinking.pdf

Meadows, D. H. (2008). Thinking in Systems: A Primer. White River Junction, VT: Chelsea Green Publishing. ISBN 9781844077267. (Text book from one of the main protagonists of systems thinking, available as a pdf; https://wtf.tw/ref/meadows.pdf)

Plate, R., & Monroe, M. (2014). A Structure for Assessing Systems Thinking. Creative Learning Exchange. (Useful for self-assessment of week 1 challenges, permission granted for copying and for electronic distribution for non-commercial educational purposes) https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.637.3364&rep=rep1&type=pdf

Agent Based Modelling

*Romanowska, I., Wren, C. D., & Crabtree, S. A. (2021). The Foundational Steps of Building an Agent-Based Model. In Agent-Based Modeling for Archaeology: Simulating the Complexity of Societies (pp. 19–42). Santa Fe Institute. https://www.sfipress.org/books/agent-based-modeling-archaeology

Wicked Problems

*Termeer, C.J.A.M, Dewulf, A., Biesbroek, R. (2019). A critical assessment of the wicked problem concept: relevance and usefulness for policy science and practice, Policy and Society, 38:2, 167-179, DOI: 10.1080/14494035.2019.1617971.

Head, B.W. (2019). Forty years of wicked problems literature: forging closer links to policy studies, Policy and Society, 38:2, 180-197, DOI: 10.1080/14494035.2018.1488797.

Stakeholder Engagement

*Yarime, M., Trencher, G., Mino, T., Scholz, R. W., Olsson, L., Ness, B., ... & Rotmans, J. (2012). Establishing sustainability science in higher education institutions: towards an integration of academic development, institutionalization, and stakeholder collaborations. Sustainability Science, 7(1), 101-113.

Scientific Approaches

Gelfert, Axel (2016). _How to Do Science with Models. A Philosophical Primer_. Springer.

Höttecke, D, Allchin, D. Reconceptualizing nature-of-science education in the age of social media. Science Education. 2020; 104: 641– 666. https://doi.org/10.1002/sce.21575

Kevin C. Elliott, & Ted Richards. 2017. Exploring Inductive Risk - An Introduction. Oxford UP. DOI:10.1093/acprof:oso/9780190467715.003.0001

Mercier, H., & Sperber, D. (2017). The enigma of reason. Harvard University Press. https://doi.org/10.4159/9780674977860 Part IV. What Reason Can and Cannot Do

Literature Reviews:

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research, 104, 333-339.

Randolph, Justus (2009) "A Guide to Writing the Dissertation Literature Review," Practical Assessment, Research, and Evaluation: Vol. 14 , Article 13. DOI: https://doi.org/10.7275/b0az-8t74

Green, B. N., Johnson, C. D., & Adams, A. (2006). Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. Journal of chiropractic medicine, 5(3), 101–117. https://doi.org/10.1016/S0899-3467(07)60142-6

Research Methods:

*Elizabeth A. Curtis, Catherine Comiskey and Orla Dempsey, Correlational Research: Importance and Use in Nursing and Health Research, Nurse Researcher, 23, 6, 2015, 20 – 25

*Comiskey, C.M. and Dempsey, O. (2013). Analysing data from small and large samples and normal and non-normal distributions. Chapter in Quantitative Health Research, Ed. E.A Curtis and J. Drennan, McGraw Hill, Open University Press, England. ISBN 978-033524573-4

Bryman, A. (2016). Social research methods. Oxford university press.

Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. Sage.

Zina, O. (2021). The essential guide to doing your research project. Sage.

Data Generation Examples:

Healthy Schools Programme - https://libguides.library.usyd.edu.au/Digital_Humanities/DataCollection

CityWide Anti-Stigma Evaluation - https://www.citywide.ie/assets/files/pdf/citywide_anti-stigma_training_report_final.pdf?issuusl=ignore

Gay Men's Sexual Health report - https://www.sexualwellbeing.ie/for-professionals/research/research-reports/gmhs-report_final.pdf

COVID-19 Back-calculation paper - https://academic.oup.com/eurpub/article/31/4/908/6318777?guestAccessKey=999a3733-63ba-4197-8c49-659a811bfbac

Dublin Simon Community report - https://www.dubsimon.ie/reports/researchpolicy/#toggle-id-2

Suzanne Guerin & Catherine Comiskey (2018) Developing a Detailed Design for Research with Communities. Chapter 6 in Research and Evaluation in Community, Health and Social Care Settings Experiences from Practice, edited by Suzanne Guerin, Nóirín Hayes, Sinéad McNally, Routledge, Taylor and Francis Group, Oxford United Kingdom (uploaded on Moodle)

Sourcing data:

* University of Sydney on Digital Humanities Data Collection - https://libguides.library.usyd.edu.au/Digital_Humanities/DataCollection

* Benedictine University on Data Sources - https://researchguides.ben.edu/c.php?g=282050&p=4036581

* Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) - http://www.prisma-statement.org/

Patel, H. (2020, March 27). These Are The Best Free Open Data Sources Anyone Can Use. FreeCodeCamp.Org. https://www.freecodecamp.org/news/https-medium-freecodecamp-org-best-free-open-data-sources-anyone-can-use-a65b514b0f2d/

https://data.gov.ie/

https://www.openaire.eu/opendatapilot-repository-guide

https://www.zenodo.org/

https://www.re3data.org/

Quantitative analysis:

Page R. M., Cole G. E. & Timmreck T. C. (1995) Basic Epidemiological Methods and

Biostatistics. Sudbury: Massachusetts, Jones and Bartlett Publishers

Field, A. (2013). Discovering statistics using IBM SPSS statistics. sage.

Field, A. (2009). Discovering statistics using SPSS. Sage publications.

D.S. Moore, G.P. McCabe, Introduction to the Practice of Statistics. Oxford Freeman.

Comiskey, C, Dempsey, O. (2013). Analysing data from small and large samples and non-

normal and normal distribution. In: Curtis, E.A. and Drennan, J. Quantitative Health Research

Issues and Methods. UK: Open University Press. 348-371.

Scot and D. Mazhindu. Statistics for Health Care Professionals; An Introduction. Sage, UK.

Qualitative analysis:

Braun, Virginia, and Victoria Clarke. Successful qualitative research: A practical guide for beginners. sage, 2013.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, 3(2), 77-101.

Writing a research report

Morley, J. (2014). Academic phrasebank. Manchester: University of Manchester.

Communications

Grieve, R., Woodley, J., Hunt, S. E., & McKay, A. (2021). Student fears of oral presentations and public speaking in higher education: a qualitative survey. Journal of Further and Higher Education, 1-13.

*Raw, N. (2017). Academic and Scientific Poster Presentation. Springer. ISBN: 978-3-319-61280-5 https://link.springer.com/book/10.1007%2F978-3-319-61280-5

*Turner, K. J., Osborn, R., Osborn, M., Osborn, S. (2018). Public speaking : finding your voice. Pearson. Eleventh Edition. ISBN-13: 9780134401416

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Preparatory Phase (Semester 1)

Sustainability

Universitat de Barcelona · Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin · Utrecht University · Eötvös Loránd University | Budapest · Université de Montpellier

Student Module Descriptor

Module details

Module title: SUSTAINABILITY

Module coordinator: Dr. Carole-Anne Sénit
c.a.senit@uu.nl
Utrecht University

Module facilitator: Bianca de Souza Nagasawa
b.desouzanagasawa@uu.nl
Utrecht University

Module deputy: Dr. Marjanneke Vijge (Utrecht University)
Dr. Patricia Cucchi (University of Montpellier)

Teachers: Prof. Frank Biermann (Utrecht University), Dr. Brian Dermody (Utrecht University), Dr. Jessica Dijkman (Utrecht University), Prof. Peter Driessen (Utrecht University), Prof. Katalin Felvinczi (Eötvös Loránd University), Dr. Joshua Gellers (University of North Florida), Dr. Rakhyun Kim (Utrecht University), Dr. Jos Philips (Utrecht University), Dr. Laura Piscicelli (Utrecht University), Dr. Karin Rebel (Utrecht University), Dr. Ádam Zoltán Tóth (Eötvös Loránd University), Dr. Annick de Witt (Worldview Journeys), Melanie van Driel (Utrecht University), Dr. Guus van Westen (Utrecht University).

Start date – end date: 6 September – 4 February

Assessments: 10

Module design and content

Module high-level learning aims:

This module examines global sustainability challenges from different disciplinary and stakeholders' perspectives. The module aims to provide a broad overview of the key concepts, actors, debates and issues in sustainability. It demonstrates the complexities both of the nature of the problems as well as the solutions.

The module has four parts. After an introductory and community-building week where students explore and discuss their views and values about sustainability to question engrained assumptions and broaden their own perspective, students dive deep into the complexity of sustainability challenges. In this second part, students are introduced to the key concepts of sustainability, and theoretical as well as conceptual approaches to appraise sustainability challenges, including systems thinking. In the third part of the module, students explore and evaluate the barriers and levers to sustainability transformation through different disciplinary lenses, ranging from history to ethics and philosophy, politics and economics. Finally, in the fourth part students appraise the role of different societal actors

in the pursuit of sustainability, and assess how these actors interact within various governance arrangements to address global sustainability challenges.

After completion of the module, students will be able to:

- Critically discuss the concepts of sustainability and sustainable development as they are constructed and represented within multiple disciplines and by different societal actors;
- Acquire different theoretical and conceptual approaches to analyse and evaluate complex sustainability challenges and develop inter- and transdisciplinary skills to design solutions for these challenges.

Connection with other phases and modules:

Sustainability is one of the three compulsory modules in the preparatory phase of the CHARM-EU Master programme in Global Challenges for Sustainability. In this phase, modules focus on core competencies grounded in contemporary issues and approaches in sustainability. In particular, the Sustainability module aims at providing an overview of different perspectives on sustainable development in order to illustrate the complexity of sustainability challenges and of finding and implementing solutions for them.

This module runs in parallel with Transdisciplinary Research and Social Innovation. While the Sustainability module provides a solid foundation of knowledge, theories and approaches to study sustainable development issues and challenges. The Transdisciplinary Research module focuses on research methodologies and provides students with opportunities to practice in transdisciplinary/multidisciplinary team to assess global sustainability challenges. In the Social Innovation module, students learn to develop solutions for sustainability transformations. The Sustainability module acknowledges the fact that sustainability problems cannot be approached in a universal way. This is because they have not only global but also local characteristics and because problem perceptions and solutions vary depending on actors' perspectives. Together, the modules of CHARM-EU's preparatory phase provide students with the knowledge, concepts and models to understand, analyse and address sustainability challenges within their context.

Module Learning Outcomes

The learning outcomes for this module are closely related to the overall Programme Learning Outcomes (PLOs). On successful completion of this module, students should be able to:

- Operationalize and critically discuss the concepts of sustainability and sustainable development from different cultural, historical, ethical, inter- and transdisciplinary perspectives [PLO1]
- Understand different framings of the natural world and its relation to societies, and how these shape sustainability challenges [PLO1]
- Define the dynamics, causes and impacts of global environmental change and sustainability challenges [PLO2]
- Capture the complex interlinkages between different sustainability challenges from social, economic, environmental, (geo)political, legal and developmental perspectives [PLO1,2]
- Identify theories from various disciplines that explain how socio-ecological systems function and how humans are interconnected with nature [PLO2,3,4]
- Analyse governance and legal regimes around different sustainability themes (sustainable development, climate, biodiversity, forests, etc.), and develop skills to assess their performance based on core values such as democracy, transparency, accountability, legitimacy, justice, equity, etc. [PLO2]

- Recognize, explain and reflect upon the (current and historical) positions of and power dynamics between different actors that are involved in and affected by sustainability challenges [PLO2]
- Identify theorical approaches (e.g. transitions, earth system governance, institutionalism, policy analysis) that help explain (the lack of) policy and behavioural change towards sustainability [PLO2,3,5]
- Analyse and evaluate the (success of) participatory methods in solutions to sustainability challenges [PLO5]
- Develop knowledge and skills to analyse, evaluate and design proposals for viable solutions to sustainability challenges in a transdisciplinary manner, taking into account the impact on and care for the planet and different groups of people (including marginalized communities) [PLO2,5,6]
- Acquire a systems and sustainability ethics perspective to study and address complex sustainability challenges, with appreciation for cross-sectoral and intercultural dynamics [PLO5]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Lecture	Students follow online or hybrid lectures delivered by expert guest teachers.
Workshop	Students work in groups to develop specific skills and competencies with the supervision of a teacher.
Flipped classroom	On the basis of the required readings for the week, students engage in a debate around catchy, controversial questions related to the different topics addressed in each week.
Meet the expert	Students engage with extra-academic actors to discuss sustainability challenges and include the perspectives of extra-academic actors within their assignments.
Sharing session	Students share with their peers the findings of their assignments and reflect on their learning trajectory, with the facilitation of a teacher.
Group work	Students work in (hybrid) subgroups, do hands-on research and work on their contribution to group assignments.

Study materials

Study materials will be shared through the Virtual Learning Environment:

- hand-outs and reader;
- obligatory literature;
- links to self-study sources;
- literature database;
- links to relevant websites;
- recommended (optional) literature.

Mobility activities in the module

CHARM-EU identifies mobility as a key tool for enhancing the quality of teaching and learning processes for all CHARM-EU students and teachers. CHARM-EU students and staff will be part of one university community with multiple campuses across countries creating a unified international ecosystem with seamless mobility flows and accompanying international activities.

Due to the uncertainties associated with the current Covid-19 pandemic, mobility in Phase 1 mainly consists of 'virtual' mobility. Virtual mobility will mainly be integrated in the format and content of the modules, and based on online intercultural learning and hybrid classrooms. In particular, the Sustainability module content includes diverse perspectives on social, economic, political and/or environmental issues and differences in professional practices across cultures. It provides a space for students from different cultural backgrounds to contribute relevant examples from their home country or community. In addition, learning activities include an international component and encourage students to compare/contrast how cultural influences can have impact on the construction of knowledge around the world. Many activities aim to foster dialogue and collaborative learning between students from different cultural backgrounds to eventually increase the potential for deep learning and cross-cultural understanding. Finally, the study materials include diverse resources that explore different perspectives and allow students to develop their intercultural skills. In addition, students will be actively encouraged to include literature and perspectives from diverse backgrounds in their (group) assignments.

Module schedule[1]

Week 0: Induction Week (30 August – 3 September 2021)

Week 1: Worldview Journey & Module Logistics

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
6 September 2021, 10.00-12.00 CET	**Workshop**	Worldview Journey	Through short videos, students are introduced to different worldviews, or the 'big stories' through which humans make sense of their experience and world. They then take an online test to identify their own worldview. Finally, they discuss in break-out groups how their worldview relates to sustainability, and think reflexively about, and question the engrained assumptions that are associated with their worldview. This activity is intended as an ice-breaker for students.	2 hours	Dr. Annick de Witt (Worldview Journeys) & Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities
7-9 September 2021	**Conference (optional)**	Earth System Governance conference	Students follow sessions from the conference and reflect on the main takeaways in their reflexive journal.		Unfacilitated	Online
Readings & other study material: - Worldview Journey videos and test, available on Moodle.						

[1] Please note that this schedule is subject to change.

- De Witt, A., de Boer, J., Hedlund, N., and Osseweijer, P. (2016). A new tool to map the major worldviews in the Netherlands and USA, and explore how they relate to climate change. *Environmental Science & Policy* 63, 101-112. https://doi.org/10.1016/j.envsci.2016.05.012
- Hochachka, G. (2019). On matryoshkas and meaning-making: Understanding the plasticity of climate change. *Global Environmental Change* 57, 101917. https://doi.org/10.1016/j.gloenvcha.2019.05.001
- Ruiz-Mallén, I., & Heras, M. (2020). What sustainability? Higher education institutions' pathways to reach the Agenda 2030 goals. *Sustainability* 12, 1290. https://doi.org/10.3390/su12041290

PART 1: DIAGNOSING THE CHALLENGES

Week 2: Understanding Sustainability

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
13 September 2021, 10.00-10.30 CET	Lecture	Opening	Welcome, introduction teaching staff, module ambitions, assessments	30 min	Dr. Carole-Anne Sénit (module coordinator), Bianca de Souza Nagasawa (Utrecht University), Lubberta de Jong (Utrecht University)	Hybrid classroom 5 universities
13 September 2021, 10.30-11.30 CET	Lecture	Understanding Sustainability	This lecture introduces the key concepts associated with sustainability (e.g., Anthropocene, Planetary Boundaries, resilience, etc.) and explores some of the different framings of sustainable development (ecocentric versus anthropocentric; weak versus strong sustainability).	1 hour	Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities

13 September 2021, 12.00-13.00 CET	**Flipped classroom**	Is sustainable development a transformative concept?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Dr. Carole-Anne Sénit (Utrecht University) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
	Assessments #3 and #3 bis are presented, as well as Assessments #6 and #7.					
Readings & other study material: - De Vries, B. (2012). Sustainability: Concerns, definitions, indicators. In: Bert De Vries, Sustainability Science (pp. 117-145). Cambridge: Cambridge University Press. - Dernbach, J., & Cheever, F. (2015). Sustainable development and its discontents. *Transnational Environmental Law* 4 (2), 247-287. https://doi.org/10.1017/S2047102515000163 - Robinson, J. (2004). Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48 (4), 369-384. https://doi.org/10.1016/j.ecolecon.2003.10.017						

Week 3: Appraising Complexity

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
20 September 2021, 10.00-11.30 CET	**Lecture**	Appraising Complexity	In this lecture, students are introduced to wicked sustainability issues and explore theoretical and conceptual approaches to appraise and address complexity (e.g., systems thinking and complex system theory).	1.5 hours	Dr. Karin Rebel (Utrecht University) and Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities

20 September 2021, 12.00-14.30 CET	**Workshop**	System analysis of socio-ecological systems	In this workshop, students learn how to develop and use systems thinking competency. Specifically, they develop their ability to recognize and understand relationships between social and ecological systems; to analyse complex systems; to think of how systems are embedded within different domains and different scales; and to deal with uncertainty and the politics thereof. In doing so, students gain a deep understanding of the root causes of sustainability challenges, of political conflicts and contestation, but also where the deep leverage points for a transition to a sustainable society may lie.	2.5 hours (including a 30 min lunch break)	Dr. Brian Dermody (Utrecht University) and Dr. Carole-Anne Sénit (Utrecht University)	Hybrid classroom 5 universities
20 September 2021, 15.00-16.00 CET	**Flipped classroom**	Are planetary boundaries fair?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities

Readings & other study material

Flipped classroom:

- Biermann, F., & Kim, R. E. (2020). The boundaries of the Planetary Boundary framework: A critical appraisal of approaches to define a 'Safe Operating Space' for humanity. *Annual Review of Environment and Resources* 45 (1), 497-521. https://doi.org/10.1146/annurev-environ-012320-080337
- Häyhä, T., Lucas, P. L., van Vuuren, D. P., Cornell, S. E., & Hoff, H. (2016). From Planetary Boundaries to national fair shares of the global safe operating space — How can the scales be bridged? *Global Environmental Change* 40, 60-72. https://doi.org/10.1016/j.gloenvcha.2016.06.008
- Hickel, J. (2019). Is it possible to achieve a good life for all within planetary boundaries? *Third World Quarterly* 40 (1), 18-35. https://doi.org/10.1080/01436597.2018.1535895

- Steffen, W. et al. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science* 347 (6223), 1259855. https://doi.org/10.1126/science.1259855

Workshop:

- De Domenico, M., & Sayama, H. (2019). Complexity Explained Handbook. https://complexityexplained.github.io/
- Nilsson, M., et al. (2018). Mapping interactions between the Sustainable Development Goals: Lessons learned and ways forward. *Sustainability Science* 13, 1489-1503. https://doi.org/10.1007/s11625-018-0604-z
- Reid, A. J. et al. (2021). 'Two-Eyed Seeing': An Indigenous framework to transform fisheries research and management. *Fish and Fisheries* 22 (2), 243-261. https://doi.org/10.1111/faf.12516

Week 4: Back to the Future: What Can History Teach Us About Global Sustainability Challenges and the Resilience of Societies?

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
27 September 2021, 10.00-11.30 CET	Lecture	Back to the Future: What Can History Teach Us About Global Sustainability Challenges and the Resilience of Societies?	This lecture explores how global sustainability challenges have developed from a long-term historical perspective, and identifies the features of society which determine whether communities collapse under the strain of natural disasters or other forms of crises, or whether they manage to survive, recover and possibly flourish.	1.5 hours	Dr. Jessica Dijkman (Utrecht University) & Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities
27 September 2021, 12.00-13.00 CET	Flipped classroom	Are we on the road to societal collapse?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities

Readings & other study material:

- Marks, R. B. (2015). 'Exhausting the earth': Environment and history in the early modern world. In: Jerry H. Bentley, Sanjay Subrahmanyam and Merry E. Wiesner-Hanks (eds.), *The Cambridge World History, vol. 6.* (pp. 29-53). Cambridge: Cambridge University Press.

- McNeill, J. R. (2015). Energy, population and environmental change since 1750: Entering the Anthropocene. In: J. R. Mac Neill and Kenneth Pomeranz, *The Cambridge World History, vol. 7* (pp. 51-82). Cambridge: Cambridge University Press.

Flipped classroom:

- Brooks, N. (2012). Beyond collapse: Climate change and causality during the Middle Holocene Climatic Transition, 6400–5000 years before present. Geografisk Tidsskrift-Danish Journal of Geography 112 (2), 93-104. https://doi.org/10.1080/00167223.2012.741881
- Charbonnier, P. (2019). The splendor and squalor of collapsology: What the survivalists of the left fail to consider. *Revue du Crieur* 13, 88-95. https://doi.org/10.3917/crieu.013.0088
- Spinney, L. (2020). 'Humans weren't always here. We could disappear': meet the collapsologists. *The Guardian.* Available at: https://www.theguardian.com/world/2020/oct/11/humans-werent-always-here-we-could-disappear-meet-the-collapsologists

Week 5: Biosphere Dynamics and Biodiversity

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
4 October 2021, 10.00-11.00 CET	**Lecture**	Problem-based learning principle and objective of the week	Presentation of the principle of the problem-based approach to team organisation, task planning for the week and team creation.	1 hour	Dr. Patricia Cucchi (deputy module coordinator)	Hybrid (teacher and students in one location, with others joining online via MS Teams)
4 October 2021, 11.00-13.00 CET	**Workshop**	Problem-based Learning: Biosphere Dynamics and Biodiversity	Each team organises itself according to the guidelines given earlier with each team member having a predetermined role: facilitator, presenter, note keeper, time manager, participant. Each team will have to fill in forms on OneNote in MS Teams during the session which will allow the tutors to follow the progress of	2 hours	Dr. Patricia Cucchi (deputy module coordinator)	Hybrid (teacher and students in one location, with others joining online

			the teams. From a text on the subject "Why is it important to maintain biodiversity from a biological and ecological point of view?", the students must, in groups: 1/identify concepts and key words and propose definitions, 2/identify the problem, 3/issue hypotheses, 4/identify the concepts to be clarified in order to verify their hypotheses and address the problem. At the end of the session, students divide the work in order to explore the basic concepts in 5 areas: biodiversity, ecosystem functioning, biogeochemistry, physiological functions and the energy metabolism of organisms. After reading and/or viewing (1 hour) they will have to write a summary chapter (1 hour). In a team meeting (1 hour) they will have to assemble these chapters into a global synthesis in order to answer the problem.			via MS Teams)

Students hand in draft structure of Assessment #3 bis.

Assessment #2 (Group synthesis) and #2 bis (Quizz) are presented at the beginning of this week. Students hand it in at the end of the week.

Readings & other study material:

- Bertrand, P., & Legendre, L. (2021). *Earth, Our Living Planet: The Earth System and its Co-evolution With Organisms.* New York, NY: Springer.
- Keith, D.A., Ferrer-Paris, J.R., Nicholson, E. & Kingsford, R.T. (eds.) (2020). *The IUCN Global Ecosystem Typology 2.0: Descriptive profiles for biomes and ecosystem functional groups.* Gland, Switzerland: IUCN. https://portals.iucn.org/library/sites/library/files/documents/2020-037-En.pdf
- Settele, J., R. Scholes, R. Betts, S. Bunn, P. Leadley, D. Nepstad, J.T. Overpeck, & M.A. Taboada (2014). *Terrestrial and inland water systems. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects.* Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir,

M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 271-359. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap4_FINAL.pdf

- IPBES Regional Assessments: https://www.youtube.com/watch?v=kR0HeepbWCc
- Stephenson, P.J., & Carbone, G. (2021). *Guidelines for planning and monitoring corporate biodiversity performance.* Gland, Switzerland: IUCN. https://portals.iucn.org/library/sites/library/files/documents/2021-009-En.pdf

Week 6: Earth System Governance

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
11 October 2021, 10.00-11.30 CET	**Lecture**	Earth System Governance	This lecture explores how governance arrangements to address sustainability issues came about and some of the central governance challenges (e.g., fragmentation, legitimacy, equity, accountability). The lecture elaborates on the entire system of global governance, with a view to explaining deficiencies and exploring options for global reform.	1.5 hours	Prof. Frank Biermann (Utrecht University) & Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities
11 October 2021, 12.00-14.30 CET	**Workshop**	Building critical thinking through peer feedback	Students in groups of five review each group's draft assessment #3 bis. In the first hour of the tutorial, students design a rubric with specific criteria to distinguish successful from unsuccessful writing. This rubric will help students provide concrete, useful peer feedback. In the second hour of the tutorial, students review other groups' draft	2.5 hours (including a 30 min lunch break)	Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities

			assignments and reflect on the new ideas and skills they have acquired in the peer-review process.			
11 October 2021, 15.00-16.00 CET	**Flipped classroom**	Do mega-conferences advance sustainability?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
11-14 October 2021, 9.00-19.00 CET	**Conference (optional)**	Pathways to sustainability conference	Students follow sessions from the conference and reflect on the main takeaways in their reflexive journal.		Unfacilitated	Tivoli Vredenburg (Utrecht) and online (tbc)

Readings & other study material

Lecture:

- Biermann, F. (2021). The future of 'environmental' policy in the Anthropocene: time for a paradigm shift. *Environmental Politics* 30 (1-2), 61-80. https://doi.org/10.1080/09644016.2020.1846958

Workshop:

- Hanafizadeh, P., & Shaikh, A. A. (2021). Developing doctoral students' / researchers' understanding of the journal peer-review process. *The International Journal of Management Education* 19 (2), 100500. https://doi.org/10.1016/j.ijme.2021.100500

Flipped classroom:

- Biermann, F. (2013). Curtain down and nothing settled: Global sustainability governance after the 'Rio+20' Earth Summit. *Environment and Planning C: Politics and Space* 31 (6), 1099-1114. https://doi.org/10.1068%2Fc12298j
- Seyfang, G. (2003). Environmental mega-conferences—From Stockholm to Johannesburg and beyond. *Global Environmental Change* 13 (3), 223-228. https://doi.org/10.1016/S0959-3780(03)00006-2

Week 7: Planetary Justice in the Anthropocene: An Ethics Perspective to Global Sustainability Challenges

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
18 October 2021, 10.00-11.30 CET	Lecture	Planetary Justice in the Anthropocene: An Ethics Perspective to Global Sustainability Challenges	This lecture explores the ethical dimension of sustainability (e.g., balancing the needs of current and future generations, of countries with different levels of development) and how ethics may help to analyse and solve sustainability challenges. Specifically, the lecture elaborates on peoples and countries' differentiated vulnerability to global sustainability challenges, and the implications on responsibility to address those challenges. Drawing on development studies, students will also reflect on North-South relations, power dynamics, and justice.	1.5 hours	Dr. Jos Philips (Utrecht University) and Dr. Carole-Anne Sénit (Utrecht University)	Hybrid classroom 5 universities
18 October 2021, 12.00-13.00 CET	Flipped classroom	Should the Global North lead in taking action against global environmental challenges?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
18 October 2021, 14.00-15.00 CET	Meet the Expert!	Justice courts to the rescue? The role of litigation in accelerating	A conversation with Clothilde Baudouin, representative of the climate justice NGO 'Notre Affaire à Tous'	1 hour	Clothilde Baudouin (Notre Affaire à Tous) and Dr. Carole-Anne	Hybrid classroom 5 universities

		sustainability transformations			Sénit (module coordinator)	

Readings & other study material:

- Hickey, C., & Robeyns, I. (2020). Planetary justice: What can we learn from ethics and political philosophy? *Earth System Governance* 6, 100045. https://doi.org/10.1016/j.esg.2020.100045
- Kashwan, P., Biermann, B., Gupta, A., & Okereke, C. (2020). Planetary Justice: Prioritizing the poor in earth system governance. *Earth System Governance* 6, 100075. https://doi.org/10.1016/j.esg.2020.100075
- The Ecopolitics Podcast episode 2.4: Eco-colonialism and environmental justice in the Global South. https://www.ecopoliticspodcast.ca/episode-2-4-eco-colonialism-and-environmental-justice-in-the-global-south/
- The Ecopolitics Podcast episode 1.9: Ecofeminism and queer ecology. https://www.ecopoliticspodcast.ca/episode-9-ecofeminism-and-queer-ecology-2/

Week 8: Reading Week

Week without contact hours; students work in groups on their assignments and self-study.

Week 9: Earth System Law

Please note that in Week 9, the Sustainability module learning activities will take place on Wednesday instead of Monday.

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
3 November 2021, 12.00-13.00 CET	**Sharing session**	Dare to Share!	Students reflect on their learning trajectory and share some of the achievements and struggles that they included in their reflexive journal.	1 hour	Dr. Carole-Anne Sénit (module coordinator) & Bianca de Souza Nagasawa (Utrecht University)	Online (MS Teams)

3 November 2021, 14.00-15.30 CET	**Lecture**	Earth System Law	This lecture explores the legal dimensions of large-scale transformations and the novel legal developments, in national and international environmental law, for enabling and governing planetary transformations.	1.5 hours	Dr. Joshua Gellers (University of North Florida), Dr. Rakhyun Kim (Utrecht University), and Dr. Carole-Anne Sénit (module coordinator)	Online (MS Teams)
3 November, 16.00-17.00 CET	**Flipped classroom**	Should non-human entities have legal rights?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Online (MS Teams)

Readings & other study material:

- Gellers, J. C. (2021). Earth system law and the legal status of non-humans in the Anthropocene. *Earth System Governance* 7, 100083. https://doi.org/10.1016/j.esg.2020.100083
- Kotzé, L. J., & Kim, R. E. (2019). Earth System Law: The juridical dimensions of earth system governance. *Earth System Governance* 1, 100003. https://doi.org/10.1016/j.esg.2019.100003
- The Ecopolitics Podcast episode 2.9: Indigenous environmental rights: The Maya of Belize. https://www.ecopoliticspodcast.ca/episode-2-9-indigenous-environmental-rights-the-maya-of-belize/

Week 10: Economics for Sustainability

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
8 November 2021, 10.00-11.30 CET	**Lecture**	Economics for Sustainability	This lecture critically analyses how different corporate sustainability initiatives are implemented by companies to become more sustainable	1.5 hour	Dr. Laura Piscicelli (Utrecht University) and Dr. Carole-Anne	Hybrid classroom 5 universities

			at the micro-level, before delving into the different concepts that aim to transform our economies (e.g., green economy, bioeconomy, circular economy) and assessing diverse governance practices in the field of sustainable economies at the macro-level.		Sénit (module coordinator)	
8 November 2021, 12.00-13.00 CET	**Flipped classroom**	Should we smash capitalism to achieve a sustainable and just transition?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
Students upload Assessment #3 (pre-recorded video presentation) on a dedicated folder on MS Teams and comment on each other's' videos. – Deadline extended to 19 November 2021.						
Readings & other study material: - de Jesus, A., Antunes, P., Santos, R., & Mendonça, S. (2018). Eco-innovation in the transition to a circular economy: An analytical literature review. *Journal of Cleaner Production* 172, 2999-3018. https://doi.org/10.1016/j.jclepro.2017.11.111 - Dietz, T., Börner, J., Förster, J. J., & Von Braun, J. (2018). Governance of the bioeconomy: A global comparative study of national bioeconomy strategies. *Sustainability* 10, 3190. https://doi.org/10.3390/su10093190 - Feola, G. (2020). Capitalism in sustainability transitions research. Time for a critical turn? *Environmental Innovation and Societal Transitions* 35, 241-250. https://doi.org/10.1016/j.eist.2019.02.005 - The Ecopolitics Podcast episode 2.11: Growth, Degrowth, Agrowth. https://www.ecopoliticspodcast.ca/episode-2-11-growth-degrowth-agrowth/						

Week 11: Applying Transdisciplinarity for Sustainability

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location

15 November 2021, 10.00-12.00 CET	**Sharing session**	Presentations	Based on their pre-recorded video (Assessment #3), students reflect on the additional insights they have gained as a result of applying transdisciplinarity, as well as the limitations of such an approach, and exchange about their findings. Students also share one element of feedback on the assignments of their peers.	2 hours	Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
 *Students hand in final Assessment #3 bis.*						

PART 2: EXPLORING AND DESIGNING SOLUTIONS

Week 12: All Hands On Deck! Agency in Sustainability Transformations

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
22 November 2021, 10.00-11.30 CET	**Lecture**	Agency in Sustainability Transformations	This lecture explores the role of intergovernmental organizations, states, businesses, non-governmental organizations and citizens in addressing global sustainability challenges.	1.5 hour	Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities

22 November 2021, 12.00-13.00 CET	**Flipped classroom**	Dag Hammarskjöld, the second UN secretary general, said that the United Nations system 'was created not to lead mankind to heaven but to save humanity from hell'. Seventy years and half a trillion dollars later: is the United Nations still relevant to address global sustainability challenges?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Melanie van Driel (Utrecht University)	Hybrid classroom 5 universities
22 November 2021, 14.00-15.00 CET	**Meet the expert!**	Fighting environmental crime with Interpol	Discussing stakeholder engagement and professional development with an international organization representative	1 hour	Bénédicte Niel (Interpol) and Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities

Readings & other study material:

- Biermann, B, & Siebenhüner, B. (2009). The role and relevance of international bureaucracies: Setting the stage. In Frank Biermann and Bernd Siebenhüner (eds.), *Managers of global change: The influence of international environmental bureaucracies* (pp. 1-14). Cambridge, MA: MIT Press.
- Maniates, M. F. (2001). Individualization: Plant a tree, buy a bike, save the world? *Global Environmental Politics* 1 (3), 31-52. https://doi.org/10.1162/152638001316881395

Week 13: Modes of Interaction and Engagement for the Governance of Sustainability Challenges

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
29 November 2021, 10.00-11.30 CET	Lecture	Modes of Interaction and Engagement for the Governance of Sustainability Challenges	How do actors organize themselves to address global sustainability challenges? This lecture introduces the different modes of governance that actors set in place to tackle sustainability issues, such as public-private governance, interactive governance, or self-governance, among others.	1.5 hour	Prof. Peter Driessen (Utrecht University) and Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities
29 November 2021, 12.00-13.00 CET	Flipped classroom	Does sustainable labelling advance sustainability transformation?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Melanie van Driel (Utrecht University)	Hybrid classroom 5 universities
29 November 2021, 14.00-15.00 CET	Lecture	Assessing the performance of governance arrangements: Examples from the field	This lecture provides concrete examples of how to assess governance performance, focusing on the criteria of effectiveness, transparency, accountability and inclusiveness. The lecture draws from a case study of the governance of the extractive industries sector in Myanmar, and the effects of global governance arrangements at national and subnational levels.	1 hour	Dr. Marjanneke Vijge (module coordinator)	Hybrid classroom 5 universities
Readings & other study material *Lectures:*						

- Burch, S. et al. (2019). New directions in earth system governance research. *Earth System Governance* 1, 100006. https://doi.org/10.1016/j.esg.2019.100006
- Driessen, P. J., van Laerhoven, F., Runhaar, H., Vermeulen, W. J. V., & Dieperink, C. (2012). Towards a conceptual framework for the study of shifts in modes of environmental governance: Experiences from the Netherlands. *Environmental Policy and Governance* 22 (3), 143-160. https://doi.org/10.1002/eet.1580
- Mickwitz, P. (2003). A framework for evaluating environmental policy instruments: context and key concepts. *Evaluation* 9 (4), 415-436. https://journals.sagepub.com/doi/abs/10.1177/135638900300900404

Flipped classroom:

- Van der Ven, H., Rothaker, C., and Cashore, B. (2018). Do eco-labels prevent deforestation? Lessons from non-state market driven governance in the soy, palm oil and cocoa sectors. *Global Environmental Change* 52, 141-151. https://doi.org/10.1016/j.gloenvcha.2018.07.002
- McDermott, C. (2015). Seeing the forests behind the label: Why standards are not enough. TedxOxbridge talk, available at https://www.youtube.com/watch?v=f6dUzKrcrk4

Week 14: Towards a Fair and Inclusive Governance of Food Systems

Please note that in Week 14, some of the Sustainability module learning activities will take place on Friday instead of Monday.

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
6 December 2021, 10.00-11.30 CET	Lecture	Towards a Fair and Inclusive Governance of Food Systems	Population increase and economic growth put more and more pressure on available natural resources such as land and water. On top of this, globalisation is forging links between actors and places that are far removed from each other. In poor countries in particular, local communities are confronted with invisible ties incorporating them into 'global' markets and governance systems. In this lecture we will explore	1.5 hour	Dr. Guus van Westen (Utrecht University) and Dr. Carole-Anne Sénit (module coordinator)	Online (MS Teams)

			some of the issues that emerge from such translocal connections (e.g. 'resource grabbing'), and discuss institutional approaches for dealing with them (e.g. 'inclusive business models') with a focus on food systems.			
6 December 2021, 11.45-12.30 CET	Meet the expert!	COP 26 Café	Open discussion with panellists from civil society and academia on COP 26 in Glasgow	45 min	Jane Butler (Utrecht University), Sander Chan (Global Center on Adaptation), Andrew Deneault (German Development Institute), and Julia Horn (German Youth Organization Klimadelegation e.V. & Climate Action Network Europe)	Online (MS Teams)
10 December 2021, 10.00-12.00 CET	Workshop	Case Study on SDG 2	After a brief introduction to the topic of food and nutrition by a KCT Food Representative, students work in groups to critically assess an example of a governance arrangement on food systems (SDG 2). They pick one partnership related to SDG 2 on the SDGs partnership platform of the United Nations, assess it according to the	2 hours	Dr. Marjanneke Vijge (Utrecht University), Dr. Carole-Anne Sénit (Utrecht University) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities

			following normative lenses, and discuss their findings: (i) Inclusiveness: is the partnership diverse and inclusive and why? (ii) Effectiveness: how do the partnership activities allow to reach the goals and address the sustainability issue?			
10 December 2021, 13.00-14.00 CET	**Meet the expert!**	Business and sustainability in developing countries	Discussing stakeholder engagement and professional development with a representative of business.	1 hour	Prof. Subhasis Ray (Maynooth University) and Carole-Anne Sénit (Utrecht University)	Hybrid classroom 5 universities
Readings & other study material: - de Schutter, O. (2017). The political economy of food systems reform. *European Review of Agricultural Economics* 44 (3), 705–731. https://doi.org/10.1093/erae/jbx009 - Van Westen, G. (2021). Beyond the value chain: Local impacts of 'global' inclusive agribusiness investments – Examples from Ghana. In Zoomers, A., Leung, M., Otsuki, K., & van Westen, G. (eds.), *Handbook of Translocal Development and Global Mobilities* (pp. 58-75). Cheltenham, United Kingdom: Edward Elgar. - Rashed, A. H., & Shah, A. (2021). The role of private sector in the implementation of sustainable development goals. *Environment, Development and Sustainability* 23 (3), 2931-2948. https://doi.org/10.1007/s10668-020-00718-w						

Week 15: Collaborative Modes of Governance (1): Case Study on SDG 3

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location

13 December 2021, 10.00-12.00 CET	**Workshop**	Case Study on SDG 3	After a brief introduction to the topic of life and health by a KCT Life and Health Representative, students work in groups to critically assess an example of a public-private governance arrangement on life and health (SDG 3). They pick one partnership related to SDG 3 on the SDGs partnership platform of the United Nations, assess it according to the following normative lenses, and discuss their findings: (iii) Transparency: what provisions have been defined to ensure transparency of information? (iv) Accountability: how does the governance structure of the partnership allow for internal and external accountability?	2 hours	Prof. Katalin Felvinczi (Eötvös Loránd University), Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
13 December 2021, 13.00-14.00 CET	**Meet the expert!**	Being a civil servant: A broker of information and contacts	A conversation with Marcel van Nijnatten, Coordinator of the Food Security Unit at the Dutch Ministry of Agriculture, Nature and Food Quality	1 hour	Marcel van Nijnatten (Dutch Ministry of Agriculture, Nature and Food Quality) and Carole-Anne Sénit (Utrecht University)	Hybrid classroom 5 universities
Students receive written feedback on Assessment #3 bis.						
Readings & other study material:						

- Bäckstrand, K. (2006). Multi-stakeholder partnerships for sustainable development: Rethinking legitimacy, accountability and effectiveness. *European Environment* 16 (5), 290–306. https://doi.org/10.1002/eet.425
- Kramarz, T. (2020). *Forgotten Values: The World Bank and Environmental Partnerships*. Cambridge, MA: MIT Press.

Week 16: Collaborative Modes of Governance (2): Case Study on SDG 6

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
10 January 2022, 10.00-12.00 CET	**Workshop**	Case Study on SDG 6	After a brief introduction to the topic of water and sanitation by a KCT Water Representative, students work in groups to critically assess an example of a self-governance arrangement related to water management (SDG 6). They pick one partnership related to SDG 6 on the SDGs partnership platform of the United Nations, assess it according to the following normative lenses, and discuss their findings: (v) Integration and coherence: does the attainment of the main goal of the partnership hamper or enhance the achievement of other goals? (vi) Reflexivity: does the partnership include any provisions to ensure reflexivity, i.e. to critically reflect on its own performance and to	2 hours	Dr. Adam Tóth (Eötvös Loránd University), Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities

			reshape its goals, practices, and values accordingly?			
10 January 2022, 13.00-14.00 CET	**Meet the expert!**	Working within the United Nations	Discussing stakeholder engagement and professional development with a nongovernmental organization representative.	1 hour	Aashish Khullar (UNDESA, former Organizing Partner of the Children and Youth Major Group) and Carole-Anne Sénit (Utrecht University)	Hybrid classroom 5 universities
Readings & other study material: - Vermeulen, W. J. V. (2015). Self-governance for sustainable global supply chains: Can it deliver the impacts needed? *Business Strategy and the Environment* 24 (2), 73–85. https://doi.org/10.1002/bse.1804 - The Ecopolitics Podcast episode 2.13: Resources, Population, and the Global Environment: A Case Study in Water. https://www.ecopoliticspodcast.ca/episode-2-13-resources-population-and-the-global-environment-a-case-study-in-water/						

Week 17: Participatory Governance for Sustainability

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
17 January 2022, 10.00-11.45 CET	**Lecture**	Participatory Governance for Sustainability	In this lecture, students explore the contribution of participatory governance practices and solutions to addressing sustainability challenges. They critically reflect on the promises, successes and limits of participation for accelerating sustainability transformation.	1.75 hours	Dr. Carole-Anne Sénit (module coordinator) and Mathilde Imer (French Citizen Convention)	Hybrid classroom 5 universities

					(European Commission)	
17 January 2022, 12.00-13.00 CET	**Flipped classroom**	Can sustainability solutions be both democratic and efficient?	On the basis of the required readings for the week, students engage in a debate around a catchy, controversial question.	1 hour	Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
17 January 2022, 14.00-15.00 CET	**Meet the expert!**	Pursuing an academic career	Discussing professional development with an academic.	1 hour	Dr. Carel Dieperink (Utrecht University), and Dr. Carole-Anne Sénit (module coordinator)	Hybrid classroom 5 universities
Readings & other study material: - Blühdorn, I. (2013). The governance of unsustainability: Ecology and democracy after the post-democratic turn. *Environmental Politics* 22 (1), 16-36. https://doi.org/10.1080/09644016.2013.755005 - Pickering, J., Bäckstrand, K., & Schlosberg, D. (2020). Between environmental and ecological democracy: Theory and practice at the democracy-environment nexus. *Journal of Environmental Policy & Planning* 22 (1), 1-15. https://doi.org/10.1080/1523908X.2020.1703276 - The Ecopolitics Podcast episode 2.5: Global Ecopolitics after COVID-19, Social Movements and International ENGOs. https://www.ecopoliticspodcast.ca/episode-2-5-global-ecopolitics-after-covid-19-social-movements-and-international-engos/						
21 January 2022, 10.00-15.00 CET	**Sharing session** *(note this is a cross-module session)*	Presentations and Feedback	Students present to their peers and extra-academic actors their final assessment #4 bis. They pitch how their multi-stakeholder partnership may address the sustainability challenge they have selected, and how it fares against different normative analytical lenses (e.g., inclusiveness, transparency, accountability, effectiveness, integration	5 hours	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), and Dr. Jake Byrne (Transdisciplinary	Hybrid classroom 5 universities

			and coherence, reflexivity). They answer questions and receive feedback from their peers and extra-academic actors, based on a rubric provided by the module coordinators. Detailed schedule: 10:00-10:45: initial preparation and explainer videos 10:45-11:00: break 11:00-13:10 (including a 10 min break): presentations (10-12 min presentation / 8-10 min feedback / 3 groups of 5 students, divided into 3 parallel sessions) 13:10-14:00: lunch time 14:00-15:00: feedback		Research module coordinator)	

Week 18: Integrating Feedback

Week without contact hours. Students receive written feedback on their final assignment. They work in groups to integrate the feedback into their paper and hand in the final assignment.

Week 19: Reflection and Wrap-up

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location

31 January 2022, 10.00-12.00 CET	Sharing session	Dare to Share!	Students reflect on their learning trajectory and expectations for Phase 2 of the Master programme, based on different materials (introductory reflexive video, meme, and reflexive journal).	2 hours	Dr. Carole-Anne Sénit (module coordinator) and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
3 February 2022, 16.00-17.00 CET	Module evaluations	Module evaluations	Students fill in the evaluations of the modules of the Preparatory Phase.	1 hour	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne (Transdisciplinary Research module coordinator), and Bianca de Souza Nagasawa (Utrecht University)	Hybrid classroom 5 universities
3 February 2022, 17.00-19.00 CET	Social event	Celebrate session!	Tbd	2 hours	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne (Transdisciplinary Research module coordinator), and Bianca de Souza	Hybrid classroom 5 universities

					Nagasawa (Utrecht University)	
 *Students hand in Assessment #5 and discuss their learning trajectory.*						

Assessment table

Assessor (name)

Nr.	student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed	Indicator of domain assessed
1	8 September 2021, 23:59 CET	Introductory reflexive video	The student records a short introductory video (3-5 minutes) and uploads it to the dedicated folder in MS Teams. The student attaches the link to the video in Scorion. In the video, the student is expected to answer to the following question: 'How can I contribute to a better world?'. Specifically: (i) students introduce themselves, (ii) make one clear point ('a message/idea to take home'), and (iii) speak clearly. Students then give constructive feedback to videos of co-students in Scorion. The student sends the feedback form to their peers *[The names of the peers who are supposed to provide feedback to the student will be published on Moodle].*	Peer	Professional and personal development Communication	Demonstrates reflexive skills (7.1) Oral communication: Demonstrates expertise in the communicative skills to support their practice (5.1)

2	9 October 2021, 9.00 CET	Review synthesis on biodiversity	On the basis of the required readings for the week, students write in groups a 1000-1500 words synthesis that addresses the question of 'Why it is important to maintain biodiversity from a biological and ecological point of view'. *[Specific instructions will be uploaded to Moodle.]*	Peer & Teacher	Sustainability Communication Collaboration Digital skills	Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2) Written communication: Communicates effectively on complex issues that aim for behavioral change (5.3) Demonstrates expertise in the collaborative and facilitative skills to support their practice as a transdisciplinary team member (4.1) Demonstrates digital skills (8.3)
2 bis	4-8 October 2021	Biosphere dynamic quizz	Gradual quizzes in Moodle	Teacher	Sustainability Digital skills	Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2) Demonstrates digital skills (8.3)

3	~~8 November 2021, 10:00 CET~~ New deadline: 19 November 23:59	Video presentation of Analytical paper 'Analyzing a sustainability issue through multiple disciplinary lenses'	In a pre-recorded video, student groups present the main findings of their analytical paper, with a specific focus on whether and how transdisciplinary integration has allowed to reveal new aspects of the selected sustainability issue (10 min video presentation). Student groups upload the video on the dedicated folder in MS Teams; they attach the link to the video in Scorion. *[The names of the peers who are supposed to provide feedback to the student will be published on Moodle].*	Teacher and Peer	Communication Sustainability Transdisciplinarity	Oral communication: Communicates effectively on complex issues that aim for behavioral change (5.2) Oral communication: Demonstrates expertise in the communicative skills to support their practice (5.1) Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (1.1) Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2)

						Formulates an advanced understanding of transdisciplinary practice, knowledge and epistemologies (2.1) Reflects upon and integrates multiple disciplinary and transdisciplinary perspectives, to understand the relevant ethical issues and the role of active citizenship, in particular within a European context (2.2)
					Solving challenges	Analyses, investigates and evaluates complex societal challenges (3.1) Explains how sustainability challenges are caused, dealt with and addressed by various stakeholders (3.2)

3 bis	15 November 2021, 9.00 CET	Analytical paper 'Analyzing a sustainability issue through multiple disciplinary lenses'	Students collaborate in transdisciplinary teams to understand how the knowledge from different disciplines and actors relate to each other and to appraise the complexity of a specific sustainability issue. Student groups upload their paper directly into Scorion. *[Specific instructions will be uploaded to Moodle.]*	Teacher	Collaboration Sustainability	Demonstrates expertise in the collaborative and facilitative skills to support their practice as a transdisciplinary team member (4.1) Collaborates with relevant stakeholders e.g., colleagues, peers, experts, professionals, clients, and other external stakeholders (4.2) Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (1.1) Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on

					Transdisciplinarity Scholarship	sustainability issues and their interlinkages (1.2) Formulates an advanced understanding of transdisciplinary practice, knowledge and epistemologies (2.1) Reflects upon and integrates multiple disciplinary and transdisciplinary perspectives, to understand the relevant ethical issues and the role of active citizenship, in particular within a European context (2.2) Understands and critically evaluates research and literature and other data sources (6.1) Rigorously assesses, designs, and integrates

					Communication Solving challenges	different disciplinary and transdisciplinary research methodologies (6.2) Written communication: Demonstrates expertise in the communicative skills to support their practice (5.1) Analyses, investigates and evaluates complex societal challenges (3.1) Explains how sustainability challenges are caused, dealt with and addressed by various stakeholders (3.2) Uses a range of methodologies and theoretical frameworks to appraise the complexity of and solve societal challenges (3.3)

~~4~~	~~21 January 2022, 10:00 CET~~ Assignment merged with TR and SI	~~Oral presentation of research-action paper 'Building a multi-stakeholder partnership for the SDGs'~~	~~Student groups present the main findings of their research-action paper during a 10 minute-long group presentation. Each student individually presents 2 slides, for 1 minute per slide—following pecha kucha method—with a total of 10 slides and 10 minutes max. The presentation is then followed by feedback from peer students and extra-academic actors.~~	~~Peer, extra-academic actors~~	~~Communication~~ ~~Sustainability~~ ~~Solving challenges~~	~~Oral communication: Communicates effectively on complex issues that aim for behavioral change (5.2)~~ ~~Oral communication: Demonstrates expertise in the communicative skills to support their practice (5.1)~~ ~~Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2)~~ ~~Identifies, selects and devises robust, adaptable, ethical solutions, using intercultural perspectives (including gender) (3.5)~~

~~4 bis~~	~~28 January 2022, 10.00 CET~~ Assignment merged with TR and SI	~~Research action paper 'Building a multi-stakeholder partnership for the SDGs'~~	~~This assignment consists of building a multi-stakeholder partnership and related solutions for addressing the SDGs. Students in groups pick a sustainability challenge related to one of several SDGs. The final output is a report comprising three sections, each associated to one of the modules of the Preparatory Phase. For the Sustainability module, students will write Section 1, in which they will students define the challenge and explain why the intended partnership (e.g., aims, coalition of actors) is the most suitable to address the challenge based on normative lenses covered in previous weeks. Student groups upload their paper directly into Scorion.~~ ~~*[Specific instructions will be uploaded to Moodle.]*~~	~~Teacher~~	~~Sustainability~~ ~~Solving challenges~~ ~~Collaboration~~	~~Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2)~~ ~~Identifies, selects and devises robust, adaptable, ethical solutions, using intercultural perspectives (including gender) (3.5)~~ ~~Interprets and connects complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship (3.4)~~ ~~Demonstrates expertise in the collaborative and facilitative skills to support their practice as~~

						~~a transdisciplinary team member (team work) (4.1)~~ ~~Collaborates with relevant stakeholders e.g., colleagues, peers, experts, professionals, clients, and other external stakeholders (4.2)~~
5	31 January 2022, 9.00 CET	Learning trajectory meme	Students design and upload a 'meme' on Feedback Fruits where they reflect on their learning trajectory. Students may use, for example, the 'how it started vs. how it's going' template meme. Students then provide feedback and rate the memes of co-students on Feedback Fruits.	Self	Professional and personal development Sustainability	Demonstrates reflexive skills (7.1) Shows skills fostering lifelong learning (PLO7) (e.g., career development, self-management, feedback literacy) (7.2) Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2)
6	Continuous	Participation in the debates of the flipped classroom	Students actively participate in the discussion around catchy, controversial	Teacher	Communication	Oral communication: Communicates

			questions related to the topic addressed each week.		Sustainability	effectively on complex issues that aim for behavioral change (5.2) Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (1.1) Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2)
7	Date to be determined by student, according to selected topic	Position paper	Students select a question addressed in one of the flipped classrooms and write a position paper to address that question. The position paper should be no more than 1,000 words, exposing arguments for or against the selected topic from their own perspective or from the perspective of an extra-academic actor (e.g., NGO, business, government representative, etc.), and building on the required,	Teacher	Sustainability	Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (1.1)

			readings, lectures, and other research materials.		Scholarship Communication	Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages (1.2) Understands and critically evaluates research and literature and other data sources (6.1) Written communication: Communicates effectively on complex issues that aim for behavioral change (5.3) Communicates effectively with diverse stakeholders, e.g., clients, colleagues, peers, other relevant stakeholders and the public (5.2)
n/a	Continuous	Reflexive journal	Throughout the period of the module, students keep a weekly journal in the	Mentor	*This assessment is part of the mentor advice*	

			format of their choice (vlog, written diary, etc.) to reflect on their learning experience, gaining insights into their personal and professional development.		*form. Further information will be provided in the study guide.*	

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Study load

We expect students to invest 250 hours for this course. We have calculated this as follows: 18.5 hours for participation in 13 lectures; 43 hours of workshops, flipped classrooms, ‘meet the expert’ and sharing sessions; 63 hours of group work on group assessments; and 125.5 hours of self-study. Individual contact with faculty members in person or by e-mail has not been accounted for in this calculation.

Activity	*W0*	*W1*	*W2*	*W3*	*W4*	*W5*	*W6*	*W7*	*W8*	*W9*	*W10*	*W11*	*W12*	*W13*	*W14*	*W15*	*W16*	*W17*	*W18*	*W19*	*Total*
Lecture	0	0	1.5	1.5	1.5	1	1.5	1.5	0	1.5	1.5	0	1.5	2.5	1.5	0	0	1.5	0	0	18.5
Workshop/Flipped classroom	0	2	1	3	1	2	3	2	0	2	1	2	2	1	3	3	3	6	0	5	42
Group work	0	0	3	3	3	3	3	3	6	3	3	3	3	3	3	3	6	6	6	0	63
Self-study	4	4	8	7.5	8	6	8	8	8	8	8	8	8	7	7	8	6	2	2	0	125.5
Weekly total	4	6	13.5	15	13.5	10	15.5	14.5	14	14.5	13.5	13	14.5	13.5	14.5	14	15	15.5	8	5	**249**

Additional study materials

The module programme consists of 19 thematic weeks with different learning activities (lectures, flipped classrooms, workshops, sharing sessions, 'meet the expert'), (almost) all of which require the prior preparatory study of two or more scientific articles and other materials (e.g., podcasts). All required reading is listed in the detailed schedule of the module is either online available through the university library or will be made available on Moodle. In addition, we list in this manual below a selection of twenty important books that students might want to study in addition to the required readings. Given the breadth and tailor-made character of the module, we do not use a textbook.

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*The recommended list of readings will be incremented during the module.

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Preparatory Phase (Semester 1)

Social Innovation

Universitat de Barcelona · Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin · Utrecht University · Eötvös Loránd University | Budapest · Université de Montpellier

Module details

Module title:	Social Innovation
Module coordinator:	Dr. Jasper van Vught j.f.vanvught@uu.nl Utrecht University
Module deputy:	Prof. Dr. Joost Raessens Dr. Jake Byrne (Trinity College Dublin) Dr. Gabór Zemplén (Eötvös Loránd University Budapesty)
Teachers:	Dr. László Horváth (Eötvös Loránd University), Dr. Agnes Sarolta Fazekas (Eötvös Loránd University), Dr. Deborah Cole (Utrecht University), Dr. Jocelyn Ballantyne (Utrecht University), Dr. Attila Mráz (Eötvös Loránd University), Dr. Stefan Werning (Utrecht University), Sanne Sprenger (Utrecht University)
Start date – end date:	6 September 2021 – 31 January 2022
Assessments:	16

Module design and content

Module high-level learning aims:

Students will develop the knowledge and skills to turn ideas into action through an advanced understanding of the creative, communicative and innovation processes that drive sustainability transformations. They will be familiarized with the dimensions of social innovation and the design, creative and challenge -based thinking process and go through the various stages of this process to develop their own social innovation initiatives. They will acquire knowledge on the role of media in framing and communicating sustainability issues and critically asses and practice with a variety of digital tools to support their social innovation initiatives. They will also learn the skills and sensitivity to be alarmed by issues of inclusion and exclusion and unconscious biases when mapping stakeholders involved in or affected by sustainability issues and design ethical solutions that take into account various perspectives.

The module has three parts. In the introductory week, students take a hands-on playful approach to tackling sustainability challenges by playing a location based mobile game that invites students to come up with their sustainable interventions in their different cities. Students also participate in a three day hackathon to finally present their social innovation initiatives in previously defined problem spaces. In the second part of the module, students are introduced to the three general themes of the module: Social Innovation, Media and Communication and Stakeholder Engagement. Over several weeks, students acquire knowledge on the key concepts in these themes and engage in several assignments to implement the newly acquired knowledge in social innovation initiatives. The third and final part of the module if focused on student project work. In this part of the module, students go through the different design thinking steps to finally present their social innovation initiative.

Connection with other phases and modules:

Social Innovation is one of the three compulsory modules in the preparatory phase of the CHARM-EU Master programme in Global Challenges for Sustainability. In this phase, modules focus on core competencies grounded in contemporary issues and approaches in sustainability. In particular, the Social Innovation module acknowledges sustainability challenges to be wicked problems requiring innovative, playful and ethical solutions that take an inclusive approach to stakeholders involved in these challenges and solutions.

This module runs in parallel with Transdisciplinary Research and Sustainability. While the Sustainability module provides a solid foundation of knowledge, theories and approaches to study sustainable development issues and challenges. The Transdisciplinary Research module focuses on research methodologies and provides students with opportunities to practice in transdisciplinary/ multidisciplinary team to assess global sustainability challenges. In the Social Innovation module, students learn to develop solutions for sustainability transformations. Together, the modules of CHARM-EU's preparatory phase provide students with the knowledge, concepts and models to understand, analyse and address sustainability challenges within their context.

Module Learning Outcomes

On successful completion of this module, students should be able to:

- MLO 1.1: Critically evaluate and apply theories and concepts associated with creativity, innovation (social and traditional) and design/systems thinking. [PLO.2, PLO.6, PLO.7]
- MLO 1.2: Distinguish between clarification, dialogue, argument, persuasion and other rhetorical modes and demonstrate presentation, pitching, negotiation, and coordination skills. [PLO.1, PLO.5, PLO.6]
- MLO 1.3: Develop skills to work sensitively and professionally as peers and team members, demonstrating both empathy and leadership in the management and integration of diverse intercultural, interpersonal, intersocietal and inter/trans-disciplinary communication. [PLO.2, PLO.5, PLO.6, PLO.7]
- MLO 1.4: Critically appraise the ways in which diverse forms of media (including language) and technologies (can) help to frame and analyse sustainability issues and communicate these issues to multiple audiences to raise awareness and (playfully) construct civic engagement. [PLO.2, PLO. 5, PLO.6]
- MLO 1.5: Develop a broad professional skillset including project management, risk analysis, ethical market research, strategic planning, business modelling and horizon scanning to evidence and create solutions to address key societal challenges. [PLO.6]
- MLO 1.6: Understand different methods for mobilising political, social and business action for sustainability transitions, drawing critically on knowledge and theories around societal changes and transformations from different sustainability perspectives, including gender, intercultural and religious ones [PLO.1, PLO.2]
- MLO 1.7: Identify and reflect on what it means to have fixed versus growth mindsets, explain how they are developed, and how they can change over time. [PLO.2, PLO.6]
- MLO 1.8: Identify and critically appraise the many ways in which (understandings of) sustainability issues and their consequences involve matters of socio-cultural identity construction and politics (including gender, ethnicity, religion, education, geo-politics and generations) and consider these matters when designing for and assessing methods for social action. [PLO. 1, PLO.2, PLO.4]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Lecture	Students follow online or hybrid lectures delivered by expert guest teachers.
Workshop	Students work in groups to develop specific skills and competencies with the supervision or a teacher.
Sharing session	Students share with their peers the findings of their assignments and reflect on their learning trajectory, with the facilitation of a teacher.
Group work	Students work in (hybrid) subgroups, do hands-on research and work on their contribution to group assignments.

Study materials

These materials will be shared in the Virtual Learning Environment:

- obligatory literature/links to self-study sources;
- links to relevant websites;
- recommended (optional) literature.

Mobility activity in the module

CHARM-EU identifies mobility as a key tool for enhancing the quality of teaching and learning processes for all CHARM-EU students and teachers. CHARM-EU students and staff will be part of one university community with multiple campuses across countries creating a unified international ecosystem with seamless mobility flows and accompanying international activities.

Due to the uncertainties associated with the current Covid-19 pandemic, mobility in Phase 1 mainly consists of 'virtual' mobility. Virtual mobility will mainly be integrated in the format and content of the modules, and based on online intercultural learning and hybrid classrooms. In particular, the Sustainability module content includes diverse perspectives on social, economic, political and/or environmental issues and differences in professional practices across cultures. It provides a space for students from different cultural backgrounds to contribute relevant examples from their home country or community. In addition, learning activities include an international component and encourage students to compare/contrast how cultural influences can have an impact on the construction of knowledge around the world. Many activities aim to foster dialogue and collaborative learning between students from different cultural backgrounds to eventually increase the potential for deep learning and cross-cultural understanding. Finally, the study materials include diverse resources that explore different perspectives and allow students to develop their intercultural skills.

Module timetable[1]

Week 1:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
06/09 12.00-16.00 CET 07/09 10.00-11.00 CET	**Game**	Utrecht 2040	Students play the Utrecht 2040 game to 1) familiarize themselves with the SDGs, 2) become aware of existing sustainability initiatives in their cities, 3) come up with their own social innovation initiatives and 4) learn about their own inclination to act on sustainability issues.	**5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	In the city/ hybrid learning spaces/online
08/09 - 10/09 10.00-16.00 CET	**Workshop**	Hackathon	Students go through the design thinking process and come up with their own social innovation initiatives within a problem space developed in the world café exercise	**3 days**	Dr. Jasper van Vught (Utrecht University) and Dr. Jake Byrne (Trinity College Dubline)	hybrid learning spaces/ online
			Students pitch their social innovation initiative (assessment #1) and hand in their business model canvas (assessment #2) at the end of the week.			

[1] Please note that this content is subject to change

Week 2:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
16/09 10.00-11.00 CET	Lecture	Dimensions of social innovation	Students get introduced to the concept of innovation and social innovation (origins, definitions, processes).	1 hour	Dr. László Horváth (Eötvös Loránd University)	hybrid learning spaces/ online
16/09 11.00-12.30 CET	Workshop	Sustainability as a wicked problem in light of social innovations (case studies)	Students get introduced to the challenges and opportunities of the anthropocene (focusing on CHARM themes), work with a toolbox for wicked leadership and case studies about wicked problems connected to the themes of food, water, climate. Participants can try tools to address the issues presented in their case study followed by a joint discussion.	1.5 hours	Dr. László Horváth (Eötvös Loránd University)	hybrid learning spaces/ online
16/09 13.30-14.30 CET	Workshop	Reflection on hackathon project	Reflection on the hackathon project in light of lessons learnt from the lecture and workshop1.	1 hour	Dr. László Horváth (Eötvös Loránd University)	hybrid learning spaces/ online

Students hand in a brief reflection report on their hackathon project (assessment #3) at the end of the week.

Readings & other study material:

- Mulgan G. (2012) The Theoretical Foundations of Social Innovation. In: Nicholls A., Murdock A. (eds) *Social Innovation*. Palgrave Macmillan, London, pp. 33-65. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=1094920
- Portales, L. (2019). Social Innovation and Social Entrepreneurship. Fundamentals, Concepts, and Tools. Palgrave Macmillan, London. (Chapters 1-3, 13.)See: https://link-springer-com.proxy.library.uu.nl/book/10.1007%2F978-3-030-13456-3
- Hull, R. B., Robertson, D. P., & Mortimer, M. (2020). Leadership for Sustainability. Strategies for tackling wicked problems. Island Press, Washington. **(For workshop1).** https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=6341910

Suggestions for further reading

- Godin, B. (2015). Innovation contested. The Idea of Innovation over the Centuries. Routledge, New York. (Part II. Chapter 6. Social Innovation: From Scheme to Utopia). https://www-taylorfrancis-com.proxy.library.uu.nl/books/mono/10.4324/9781315855608/innovation-contested-beno%C3%AEt-godin
- Moulaert, F. MacCallum, D., Mehmood, A., & Hamdouch, A. (eds., 2013). The International Handbook on Social Innovation. Edward Elgar, Cheltenham. See: https://www-elgaronline-com.proxy.library.uu.nl/view/9781849809986.xml

Week 3:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
23/09 10.00-11.30	**Workshop**	Inclusion skills workshop	Students work with concrete societal challenges and learn the skills and sensitivity to be alarmed by matters of inclusion and exclusion.	**1.5 hours**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online

23/09 11.30-12.30	**Lecture**	Stakeholder Mapping 1: Human rights and inclusivity	Students learn about the basics of human rights and inclusion and connect these concepts to agent perspectives and motivations in sustainability challenges and how to empathise with them.	**1 hours**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online
23/09 13.30-15.00	**Workshop**	Persona Mapping	Students create fictional personas of 5 stakeholders (or stakeholder categories) involved in a specific case study (provided).	**1.5 hours**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online
	Students hand in a stakeholder map, including 5 personas and a document outlining potential stakeholder concerns and perspectives (assessment #4) at the end of the week.					
Readings & other study material: • Stephen P. Marks (2016). Human Rights: A Brief Introduction. School of Public Health, Harward University. Retrieved from: *https://cdn1.sph.harvard.edu/wp-content/uploads/sites/134/2016/07/Human-Rights-A-brief-intro-2016.pdf* • Shestack, J. J. (2017). The philosophic foundations of human rights. In *Human Rights* (pp. 3-36). Routledge. https://heinonline-org.proxy.library.uu.nl/HOL/PrintRequest?collection=journals&handle=hein.journals/hurq20&id=215&print=section&div=17&ext=.pdf&format=PDFsearchable&submit=Print%2FDownload						

Week 4:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
30/09 10.00-11.00	**Lecture**	Framing	Students learn about the various ways in which media frame sustainability problems	**1 hour**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
30/09 11.00-12.00	**Workshop**	Framing exercise	Students revisit challenge from week 1 and discuss how they have framed their challenge and solution and how else they could be framing these. In doing so, they draw from the literature discussed in the lecture.	**1 hour**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
30/09 13.00-15.00	**Workshop continuation**	Visual Essay	Students create a visual essay that shows a different framing of their hackathon challenge/solution and write a short explanation of their refined problem definition.	**2 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

Students hand in a visual essay of a different framing of a sustainability issue and a new problem definition (assessment #5) at the end of the week.

Readings & other study material:

- Lakoff, George. 2010. Why it Matters How We Frame the Environment. *Environmental Communication* 4:1, 70-81. https://www-tandfonline-com.proxy.library.uu.nl/doi/pdf/10.1080/17524030903529749?needAccess=true
- Bendor, Roy. 2018. *Interactive Media for Sustainability*. London: Palgrave Macmillan, chapter 1 (Mediation), pp. 1-24, and chapter 6 (Refractions), pp. 165-184. https://link-springer-com.proxy.library.uu.nl/content/pdf/10.1007/978-3-319-70383-1.pdf

Suggestions for further reading

- Willoquet-Maricondi, Paula. 2010. Shifting Paradigms: From Environmentalist Films to Ecocinema. In: *Framing the World*, 43-61. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3443955
- Lakoff, George. 2014. *Don't Think of an Elephant! Know Your Values and Frame the Debate*. Chelsea Green Publishing: White River Junction, Vermont. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=5149119

Week 5:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
07/10 10.00-11.00	Lecture	Design thinking	Students learn about creative thinking and how we might use the different steps in the design thinking and challenge based processes to tackle problems.	1 hour	Dr. Jake Byrne (Trinity College Dublin)	hybrid learning spaces/ online
07/10 11.00-12.00	Workshop	Digital Skills development	Students learn about and practice with Whiteboard as a digital tool that fosters collaboration and creative thinking.	1 hour	Dr. Jake Byrne (Trinity College Dublin)	hybrid learning spaces/ online
07/10 13.00-15.00	Workshop	Redefining problem spaces and rearranging groups	Students redefine the problem space (based on a list of problem spaces created in week 1) create a mindmap (in whiteboard) for	2 hours	Dr. Jake Byrne (Trinity College Dublin)	hybrid learning spaces/ online

			their problem space and give an elevator pitch			

Students hand in a mindmap that visualizes their ideation process (assessment #6) at the end of the week.

Readings & other study material:

- Brown, T., & Wyatt, J. (2010). *Design thinking for social innovation*. Development Outreach, 12(1), 29-43. https://openknowledge.worldbank.org/bitstream/handle/10986/6068/deor_12_1_29.pdf?sequence=1
- Challenge Institute. (2018). *Framework | Challenge Based Learning.* https://www.challengebasedlearning.org/framework/
- Stanford d.school. (2020, August 24). *Design Thinking Bootleg*. https://dschool.stanford.edu/resources/design-thinking-bootleg

Suggestions for further reading

- Dunne, A, and Raby, B. (2013). *Speculative Everything Design, Fiction, and Social Dreaming*. Cambridge, MA: MIT Press. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3339745
- Pedgley, O. (2007). Capturing and analysing own design activity. *Design Studies*, 28(5), 463-483. https://www-sciencedirect-com.proxy.library.uu.nl/science/article/pii/S0142694X07000257?casa_token=VOFXV7kVaM0AAAAA:T3LDLsX2oojdAWQBeDZ8fZivmxo5zNRlkWxOLkqCliL8LYi2P3ACrjw1tvJjKnA5sMa2hDCx
- Gray, D., Brown, S., & Macanufo, J. (2010). *Gamestorming: A playbook for innovators, rulebreakers, and changemakers*. "O'Reilly Media, Inc..
- Plattner, H., Meinel, C., & Leifer, L. (2013). *Design thinking-Understand-Improve-Apply*, Springer. https://link-springer-com.proxy.library.uu.nl/book/10.1007%2F978-3-642-13757-0

Week 6:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
14/10 9.00-12.00	Conference	Pathways to sustainability conference day	Students participate in he Pathways to Sustainability conference on 14 October 2021. This conference	3 hours	N/A	hybrid learning spaces/ online

			provides an ideal opportunity for reflecting on how knowledge and ideas about innovation for sustainability can be shared effectively.			
14/10 13.00-15.00	**Workshop**	Communicating with diverse stakeholders	Students further reflect on the communication strategies of the conference speakers to help them think about translating their own key project concepts and ideas for various stakeholder audiences using tools for creating inclusive texts.	**2 hours**	Dr. Deborah Cole and Dr. Jocelyn Ballantyne (Utrecht University)	hybrid learning spaces/ online
 *Students hand in a project management communication plan (assessment #7) at the end of the week.*						
Readings & other study material: • Briggs, Charles. 2000. Interview. *Journal of Linguistic Anthropology* 9(1-2):137-140. https://anthrosource-onlinelibrary-wiley-com.proxy.library.uu.nl/doi/abs/10.1525/jlin.1999.9.1-2.137?sid=worldcat.org • The *American Anthropological Association Statement on Ethnography and Institutional Review Boards*: https://www.americananthro.org/ParticipateAndAdvocate/Content.aspx?ItemNumber=1652						

Week 7:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
21/10	**Lecture**	Rhetorics and green media	Students learn about persuasion and the role that	**1.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

10.00- 11.30			different media can play in this process			
21/10 11.30- 12.30	**Sharing session**	Dare to share!	Students reflect on their learning trajectory and share some of the achievements and struggles that they included in their reflexive journal.	**1 hour**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
21/10 13.30- 15.00	**Workshop**	Persuasion exercise	Students design a protest sign using the rhetorical strategies learned in the lecture.	**1.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

Students hand in a fleshed out communication product from their communication plan (assessment #8) at the end of the week.

Readings & other study material:

- Parham, John. 2016. Green Media and Popular Culture. An Introduction: Foreword, xiii-xxv and Chapter 1, 1-35. Can be found here.

Required viewing:

- The Shell Trial / De zaak Shell (http://dezaakshell.nl/the-shell-trial). Go to: https://vimeo.com/586251892 (password: HighLow2021), duration: 1:22:25

Suggestions for further reading

- Bogost, I. (2007). *Persuasive games. The expressive power of videogames*. Cambridge, MA: The MIT Press, 1-64 (Procedural Rhetoric). http://web.b.ebscohost.com.proxy.library.uu.nl/ehost/detail/detail?vid=0&sid=1b0f58b3-a567-4b91-ba68-628565bc98f5%40sessionmgr101&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=190964&db=nlebk
- Fogg, B.j. (2003). *Persuasive Technology. Using computers to change what we think and do.* San Francisco: Morgan Kaufman
- Raessens, Joost. 2018. Ecogames. Playing to Save the Planet. In: *Cultural Sustainability. Perspectives from the Humanities and Social Sciences*, 232-245. https://www-taylorfrancis-com.proxy.library.uu.nl/chapters/edit/10.4324/9781351124300-18/ecogames-joost-raessens?context=ubx&refId=97bfbde7-e7f7-4e5f-a9d4-d617591467a7
- Raessens, Joost. 2019. Collapsus, or How to Make Players Become Ecological Citizens. In: *The Playful Citizen*, 92-120. https://www.aup.nl/en/book/9789048535200/the-playful-citizen.

Week 8 reading week

Week 9

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
04/11 10.00-11.30	**Workshop**	Inclusivity workshop	Students engage in exercises to become aware of the different dimensions of inclusivity and human rights.	**1.5 hours**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online
04/11 11.30-12.30	**Lecture**	Norms of inclusivity	Students learn about norms of inclusivity: legal, political and ethical and instrumental and non-instrumental.	**1 hour**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online
04/11 13.30-15.00	**Workshop**	Role play exercise	Students do a role play exercise using the different personas mapped in week 3 and reflect on different	**1.5 hours**	Dr. Agnes Sarolta Fazekas and Dr. Attila Mráz (Eötvös Loránd University)	hybrid learning spaces/ online

			expectations on aspects of inclusion			

Readings & other study material:

- Excerpts from the *UN Guiding Principles on Business and Human Rights*. Read the text set in bold in Section II. ("The Corporate Responsibility to Respect Human Rights"). The rest is recommended.
- The Valuable 500. https://www.thevaluable500.com/the-valuable-500/ Check the commitments of at least 3 companies of your choice.
- Denise Brodey. (2019). This Woman Is Making Disability Inclusion A Leadership Issue. Forbes Magazine, January 29, 2019. https://www.forbes.com/sites/denisebrodey/2019/01/29/this-woman-is-making-disability-inclusion-a-leadership-issue/

Suggestions for further reading

- Elizabeth Anderson. (2006). The Epistemology of Democracy. *Episteme* 3(1-2): 8-22. [on the instrumental vs. non-instrumental significance of diversity & inclusion, reflecting on community forestry cases in South Asia]. https://www-cambridge-org.proxy.library.uu.nl/core/journals/episteme/article/epistemology-of-democracy/F86F1D124D2E081116611043BD54CBD9
- Agarwal, B. (2001). Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework. *World Development* 29(10): 1623–48. https://www-sciencedirect-com.proxy.library.uu.nl/science/article/pii/S0305750X01000663?casa_token=VyOiklqcjs0AAAAA:oj_Hq17eT4aZsKthnj3o8GQv45MOfUD4srLUkJ9AdyEZp6QDPK7PicZ72Ae7dDTXehiEqLp_ Iris Marion Young. (2000). *Inclusion and Democracy*. Oxford: OUP. "Introduction": pp. 1-16; "External and Internal Exclusion": pp. 53-57. https://oxford-universitypressscholarship-com.proxy.library.uu.nl/view/10.1093/0198297556.001.0001/acprof-9780198297550

Week 10

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
11/11 10.00-11.30	Lecture	Tool criticism	Students learn to take a more critical perspective on the role of media technologies in social entrepreneurship (i.e.,	1.5 hours	Dr. Stefan Werning (Utrecht University)	hybrid learning spaces/ online

			Kickstarter), and learn to define the notion of a tool.			
11/11 11.00-13.00	**Workshop**	Affordance analysis workshop	Students learn to discuss how the (conceptual) 'tools' we use to think about data shape what we're looking for in the data.	**1.5 hours**	Dr. Stefan Werning (Utrecht University)	hybrid learning spaces/ online
11/11 14.00-15.00	**Workshop**	Playing with data workshop	Students learn to think about how modifying tools (or: playing with tools) impact our thinking, and how can we incorporate it into research practice.	**1 hour**	Dr. Stefan Werning (Utrecht University)	hybrid learning spaces/ online

Students hand in a sample affordance analysis of a common tool they (intent to) use for their social innovation project (assessment #9) at the end of the week.

Readings & other study material:

- Curinga, Matthew X. 2014. "Critical Analysis of Interactive Media with Software Affordances." *First Monday* 19 (9). http://firstmonday.org/ojs/index.php/fm/article/view/4757/4116.
- Brabham DC. How crowdfunding discourse threatens public arts. *New Media & Society*. 2017;19(7):983-999. https://journals-sagepub-com.proxy.library.uu.nl/doi/pdf/10.1177/1461444815625946
- Masson, Eef. 2017. "Humanistic Data Research. An Encounter between Epistemic Traditions." In The Datafied Society. Studying Culture through Data, edited by Mirko Schäfer and Karin Van Es, 25–38. Amsterdam: Amsterdam University Press. https://www-degruyter-com.proxy.library.uu.nl/document/doi/10.1515/9789048531011/html

Suggestions for further reading

- Sherry Turkle, *Evocative Objects : Things We Think With*, MIT Press, 2011. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3338681

- Van Es, Karin, Maranke Wieringa and Mirko Tobias Schäfer. 2018. Tool criticism: From Digital Methods to Digital Methodology. In Ryes, Everardo, Mark Bernstein, Giancarlo Ruffo, and Imad Saleh (eds.) *Proceedings of the 2nd International Conference on Web Studies.* https://dl-acm-org.proxy.library.uu.nl/doi/10.1145/3240431.3240436

Week 11

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
18/11 10.00-12.30	Lecture	Video workshop	Students are introduced to basic methods of documentary filmmaking, interviewing 'on camera', sound recording and key aspects of camerawork. Students learn how to integrate video, audio, photography and text in the construction of an an explainer video to communicate their SI initiative to extra-academic stakeholders	2.5 hours	Dr. Deborah Cole and Sanne Sprenger (Utrecht University)	hybrid learning spaces/ online
18/11 13.30-15.00	Workshop	Video workshop	Students are introduced to basic methods of documentary filmmaking, interviewing 'on camera', sound recording and key aspects of camerawork.	1.5 hours	Dr. Deborah Cole and Sanne Sprenger (Utrecht University)	hybrid learning spaces/ online

			Students learn how to integrate video, audio, photography and text in the construction of an an explainer video to communicate their SI initiative to extra-academic stakeholders			
	Students hand in a plan for their explainer video of their social innovation initiative (assessment #10) at the end of the week.					

Week 12

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
25/11 10.00-10.30	Lecture	Project work: Empathy	Students get a quick recap on the design thinking step of empathy and take their knowledge on stakeholder mapping, inclusivity and communication to start working on their own group projects	30 min	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
25/11 10.30-12.30	Workshop	Stakeholder mapping exercise	Students map persona's and do a role play exercise as a start for their own project. They then (re)define their problem.	2 hours	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

25/11 13.30-14.30	**Sharing / feedback session**	Dare to share!	Students reflect on their learning trajectory and share some of the achievements and struggles that they included in their reflexive journal and provide peer feedback on work thus far.	**1 hour**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
 *Students hand in a stakeholder map, including 5 personas and a redefinition of their problem statement for their projects (assessment #11) at the end of the week.*						
Readings & other study material: - Gasparini, A. A. (2015) Perspective and use of empathy in design thinking. *Advancements in Computer-Human Interaction (ACHI)*, Lisbon. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.672.7784&rep=rep1&type=pdf						

Week 13

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
02/12 10.00-10.30	**Lecture**	Project work: Ideation	Students get a quick recap on the design thinking step of ideation and take their knowledge on creative thinking and apply that to their own group projects	**30 min**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
02/12 10.30-12.30	**Workshop**	Ideation exercise	Students engage in a creative thinking exercise, generating “how might we questions” to	**2 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

			generate ideas for their social innovation initiatives.			
02/12 13.30-15.00	**Sharing / feedback session**	Dare to share!	Students reflect on their learning trajectory and share some of the achievements and struggles that they included in their reflexive journal and provide peer feedback on work thus far.	**1.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
 *Students hand in a mindmap, business model canvas and video of their elevator pitch (assessment #12) at the end of the week.*						
Readings & other study material: - Stanford d.school. (2020, August 24). *Design Thinking Bootleg*. https://dschool.stanford.edu/resources/design-thinking-bootleg						

Week 14

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
09/12 10.00-12.30	**Workshop**	Game prototyping workshop	Students model their social innovation initiative as a game (rules, players, feedback loop)	**2.5 hours**	Dr. Stefan Werning (Utrecht University)	hybrid learning spaces/ online
09/12 13.30-15.00	**Workshop**	Game prototyping workshop	Students model their social innovation initiative as a game (rules, players, feedback loop)	**1.5 hours**	Dr. Stefan Werning (Utrecht University)	hybrid learning spaces/ online

Students hand in a pen and paper prototype of their/a product/service of their social innovation initiative (assessment #13) at the end of the week.
Readings & other study material: - Werning, Stefan, and Jasper van Vught (In press) Taking Playful Scholarship Seriously. Discursive Game Design as a Means of Tackling Intractable Controversies. *Eludamos special issue: playfulness across media.*

Week 15

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
16/12 10.00-11.00	Lecture	Playtesting as a research method	Students get introduced to different forms of playtesting as a research method.	1 hour	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
16/12 11.00-12.30	Workshop	Playtesting exercise	Students learn about different ways of playtesting their SI initiative and then playtest their own project	1.5 hours	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
16/12 13.30-14.30	Sharing / feedback session	Dare to share!	Students reflect on their learning trajectory and share some of the achievements and struggles that they included in their reflexive journal and provide peer feedback on work thus far.	1 hour	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
Readings & other study material:						

- van Vught, J.F. & Glas, R. (2018). *Considering play: From method to analysis*. *Transactions of the Digital Games Research Association (ToDIGRA)*, 4 (2), (pp. 205-242). http://todigra.org/index.php/todigra/article/view/94/145

XMAS break (3 weeks)

Week 16

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
14/01 10.00-12.30	**Sharing / feedback session**	Project work: reflection and Iteration/modification, and presentation preparation	Students share their progress and reflect on their social innovation initiative after prototyping and testing and make the necessary changes. They also prepare for the final conference presentation in week 17.	**2.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

Week 17

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
20/01 10.00-12.30	**Sharing / feedback session**	Presentation prep support session	Students have the opportunity to share their progress and receive feedback from peers and teachers	**2.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online

21/01 10.00-15.00	Conference	Conference: Project presentations and feedback	In this conference, students present to their peers and extra-academic actors their final social innovation initiative (final report assessment #16). They first create a short (3 min.) explainer video about their initiative to draw in a crowd for their presentations. They then pitch how their multi-stakeholder partnership may address the sustainability challenge they have selected, and how it fares against different normative analytical lenses (e.g., inclusiveness, transparency, accountability, effectiveness, integration and coherence, reflexivity). In doing so, they provide insights into their design thinking process (empathy, ideation, prototype) and delve into the concrete steps to take to turn their ideas into action (e.g., by discussing their communication plan). They finally answer questions and receive feedback from their	5 hours	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), and Dr. Jake Byrne (Transdisciplinary Research module coordinator)	hybrid learning spaces/ online

			peers and extra-academic actors, based on a rubric provided by the module coordinators. Detailed schedule: 10:00-10:45: initial preparation and explainer videos 10:45-11:00: break 11:00-13:10 (including a 10 min break): presentations (10-12 min presentation / 8-10 min feedback / 3 groups of 5 students, divided into 3 parallel sessions) 13:10-14:00: lunch time 14:00-15:00: feedback			
	*On Wednesday (19/02) of this week, students hand in their updated explainer video (assessment #14) and during the conference, students present their final social innovation initiative (assessment #15).*					

Week 18

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location

27/01 10.00-12.30	**Sharing session**	Conference feedback incorporation and writing support session	Students share their conference experiences and the feedback they received and take steps to incorporate that feedback in their final reports.	**2.5 hours**	Dr. Jasper van Vught and Prof. Dr. Joost Raessens (Utrecht University)	hybrid learning spaces/ online
	*Students had in their final report (assessment #16).*					

Week 19

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
03/02 16.00-17.00 CET	**Module evaluations**	Module evaluations	Students fill in the evaluations of the modules of the Preparatory Phase.	**1 hour**	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne (Transdisciplinary Research module coordinator), and Bianca de Souza Nagasawa (Utrecht University)	hybrid learning spaces/ online
03/02 17.00-19.00 CET	**Social event**	Celebrate session!	Tbd	**2 hours**	Dr. Jasper van Vugt (Social Innovation module coordinator), Dr. Carole-Anne Sénit (Sustainability module coordinator), Dr. Jake Byrne	hybrid learning spaces/ online

					(Transdisciplinary Research module coordinator), and Bianca de Souza Nagasawa (Utrecht University)	

Assessment table

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	Week 1: 10/09	Hackathon project: Pitch	Students pitch their social innovation initiatives as outcomes of the hackathon. Group project submission with individual contribution highlighted (in brief reflection report)	Peers	SC, Coll, Oral Comm, PPD, DS
2	Week 1: 10/09	Hackathon project: business model canvas	Students hand in their business model canvas. Group project submission with individual contribution highlighted (in brief reflection report)	Supervisors/ facilitators	SC, Coll, PPD,
3	Week 2: 17/09	Hackathon project: reflection and modification assignment	Students write a brief reflection report about their SI initiative from week 1 and indicate where and why modifications will be made (individual) They then combine the different modifications into one modified business model canvas. (Group)	Supervisors/ facilitators **and** peers	SC, Coll, Writ Comm,
4	Week 3: 24/09	Stakeholder map including 5 personas.	Students write a stakeholder map with 5 fleshed out personas and a document outlining potential stakeholder concerns and perspectives	Supervisors/ facilitators	TD, SC, Schol,

			Group project submission with individual contribution highlighted (in brief reflection report)		
5	Week 4: 30/09	Visual essay framing a sustainability issue and a refined problem definition.	Students create a visual essay which shows a different framing of the sustainability issue they aim to be tackling. Group project submission with individual contribution highlighted (in brief reflection report)	Supervisors/ facilitators and peers	Writ and Oral Comm, Schol,
6	Week 5: 07/10	Communication observations and self reflection	Students create a mindmap which visualizes their ideation process from their initial problem statement to the consensus on their final idea. Group project submission with individual contribution highlighted (in brief reflection report)	Peers	SC, Coll, Oral Comm, DS
7	Week 6: 14/10	Project management communication plan	Students attend multiple sessions of the conference Pathways to Sustainable noting their perceived effectiveness of the speakers' communication strategies for communicating to a diverse audience in terms of inclusion and empathy and write a brief individual reflection on their own communication strategies within their teams and with future stakeholders.	Supervisors/ facilitators	SC, Writ Comm, Oral Comm, Ppd

			Individual assessment		
8	Week 7: 21/10	Fleshed out communication product	Students look for an upcoming local protest to participate in, individually design a protest sign, bring this sign to the protest and document their participation in the protest (photographing their sign as well as 1 other one using interesting rhetorical strategies), and write a reflection on the protest (its goal and organizers/stakeholder map) and the rhetorical strategies used in their sign as well as one other used in the protest.	Peers	SC, Writ Comm
9	Week 10: 11/11	Affordance analysis	For this assessment, students do a comparative affordance analysis of the eco-app Joulebug and one other eco-app of their choice. In doing so, students write a 1000 words reflection of the various ways and levels in which the tools incentivise/steer behaviour and frame eco-issues in a specific way (i.e., frame our thinking). Students also imagine small changes to the applications and implications of those changes.	Supervisors/ facilitators	Schol, DS
10	Week 11: 21/11	Explainer video 1.0	Students create a plan for their explainer video of their social innovation initiative.	Supervisors/ facilitators **and** peers	Coll, Oral Comm, DS

			Group project submission including grop report outlining contributions		
11	Week 12: 26/11	Stakeholder map and (re)definition of problem statement	Students write a stakeholder map with 5 fleshed out personas and (re)define their problem statement. Group project submission with individual contribution highlighted (in brief reflection report)	Peers	TD, SC, Schol,
12	Week 13: 03/12	Mindmap, Business model canvas & Elevator Pitch	Students create a mindmap which visualizes their ideation process from their initial problem statement to the consensus on their final idea. They flesh out this first idea in a business model canvas and finally record a video of an elevator pitch of their idea. Group project submission with individual contribution highlighted (in brief reflection report)	Supervisors/ facilitators and peers	SC, Coll, Oral Comm, DS
13	Week 14: 09/12	Pen and Paper prototype of product/service	Students create a pen and paper prototype which visualizes (and/ or makes playable) the SI initiative (product or service). Group project submission with individual contribution highlighted (in brief reflection report)	Peers	SC, Coll, DS

14	Week 17: 19/01	Explainer video 2.0	Students create/update their explainer video of their social innovation initiative which functions as a pitch for their final presentations in the conference. Group project submission with individual contribution highlighted (in brief reflection report)	Peers	Coll, Oral Comm, DS
15	Week 17: 21/01	Conference presentation	Students present their final social innovation initiative in an online conference format to different extra-academic stakeholders. Group project submission with individual contribution highlighted (in brief reflection report)	Academics/extra-academic stakeholders **and** peers	TD, SC, Coll, Oral Comm, Schol, Sus
16	Week 18: 28/01	Final report	To include: The design process (Group): • (Empathizing) Market research report including stakeholder map/personas • (Defining) Problem statement • (Ideation) Mindmap, with several "how might we" questions and a business model canvas • (Prototyping) a pen and paper prototype	Supervisors/ facilitators	TD, SC, Coll, Oral and Writ Comm, Schol, DS

			(visualization) of the social innovation initiative (service and/ or product) • Communication plan with one case example (of a communication strategy) fleshed out • Explainer video Self-assessment (individual): • Contributions to the group project at every step of the way • Entrepreneurial/ growth mindset journey • Observation report on communication skills • Including some target exercises		
17	Continuous	Self-reflection/self-assessments	Individual	Self	PPD

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Literature/reading list *

Week 2:

- Mulgan G. (2012) The Theoretical Foundations of Social Innovation. In: Nicholls A., Murdock A. (eds) *Social Innovation*. Palgrave Macmillan, London.
- Portales, L. (2019). Social Innovation and Social Entrepreneurship. Fundamentals, Concepts, and Tools. Palgrave Macmillan, London. (Chapters 1-3, 13). https://link-springer-com.proxy.library.uu.nl/book/10.1007%2F978-3-030-13456-3

Suggestions for further reading

- Godin, B. (2015). Innovation contested. The Idea of Innovation over the Centuries. Routledge, New York. (Part II. Chapter 6. Social Innovation: From Scheme to Utopia)
- Moulaert, F. MacCallum, D., Mehmood, A., & Hamdouch, A. (eds., 2013). The International Handbook on Social Innovation. Edward Elgar, Cheltenham. (Selected chapters). https://www-elgaronline-com.proxy.library.uu.nl/view/9781849809986.xml
- Hull, R. B., Robertson, D. P., & Mortimer, M. (2020). Leadership for Sustainability. Strategies for tackling wicked problems. Island Press, Washington. (For workshop1).

Week 3:

- Shestack, J. J. (1998). The philosophic foundations of human rights. Human Rights Quarterly, 20(2), 201-234. https://heinonline-org.proxy.library.uu.nl/HOL/PrintRequest?collection=journals&handle=hein.journals/hurq20&id=215&print=section&div=17&ext=.pdf&format=PDFsearchable&submit=Print%2FDownload
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Week 4:

- Lakoff, George. 2010. Why it Matters How We Frame the Environment. *Environmental Communication* 4:1, 70-81. https://www-tandfonline-com.proxy.library.uu.nl/doi/pdf/10.1080/17524030903529749?needAccess=true
- Bendor, Roy. 2018. Imagination. In: *Interactive Media for Sustainability*. London: Palgrave Macmillan, 129-164. https://link-springer-com.proxy.library.uu.nl/content/pdf/10.1007/978-3-319-70383-1.pdf

Suggestions for further reading

- Willoquet-Maricondi, Paula. 2010. Shifting Paradigms: From Environmentalist Films to Ecocinema. In: *Framing the World*, 43-61. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3443955
- Lakoff, George. 2014. *Don't Think of an Elephant! Know Your Values and Frame the Debate*. Chelsea Green Publishing: White River Junction, Vermont.
- Parham, John. 2016. *Green Media and Popular Culture. An Introduction*. London: Palgrave Macmillan.

Week 5:

- Brown, T., & Wyatt, J. (2010). *Design thinking for social innovation*. Development Outreach, 12(1), 29-43. https://openknowledge.worldbank.org/bitstream/handle/10986/6068/deor_12_1_29.pdf?sequence=1
- Challenge Institute. (2018). *Framework | Challenge Based Learning.* https://www.challengebasedlearning.org/framework/
- Stanford d.school. (2020, August 24). *Design Thinking Bootleg*. https://dschool.stanford.edu/resources/design-thinking-bootleg

Suggestions for further reading

- Dunne, A, and Raby, B. (2013). *Speculative Everything Design, Fiction, and Social Dreaming*. Cambridge, MA: MIT Press. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3339745
- Pedgley, O. (2007). Capturing and analysing own design activity. *Design Studies*, 28(5), 463-483. https://www-sciencedirect-com.proxy.library.uu.nl/science/article/pii/S0142694X07000257?casa_token=VOFXV7kVaM0AAAAA:T3LDLsX2oojdAWQBeDZ8fZivmxo5zNRlkWxOLkqCliL8LYi2P3ACrjw1tvJjKnA5sMa2hDCx
- Gray, D., Brown, S., & Macanufo, J. (2010). *Gamestorming: A playbook for innovators, rulebreakers, and changemakers*. "O'Reilly Media, Inc..
- Plattner, H., Meinel, C., & Leifer, L. (2013). *Design thinking-Understand-Improve-Apply*, Springer. https://link-springer-com.proxy.library.uu.nl/book/10.1007%2F978-3-642-13757-0

Week 6:

- Walford, Geoffrey. 2009. For ethnography. *Ethnography and Education* 4(3):271–82. https://www-tandfonline-com.proxy.library.uu.nl/doi/full/10.1080/17457820903170093?casa_token=jjWzVLdxlNAAAAAA%3Aa0mGJjWp-kFzasyVqHLBuD-XdOqtFAqNwG9N0_iayyR68RGlOXyWQx6Tas0ZM5J_vthVvxUdWks
- https://www.americananthro.org/ParticipateAndAdvocate/Content.aspx?ItemNumber=1652
- Cole, Deborah. 2019. Looking for rapport in the metacommunicative features of an ethnographic interview. In *Rapport and the discursive co-construction of social relations in fieldwork encounters* (Language and Social Life series), Zane Goebel, ed. Berlin: De Gruyter.
- Briggs, Charles. 2000. Interview. Journal of Linguistic Anthropology 9(1-2):137-140. https://anthrosource-onlinelibrary-wiley-com.proxy.library.uu.nl/doi/abs/10.1525/jlin.1999.9.1-2.137?sid=worldcat.org
- Nelson, R. (2006). Practice-as-research and the problem of knowledge. *Performance Research*, 11(4), 105- 116. https://www-tandfonline-com.proxy.library.uu.nl/doi/full/10.1080/13528160701363556

Week 7:

- Raessens, Joost. 2019. Collapsus, or How to Make Players Become Ecological Citizens. In: *The Playful Citizen*, 92-120. https://www.jstor.org/stable/j.ctvcmxpds.8?refreqid=excelsior%3Ac4fb174879a7ddfa438b13776cea5264&seq=1#metadata_info_tab_contents.
- Bendor, Roy. 2018. Refractions. In: *Interactive Media for Sustainability*. London: Palgrave Macmillan, 165-184. https://link-springer-com.proxy.library.uu.nl/content/pdf/10.1007/978-3-319-70383-1.pdf

Suggestions for further reading

- Bogost, I. (2007). *Persuasive games. The expressive power of videogames*. Cambridge, MA: The MIT Press, 1-64 (Procedural Rhetoric). http://web.b.ebscohost.com.proxy.library.uu.nl/ehost/detail/detail?vid=0&sid=1b0f58b3-a567-4b91-ba68-

628565bc98f5%40sessionmgr101&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=190964&db=nlebk

- Fogg, B.j. (2003). *Persuasive Technology. Using computers to change what we think and do.* San Francisco: Morgan Kaufman. https://www-sciencedirect-com.proxy.library.uu.nl/book/9781558606432/persuasive-technology
- Raessens, Joost. 2018. Ecogames. Playing to Save the Planet. In: *Cultural Sustainability. Perspectives from the Humanities and Social Sciences*, 232-245. https://www-taylorfrancis-com.proxy.library.uu.nl/chapters/edit/10.4324/9781351124300-18/ecogames-joost-raessens?context=ubx&refId=97bfbde7-e7f7-4e5f-a9d4-d617591467a7

Week 9:

- Excerpts from the *UN Guiding Principles on Business and Human Rights*.
- Iris Marion Young. (2000). *Inclusion and Democracy*. Oxford: OUP. "Introduction": pp. 1-16; "External and Internal Exclusion": pp. 53-57. https://oxford-universitypressscholarship-com.proxy.library.uu.nl/view/10.1093/0198297556.001.0001/acprof-9780198297550
- Elizabeth Anderson. (2006). The Epistemology of Democracy. *Episteme* 3(1-2): 8-22. [on the instrumental vs. non-instrumental significance of diversity & inclusion, reflecting on community forestry cases in South Asia]. https://www-cambridge-org.proxy.library.uu.nl/core/journals/episteme/article/epistemology-of-democracy/F86F1D124D2E081116611043BD54CBD9
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Week 10:

- Brabham DC. How crowdfunding discourse threatens public arts. *New Media & Society*. 2017;19(7):983-999. https://journals-sagepub-com.proxy.library.uu.nl/doi/pdf/10.1177/1461444815625946
- Light B, Burgess J, Duguay S. The walkthrough method: An approach to the study of apps. *New Media & Society*. 2018;20(3):881-900. https://journals-sagepub-com.proxy.library.uu.nl/doi/full/10.1177/1461444816675438
- Masson, Eef. 2017. "Humanistic Data Research. An Encounter between Epistemic Traditions." In The Datafied Society. Studying Culture through Data, edited by Mirko Schäfer and Karin Van Es, 25–38. Amsterdam: Amsterdam University Press. https://www-degruyter-com.proxy.library.uu.nl/document/doi/10.1515/9789048531011/html

Suggestions for further reading

- Sherry Turkle, *Evocative Objects : Things We Think With*, MIT Press, 2011. https://ebookcentral.proquest.com/lib/uunl/detail.action?docID=3338681
- Van Es, Karin, Maranke Wieringa and Mirko Tobias Schäfer. 2018. Tool criticism: From Digital Methods to Digital Methodology. In Ryes, Everardo, Mark Bernstein, Giancarlo Ruffo, and Imad Saleh (eds.) *Proceedings of the 2nd International Conference on Web Studies.* https://dl-acm-org.proxy.library.uu.nl/doi/10.1145/3240431.3240436
-

Week 12:

- Gasparini, A. A. (2015) Perspective and use of empathy in design thinking. *Advancements in Computer-Human Interaction (ACHI)*, Lisbon. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.672.7784&rep=rep1&type=pdf

Week 13:

- Stanford d.school. (2020, August 24). *Design Thinking Bootleg.* https://dschool.stanford.edu/resources/design-thinking-bootleg

Week 14:

- Werning, Stefan, and Jasper van Vught (In press) Taking Playful Scholarship Seriously. Discursive Game Design as a Means of Tackling Intractable Controversies. *Eludamos special issue: playfulness across media.*

Week 15:

- van Vught, J.F. & Glas, R. (2018). *Considering play: From method to analysis*. *Transactions of the Digital Games Research Association (ToDIGRA)*, 4 (2), (pp. 205-242). http://todigra.org/index.php/todigra/article/view/94/145

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Flexible Phase (Semester 2)

Food Modules

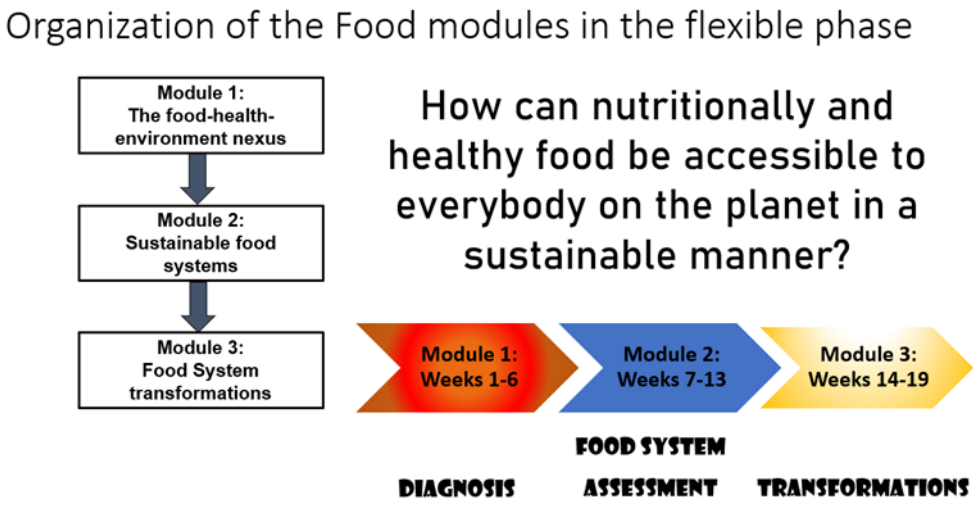
Universitat de Barcelona · Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin · Utrecht University · Eötvös Loránd University | Budapest · Université de Montpellier

Module Descriptors: FOOD THEME of the FLEXIBLE PHASE

Preamble: General information valid for all three Food modules

The Food theme builds on the knowledge gained in Phase 1, in particularly building on the theories of systems thinking, complex models and transdisciplinary research. Student will use this knowledge and apply it to the challenges they will be working on and step-by-step guides and resources from Phase 1 will be used as tools to support the challenges.

The organization of the three food modules as well as the link between them are illustrated in the picture below.



	FOOD Theme will run under a transversal challenge within the three modules tackling subsequently: 1) identification/diagnosis (Module 1), 2) evaluation/assessment (Module 2), and transformation/intervention (Module 3) of food production system.

Students will be offered to define their own challenges within five 5 macrochallenges as follows:

1. Consumption of products of animal origin and sustainable development (including animal welfare, environmental, health issues, etc.)
2. Ultra-processed foods, industrialization of food and sustainable development
3. Local and short supply chains and sustainable development
4. Deforestation, food systems and environmental issues (including loss of biodiversity, climate change)
5. Food-related health problems (e.g., malnutrition, obesity).

Justification of the macro challenges:

i) agreement with SDGs formulated by UN

ii) ensuring support to the students to develop their own challenges through the learning activities proposed within Food Modules.

iii) freedom for students to propose their own challenge within the “big picture”.

iv) promotion of developing the ability of debate as the macrochallenges are controversial

v) promotion of (primary) research possibility as the macrochallenges are open-ended.

	Each macrochallenge will preferably be assigned to two teams. For the academic year of 2021/2022, the expected number of student groups is eight.

	Students are invited to work in groups (minimum four students having different scientific backgrounds, preferably in interuniversity groups. For each group an own MS Teams channel will be set-up).

	Students can change their challenge within the first study week, they will have to inform the Food Theme facilitator about the change

Assessment: for each module, a final personal reflection about the challenge compiled by the students will be assessed.

	Expected outcome: During week 19, Student-led Final Food Theme one-day symposium preferably in Aula Magna of each university with the participation of Food KCT member, guest teacher, external stakeholders' jure and peer-review action taking into account there are two groups working in the same challenge

Miscellaneous:

1. The MS Teams will only be used to run the learning activities in hybrid mode (setting up of different channels for each group).
2. Module contents to be upload to Moodle; There will be only one Moodle course).
3. All assessment will be organized in Scorion environment.
4. Social event: organization of sustainable dinner cooking per module, (co-)organized with students.

Module details

Module title:	01. The Food- Health-Environment Nexus
Module coordinator:	name: Viktor G. Mihucz e-mail: viktor.mihucz@ttk.elte.hu institution: ELTE – Eötvös Loránd University, Budapest, Hungary
Teachers	Abbreviations for institutions: Eötvös Loránd University (ELTE), Trinity College (TCD), University of Barcelona (UB), University of Montpellier (UM), University of Utrecht (UU); Members of food Knowledge Creation team (KCT) or Expanded Network of CHARMEU or of one of the 5 universities for the Academic year of 2021/2022; Extra-academic actors for the Academic year of 2021/2022; Extra-academic actors not belonging to CHARMEU for the Academic year of 2021/2022; Contributors not part of the CHARM-EU alliance & Hungarian extra-academic actors for the mobility week in Module 1 for the Academic year of 2021/2022

Start date – end date: 14 February 2022 – 25 March 2022
Assessments: 6 (see the assessment table below)

Module design and content

Module high-level learning aims: This module explores the social, economic and environmental drivers and consequences for (human and ecosystem) health and social justice associated with food systems. After this module, students will be able to:

1. Reflect on the multifaceted nature of the food-health-environment-inequality nexus taking into consideration influence from cultures, energy and society.
2. Describe the impact of food and its interdependencies as a result of social, cultural, historical, environmental, economic, medical and political factors.
3. Systematically analyse the connections between food and different health impacts (human health and ecosystem health); with health, poverty, and climate change; and the links with social and environmental dimensions of sustainability.

The role of Module 1 is to

i) familiarize students with the main concepts of food production and their limitations from the health-environment and cultural, socio-economic impact points of view;
ii) raise awareness on the past and current challenges in food production and diet;

give a firm support for the activities to be developed in the two other subsequent Food modules by using the acquired knowledge in the present module to understand food system transformations supporting sustainability.

Connection with other phases and modules: *see* Preamble

Module Learning Outcomes

- MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]
- MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]
- MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]
- MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]
- MLO 10.5: Assess the role of biotechnology in the future of sustainable food consumption and dietary health, including the societal, economic and environmental implications thereof. [PLO 1, 3]
- MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]
- MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Teacher-led activities	Place: Hybrid classroom (HC) at 4 CHARMEU partner universities
Lectures	Lectures focus only on global aspects that were not completely understood by students as revealed by the diagnostic quiz and student questions.
Tutorials	Like lectures but shorter focusing on smaller units of a certain aspect/challenge.
Panel discussions	Academic and extra-academic actors are available physically and online for questions of the students during specific timeslots.
Joint student-module coordinator led activity	Place: HC at 4 CHARMEU partner universities
Class discussions	Regular discussions on key concepts of food in the HC in order to facilitate transition from multidisciplinary to transdisciplinary approaches for understanding the complexity of food-health-environment nexus.
Workshops	Workshop 1: Workshop to facilitate levelling up the knowledge on key concepts of food because of different student scientific background. Workshop (2) on health dimension of the student challenge: "Conventional" workshop (e.g., with PowerPoint presentations); Workshop (3) on the environmental of the student challenge: "Peer to peer learning" workshop (train your peer to present your findings and vice versa); Workshop (4) on the socio-cultural and environmental impacts of the student challenge: "Role-playing" workshop (express the diagnosis of the challenge from the perspective of the actors involved); Workshop (5) on the transdisciplinary presentation of the diagnosis of the student challenge: "Language register" workshop (express the diagnosis of the challenge to 1) decision-make stakeholder, 2) actor involved in food production, 3) mass media (fake interview, press release). Students give a diagnosis of the health – environmental and socio-economic impacts of the challenge chosen related to food, diet, food productions in a transdisciplinary way based on reading and interpreting research article in hybrid meeting, followed by peer and teacher assessment.
Student-led activities	Place: Hybrid classroom at 4 CHARMEU partner universities
	Aims to facilitate i) communication skills at personal level ii) development of critical thinking iii) an intercultural and interpersonal perspective on food iv) community building

Warm-up	Students present the state-of-the art of controversial food, diet or food production related topics and voice their opinion.
Class discussion	Students voice their opinion on controversial food, diet or food production related topics followed by discussion with peers and teachers.
Test yourself	Student groups show tips for sustainable food-related ideas (e.g., cooking, food waste management) in their microenvironment (household/workplace). Students present experiences related food & diet & cultural traditions followed by followed by discussion with peers and teachers.
Student-led activities	**Place: Online environment**
Teamwork	Students work self-steering in subgroups, do hands-on research and work on their contribution to the reports and workshop presentations.

A detailed example for the proposed learning activities can be seen in Annex 1.

Study materials

These materials will be shared in the Virtual Learning Environment:

- hand-outs and reader;
- mandatory literature;
- links to self-study sources;
- literature database;
- links to relevant websites;
- e-learning module in Moodle;
- glossary of scientific terms relevant to the field in English language with entries translated to Castellano, Català, Français, Gaeilge, Magyar & Nederlands.
- recommended (optional) literature.

Mobility activity in the module

- Aim and form: There is one intensive blended short-term mobility activity in this module in form of workshops and field trips to support the achievement of the module learning outcomes in a transnational and intercultural learning environment focusing on propagation of healthy diets, optimization of food waste generation and food safety alert system implemented by the European Commission organized by ELTE (Budapest). Activities will be performed from Monday to Friday on Week 4. Students that cannot join physically the activities will have the possibility to follow visits and field trips online.
- Location: ELTE, Budapest
- Length: 5 days
- Detailed thematic foci and structure: Workshop and field trips to strengthen the perception of students on the Food – Health – Environment Nexus and to give a solid support for developing the student final workshop contents scheduled for Week 6. For detailed information on contents, please see table at Week 4.
- Notes: Module 1 activities are accompanied by an online preparatory and a follow-up phase that support the formulation of project teams, their structured work as well as

the sustainability of the results of the teamwork. The teams will be asked to work together online and offline, before, during and after the physical mobility period. Thus, the proposed activities: pre-activity: talks, tutorials of Weeks 1-3; Main activity: visit to institutions and field trips. Post-activity: wrap-up, drawing conclusion, notes in reflection journal.

- Depending on the evolution of the COVID-19 pandemic, hybrid mobility will be replaced by a virtual one consisting of on-line activities and pre-recorded materials asked from the actors to be visited.

Module timetable: **Week 1**

	Week 1 : Setting the stage									
	Monday 14 February		Tuesday 15 February		Wednesday 16 February			Thursday 17 February		Friday 18 February	
	10-13 CET	14-17 CET	10-13 CET	14-17 CET	10:00-11:30 CET	11:45-13:00	14-17 CET	10-13 CET	14-17 CET	10-13 CET	14-17 CET
UB											
Classroom1 (HC)	**Welcome LOCAL**		**Meet the module coordinators**	**Team/ individual work**: a) defining the challenge; b) preparation of warm-up activity;	**Warm-up 1**: The role of technology in agriculture (T1)	**Lecture (1)** on historical perspective on food provisioning	**Class discussion 1**: Why Study Food? (T1)	**Team/ individual work**: defining the challenge		**Team/ individual work**: a) defining the challenge; b) drafting a challnge for the Advocate for your challenge session - Interaction with module 1 coordinator in the HC if needed	
UM											
Classroom1 (HC)	**Welcome LOCAL**		**Meet the module coordinators**	**Team/ individual work**: a) defining the challenge; b) preparation of warm-up activity;	**Warm-up 1**: Historical trends in production of a food item (T2)	**Lecture (1)** on historical perspective on food provisioning	**Class discussion 1**: Why Study Food? (T1)	**Team/ individual work**: defining the challenge		**Team/ individual work**: a) defining the challenge; b) drafting a challnge for the Advocate for your challenge session - Interaction with module 1 coordinator in the HC if needed	
UU											
Classroom1 (HC)	**Welcome LOCAL**		**Meet the module coordinators**	**Team/ individual work**: a) defining the challenge; b) preparation of warm-up activity;	**Warm-up 1**: Historical shifts in diet (T3)	**Lecture (1) on historical perspective on food provisioning (J. Dijkman)**	**Class discussion 1**: Why Study Food? (T1)	**Team/ individual work**: defining the challenge		**Team/ individual work**: a) defining the challenge; b) drafting a challnge for the Advocate for your challenge session - Interaction with module 1 coordinator in the HC if needed	
ELTE											
Classroom1 (HC)	**Welcome LOCAL**		**Meet the module coordinators**	**Team/ individual work**: a) defining the challenge; b) preparation of warm-up activity;	**Warm-up 1: History of an influential Food Company & Farms then and now (T4&5) (moderator: V.Mihucz)**	**Lecture (1)** on historical perspective on food provisioning	**Class discussion 1: Why Study Food? (T1) (moderator: Student & V.Mihucz)**	**Team/ individual work**: defining the challenge		**Team/ individual work**: a) defining the challenge; b) drafting a challnge for the Advocate for your challenge session - Interaction with module 1 coordinator in the HC if needed	
	Meet your Module 1 coordinator in person										

Week 2

	Week 2: Food & Health Nexus										
	Monday 21 February		Tuesday 22 February		Wednesday 23 February			Thursday 24 February		Friday 25 February	
	10-13 CET	14-17 CET	10-13 CET	14-17 CET	10-11:30 CET	11:45-13 CET	14-17 CET	10-13 CET	14-17 CET	10-13 CET	14-17 CET
UB											
Classroom1 (HC)	**Advocate for your challenge & Peer & KCT Feedback to Challenge**		**Team/ individual work**: a) preparation of the warm-up activity; b) developing the health dimension of the chosen challenge		**Warm-up 2**: "Who pays for dinner?" (T1)	**Tutorial (1)** on microbiome and diet (**S. Corr**, online from TCD)	**Panel discussion 1 moderated from UB: Healthy and sustainable food choices**	**Team/ individual work**: developing the health dimension of the chosen challenge		**Workshop (2)** on the health dimension of challenge (groups 1-4)	**Workshop (2)** on the health dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities
UM											
Classroom1 (HC)	**Advocate for your challenge & Peer & KCT Feedback to Challenge**		**Team/ individual work**: a) preparation of the warm-up activity; b) developing the health dimension of the chosen challenge		**Warm-up 2**: "Who pays for dinner?" (T1)	**Tutorial (1)** on microbiome and diet (**S. Corr**, online from TCD)	**Panel discussion 1**: Healthy and sustainable food choices	**Team/ individual work**: developing the health dimension of the chosen challenge		**Workshop (2)** on the health dimension of challenge (groups 1-4)	**Workshop (2)** on the health dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities
UU											
Classroom1 (HC)	**Advocate for your challenge & Peer & KCT Feedback to Challenge**		**Team/ individual work**: a) preparation of the warm-up activity; b) developing the health dimension of the chosen challenge		**Warm-up 2: Any dietary change signs? (T2) (moderator: Student & V. Mihucz)**	**Tutorial (1)** on microbiome and diet (**S. Corr**, online from TCD)	**Panel discussion 1**: Healthy and sustainable food choices	**Team/ individual work**: developing the health dimension of the chosen challenge		**Workshop (2)** on the health dimension of challenge (groups 1-4)	**Workshop (2)** on the health dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities
	Meet your module 1 coordinator in person										
ELTE											
Classroom1 (HC)	**Advocate for your challenge & Peer & KCT Feedback to Challenge**		**Team/ individual work**: a) preparation of the warm-up activity; b) developing the health dimension of the chosen challenge		**Warm-up 2**: School lunch programs (T3)	**Tutorial (1)** on microbiome and diet (**S. Corr**, online from TCD)	**Panel discussion 1 with ELTE participation: Healthy and sustainable food choices**	**Team/ individual work**: developing the health dimension of the chosen challenge		**Workshop (2) on the health dimension on challenge (groups 1-4) (Facilitator: N. Román)**	**Workshop (2) on the health dimension of challenge (groups 5-8) & Wrap-up 2: Diagnosis & setting priorities (N. Román)**

Week 3

Week 3: Food & Environment Nexus

	Monday 28 February			Tuesday 1 March		Wednesday 2 March			Thursday 3 March		Friday 4 March	
	10-11 CET	11:15-13 CET	14-17 CET	10-13 CET	14-17 CET	10-11:30 CET	11:45-13:00	14-17 CET	10-13 CET	14-17 CET	10-13 CET	14-17 CET
UB												
Classroom1 (HC)	**Warm-up 3**: Climate change impacts on agriculture (T1)	**Test Yourself 1**: How big is your footprint? (T1)	**Panel discussion 2**: One health appreciation of food	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Tutorial 2: "Hot topics" in the Food-Environment Nexus: Greenhouse emissions and food waste (V. Mihucz)**	**Class discussion 2**: How can the food system's greenhouse gas emissions be reduced? (T1) **(moderator: Student & V. Mihucz)**	**TORCH meeting**	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Workshop (3)** on the environmental dimension of challenge (groups 5-8)	**Workshop (3)** on the environmental dimension of challenge (groups 1-4) & **Wrap-up 3** : diagnosis & setting priorities
	Meet your module coordinator in person										**Meet your module coordinator (ctd.)**	
UM												
Classroom1 (HC)	**Follow-up of Warm-up 1 (Historical trends in production of a food item): Impacts to human, animals, and the environment (T2) (moderator: V. Mihucz)**	**Test Yourself 1: Zero food waste kitchen practices (T2) (Moderator: Student & V. Mihucz)**	**Panel discussion 2: One health appreciation of food (moderator:V. Mihucz)**	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Tutorial 2**: "Hot topics" in the Food-Environment Nexus: Greenhouse emissions and food waste	**Class discussion 2**: Why Food Waste matters? (T2)	**TORCH meeting**	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Workshop (3) on the environmental dimension of challenge (groups 5-8) (moderator: V. Mihucz)**	**Workshop (3) on the environmental dimension of challenge (groups 1-4) & Wrap-up 3: diagnosis & setting priorities (moderator: V. Mihucz)**
						Meet your module coordinator in person						
UU												
Classroom1 (HC)	**Warm-up 3**: Endangered species due to food production (T3)	**Test Yourself 1**: How to create an education campaign for food recovery? (T3)	**Panel discussion 2**: One health appreciation of food	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Tutorial 2**: "Hot topics" in the Food-Environment Nexus: Greenhouse emissions and food waste	**Class discussion 2**: How can the food system's greenhouse gas emissions be reduced? (T1)	**TORCH Meeting**	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Workshop (3)** on the environmental dimension of challenge (groups 5-8)	**Workshop (3)** on the environmental dimension of challenge (groups 1-4) & **Wrap-up 3**: diagnosis & setting priorities
ELTE												
Classroom1 (HC)	**Warm-up 3**: "The meat worship" (T4)	**Test Yourself 1**: How to create a compost pile? (T4)	**Panel discussion 2**: One health appreciation of food	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Tutorial 2**: "Hot topics" in the Food-Environment Nexus: Greenhouse emissions and food waste	**Class discussion 2**: Why Food Waste matters? (T2)	**TORCH Meeting**	**Team/ individual work**: developing the environmental dimension of the chosen challenge		**Workshop (3)** on the environmental dimension of challenge (groups 5-8)	**Workshop (3)** on the environmental dimension of challenge (groups 1-4) & **Wrap-up 3**: diagnosis & setting priorities

Week 4 – Mobility week* (Coordinator: Viktor G. Mihucz)

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
7 March 2022, 12:00-15:00 AM CET	**Meet the experts**	Opening Visit	To better understand global warming and its implication on agriculture and food production	2 h	Meteorological Service &	<Hybrid classroom> Budapest
8 March 2022 10:00 AM– 14:00	**Meet the experts**	Field trips	To better understand global warming and its implication on agriculture and food production	4 h	Centre for Agricultural Research of the Eötvös Loránd Research Network	Martonvásár
9 March 2022, 10:00 – 14:00 AM CET	**Meet the experts**	Visit and field trips to microbiological food safety and food analysis accredited laboratory visits	To introduce students to the current food contaminant analyses and most investigated food commodities & to get acquainted with the Rapid Alert System for Food and feed (RASFF) of the EU.	4 h	Nemzeti Élelmiszerlánc-biztonsági Hivatal (NÉBIH) – Hungarian Food Chain Safety Authority	Budapest
10 March 2022, 10:00 – 14:00 AM CET	**Meet the experts**	Visit and field trips food analysis accredited laboratory	To introduce students to the current food contaminant analyses and most investigated food commodities	4 h	Wessling Ltd.	Budapest
10 March 2022, 17:00 AM – 20:00 CET	**Meet the experts**	Visit and field trips	How to apply healthy diet outside the Mediterranean region? – Collaborative dinner cooking	4 h	<to be defined>	Budapest
11 March 2022, 10:00 – 11:30 AM CET	**Meet the experts**	Lecture	Lecture: State-of-the-art of food safety	1 h	Józwiak, Ákos	ELTE hybrid classroom
11 March 2022, 11:30 – 13:00 AM CET	**Student feedback**	Wrap-up and conclusions	Analysis of the usefulness of the visits and field trips for the preparation of the final workshop	1 h	Students	ELTE hybrid classroom

* according to the availability of the proposed extra-academic actors

Alternative study plan for students not joining the mobility Week is offered (see detailed learning activities)

Week 5

	Week 5: Socio-cultural impacts of food											
	Monday 14 March		Tuesday 15 March		Wednesday 16 March			Thursday 17 March			Friday 18 March	
	10-13 CET	14-17 CET	10-13 CET	14-17 CET	10-11 CET	11:15-13	14-17 CET	10-11:30 CET	11:15-13 CET	14-17 CET	10-13 CET	14-17 CET
UB	ELTE BANK HOLIDAY (no teaching)											
Classroom1 (HC)	**Team/ individual work**: developing the social dimension of the chosen challenge		**Team/ individual work**: developing the social dimension of the chosen challenge		**Warm-up 4**: Women, food, conflict (interview & podcast with a female relative) (T1)	**Class discussion 3**: Food & divided identities	**Panel discussion 3**: Gender Inequality in food production	**Test yourself 2**: Meatless day challenge (T1)	**Class discussion 4**: We are what we ATE (T1)	**Panel discussion 4 (moderator: M. Camps-Gaset; online:TCD): Trade-off between cultural traditions and healthy dietary patterns**	**Workshop (4)** on the socio-economic dimension of challenge (groups 1-4)	**Workshop (4)** on the socio-economic dimension of challenge (groups 5-8) & **Wrap-up 5**: diagnosis & setting priorities
UM												
Classroom1 (HC)	**Team/ individual work**: developing the social dimension of the chosen challenge		**Team/ individual work**: developing the social dimension of the chosen challenge		**Warm-up 4**: A festive meal (Food & Rituals) (T2)	**Class discussion 3**: Food & divided identities	**Panel discussion 3**: Gender Inequality in food production	**Test yourself 2**: Eat local challenge (T2)	**Class discussion 4**: Are we what we EAT? (T2)	**Panel discussion 4**: Trade-off between cultural traditions and healthy dietary patterns	**Workshop (4)** on the socio-economic dimension of challenge (groups 1-4)	**Workshop (4)** on the socio-economic dimension of challenge (groups 5-8) & **Wrap-up 5**: diagnosis & setting priorities
UU												
Classroom1 (HC)	**Team/ individual work**: developing the social dimension of the chosen challenge		**Team/ individual work**: developing the social dimension of the chosen challenge		**Warm-up 4**: So what's for dinner? (Compromise making) (T3)	**Class discussion 3**: Food & divided identities	**Panel discussion 3**: Gender Inequality in food production	**Test yourself 2**: Meatless day challenge (T1)	**Class discussion 4**: Toward mindful eating (T3)	**Panel discussion 4**: Trade-off between cultural traditions and healthy dietary patterns	**Workshop (4)** on the socio-economic dimension of challenge (groups 1-4)	**Workshop (4)** on the socio-economic dimension of challenge (groups 5-8) & **Wrap-up 5**: diagnosis & setting priorities
ELTE												
Classroom1 (HC)	**Team/ individual work**: developing the social dimension of the chosen challenge		**Team/ individual work**: developing the social dimension of the chosen challenge		**Warm-up 4: Animal products in cultural food traditions or your family's food habits? (T4) (moderator: V. Mihucz)**	**Class discussion 3: Food & divided identities (moderator: Student & V. Mihucz)**	**Panel discussion 3: Gender Inequality in food production (Moderator: V. Mihucz)**	**Test yourself 2: Eat local challenge (T2) (Moderator: Student & V. Mihucz)**	**Class discussion 4: Food references in the Pop culture (T4) (Moderator: Student & V. Mihucz)**	**Panel discussion 4 (+ELTE participation): Trade-off between cultural traditions and healthy dietary patterns**	**Workshop (4) on the socio-economic dimension of challenge (groups 1-4) (moderator: V. Mihucz)**	**Workshop (4) on the socio-economic dimension of challenge (groups 5-8) & Wrap-up 5: diagnosis & setting priorities (moderator: V. Mihucz)**

Week 6

	Week 6: Complexity of the Food-Environment-Health Nexus											
	Monday 21 March			Tuesday 22 March		Wednesday 23 March			Thursday 24 March		Friday 25 March	
	10-11:00 CET	11:15-13 CET	14-17 CET	10-13 CET	14-17 CET	10-11 CET	11:15 - 13: CET	14-17 CET	10-13 CET	14-17 CET	10-13 CET	14-17 CET
UB												
Classroom1 (HC)	Tutorial (5): Food waste: how can we move from 'sin' to 'win-win'? - The role of NGOs in surplus food redistribution	**Lecture 3**: Conceptual framework of food systems for diets and nutrition	**World Café 2**	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Tutorial (4)** on Socio-economic impacts of biotechnology / genetically modified crops	**Test Yourself 3**: What do not you know about food? (T1)	**Panel Discussion 5 on Consumer Information (moderator: O. Comas-Baste, UB)**	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Workshop (5)** on diagnosis of all dimensions of challenge (groups 5-8)	**Workshop (5)** on diagnosis of all dimensions of challenge (groups 1-4) & **Final wrap-up (6)**
UM												
Classroom1 (HC)	Tutorial (5): Food waste: how can we move from 'sin' to 'win-win'? - The role of NGOs in surplus food redistribution	**Lecture 3: Conceptual framework of food systems for diets and nutrition (P. Caron)**	**World Café 2**	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Tutorial (4)** on Socio-economic impacts of biotechnology / genetically modified crops	**Test Yourself 3**: What do not you know about food? (T1)	**Panel Discussion (5)** on Consumer Information	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Workshop (5)** on diagnosis of all dimensions of challenge (groups 5-8)	**Workshop (5)** on diagnosis of all dimensions of challenge (groups 1-4) & **Final wrap-up (6)**
UU												
Classroom1 (HC)	Tutorial (5): Food waste: how can we move from 'sin' to 'win-win'? - The role of NGOs in surplus food redistribution	**Lecture 3**: Conceptual framework of food systems for diets and nutrition	**World Café 2**	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Tutorial (4) on Socio-economic impacts of biotechnology / genetically modified crops (K. Beumer)**	**Test Yourself 3**: What do not you know about food? (T1)	**Panel Discussion (5)** on Consumer Information	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Workshop (5)** on diagnosis of all dimensions of challenge (groups 5-8)	**Workshop (5)** on diagnosis of all dimensions of challenge (groups 1-4) & **Final wrap-up (6)**
ELTE												
Classroom1 (HC)	**Tutorial (5): Food waste: how can we move from 'sin' to 'win-win'? - The role of NGOs in surplus food redistribution (M. Share)**	**Lecture 3**: Conceptual framework of food systems for diets and nutrition	**World Café 2**	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Tutorial (4)** on Socio-economic impacts of biotechnology / genetically modified crops	**Test Yourself 3**: What do not you know about food? (T1)	**Panel Discussion (5)** on Consumer Information	**Team/ individual work**: putting together ALL dimension of the chosen challenge		**Workshop (5) on diagnosis of all dimensions of challenge (moderator: V. Mihucz)) (groups 5-8)**	**Workshop (5) on diagnosis of all dimensions of challenge (groups 1-4) & Final wrap-up (6) (moderator: V. Mihucz)**

* The Food KCT reserves the right to perform changes

Assessment table

Assessor (name): Viktor G. Mihucz

General observation: There will be several shorter and/or optional individual tasks (e.g., diagnostic and formative quiz, short essays, preparation of infographics, flow charts, short interviews, podcasts) **not included in the E-portfolio** however they are proof of active participation in the class learning activities; 2. The N° of teacher & peer assessment **included in the E-portfolio** the deliverables have been linked with **a** and **b** letters whenever it was necessary.

N°.	student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1a&b	25 February 2022, 8:00 – 16:00 CET	Workshop on the health dimension of the selected student challenge	Teacher assessment on collaborative work in form of visual presentation (PPT or video, etc.) of the health dimension of the student challenge (a broad presentation to highlight the initial research findings across the partially developed concepts) prepared for the "conventional" workshop and subsequent discussions & peer assessment using the guidelines prepared by the teacher.	Teacher (V.G. Mihucz) (1a) & peer assessment (1b)	PLO1, PLO2, PLO4, PLO5, PLO6, PLO7
2	4 March 2022, 8:00 - 16:00 CET	Workshop on the environmental dimension of the selected student challenge	Teacher assessment on collaborative work in form of visual presentation (PPT or video, etc.) of the environmental dimension of the student challenge prepared for the "peer to peer learning" workshop where the work of the student teams will be showcased by another group after peer training	Viktor G. Mihucz	PLO1, PLO2, PLO4, PLO5, PLO6, PLO7

3	18 March 2022, 8:00 – 16:00 CET	Workshop on the sociocultural and economic dimension of the selected student challenge	Teacher assessment on collaborative work in form of visual presentation (PPT or video, etc.) of the socio-economic dimension of the student challenge prepared for the "role-playing" workshop where the work of the student teams will be showcased from the perspective of all actors involved in the selected challenge	Viktor G. Mihucz	PLO1, PLO2, PLO4, PLO5, PLO6, PLO7
4a&b	25 March 2022, 8:00 – 16:00 CET	Workshop on the diagnosis of the chosen challenge presented in a transdisciplinary way	Teacher assessment on collaborative work in form of visual presentation (PPT or video, etc.) on all dimensions of the student challenge to highlight the research findings across the developed concepts according to different "language registers" (cf. decision-making stakeholder, actors involved in the food production and mass media) & peer assessment using the guidelines prepared by the teacher.	Teacher (V.G. Mihucz) (4a) & peer assessment (4b)	PLO1, PLO2, PLO3, PLO4, PLO5, PLO6, PLO7
5	28 March 2022, 16:00 – 18:00 AM CET	Written essay	Collaborative report writing on a particular challenge the outcomes of which were further integrated in the final workshop	Viktor G. Mihucz	PLO1, PLO2, PLO3, PLO4, PLO5, PLO6, PLO7
6	28 March 2022, 18:00-20:00 CET	Personal reflection on Food Module 1	Teacher assessment on the professional and personal development and written skills of the students	Viktor G. Mihucz	PLO5, PLO6, PLO7

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

ANNEX 1: Detailed example for the proposed learning activities and assessment methods

Module title: Module 1. The Food – Health – Environment Nexus

Week 1 (Setting the stage) **Day** 3

Activity title: Warm-up 1 (group or individual activity)

Activity description: Module coordinator will moderate the activity aiming at a better understanding of the subsequent lecture and that agriculture is a primary activity for food production involving a great percent of the World's population but **NOT from a systems perspective**. Agriculture experienced considerable changes during the history of mankind. Industrialized agriculture has significant **impacts on environment, health, and society**. One group of students will share with peers and module coordinator their perception on food production history (approximately 20 min/student/topic). **Suggested topics** (depending on the evolution of the discussion) are as follows:

Topic 1. Understanding the role of technology in agriculture: Research an agricultural innovation (e.g., the plow, steam engine, Haber-Bosch process, or herbicide-resistant corn). Using papers, posters, oral presentations, or videos, address the following: How was this technology invented? What problem(s) did it aim to solve? What were the intended and unintended effects for health, society, and the environment?

Topic 2. Farms then and now: list similarities and differences.

Topic 3. History of an influential Food Company in each CHARMEU country (adapted from FoodSpan.org). Using papers, posters, oral presentations, students address the following: How has the company changed over time? What products does this company sell? What percentage of the market for these products does this company control? How does this level of control affect the food system?

Topic 4: **Historical trends in production of a food item**: choose an animal product (e.g., beef, poultry, pork, dairy, eggs) or a plant-based product and research industrial (in the case of the animal product, also the pasture-based) approaches to producing it. In a report and/or presentation, summarize historical trends in that industry.

Topic 5. Historical shifts in diet (*cf.* FoodSpan.org). How have changes in the food system affected what people eat? How would students' diets differ if they lived 50 years ago? 500 years ago? 50,000 years ago? Students could create a menu featuring meals that were typical during different periods of human history. Students may also research, cook, and present a series of recipes aligned with different historical periods. Encourage students to share their findings on social media.

Pre-activity:

Module coordinator provides the suggested topics and questions. Module coordinator provides handouts on the **agricultural timeline and key milestones in the history of agriculture.**

Students prepare the tasks, do literature search if necessary.

Time: Approximately 90 min are allocated to interventions (20 min/topic)

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: develop and attend the activity, take notes for the peers' presentation and actively participate

2) Module coordinator: moderation of the discussion

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: None **Day:** None

Assessment: None

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 1 (Setting the stage) **Day** 3

Activity title: Fat years, lean years: an historical perspective on food provisioning

Activity description: During this activity, one academic staff will discuss briefly shortages of staple foods (e.g. cereals, potato, tubers) and their processed food items, discussing the causes and the way in which societies responded to shortages as well as their short- and long-term effects from the Middle Ages till the present day. This class will focus only on aspects that were not completely understood by students as revealed by the diagnostic quiz and student questions (see also Pre-activity content below). The teacher will start the class by inviting students to solve their peers' doubts. In that manner, students can see themselves represented in it. The teacher acts as a support to guide students. The idea is that the teacher uses students' responses to also make students plead/reflect on their answers. At the end of the lecture, students answer another short Q&A quiz composed of about 10 items (e.g., multiple choice, short answer, matching, missing words) on Moodle/Wooclap from the content of the lecture. It is meant for the teacher to detect what topics have been understood and those that were not (so he/she can delve into them) to adjust the content to students real learning moment.

Pre-activity:

1) Teacher: Due to the complexity of the topic and limited time available, the teacher will share some relevant bibliography/materials to students for further insights. Teacher prepares and evaluates a short diagnostic quiz to better adjust the topic of his lecture (contextualization to students real learning moment). At the end of the quiz there will be a possibility to send a question or remark. In this way, students can formulate and submit their doubts and for further clarifications. The most interesting formulated questions will be inserted among the lesson slides on Wooclap by the teacher. Due to the time constraints, teacher prepares brief answers to the student questions submitted and decides which parts / slides of the lesson can be skipped.

2) Students: Students are invited to solve a short Q&A quiz beforehand on Moodle (on Day 1).

Time:

1) Approximately 90 min as follows:

1. 60 minutes lecture

2. 15 minutes are allocated for students' questions

3. 15 min short Q&A quiz.

2) 2 hours student preparatory work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the lecture and take notes

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: 1 Day: 3

Assessment: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 1 (Setting the stage) **Day** 3

Activity title: Class discussion 1

Activity description: Module coordinator will moderate the activity. Discussion-led by students on the topic Why Food Theme is their choice within the present master.

Topic. Why study food? Suggested questions:

• How did agriculture remake the world?

• How is food "fundamental, fun, frightening, and far-reaching?"

• How do your colleagues react when you tell them you are studying food?

• Why the more recent interest in food studies? How is studying food both "respectable" and "subversive"?

• Do modern food consumers tend to take food for granted? If so, why?

• How is food "gross"?

• Is food still considered more a concern for women than men?

• In determining consumer decisions, why do considerations of convenience tend to outweigh those of responsibility?

• Why is meat so highly prized in so much of the world?

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time: Approximately 120 min as follows are allocated to student interventions and discussion

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates; one volunteer acts as co-moderator.

2) Module coordinator: moderating the discussion.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: None **Day:** None

Assessment: None

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 2 (Food & Health) **Day** 1

Activity title: **Student Pitch & Advocate for your Challenge session (Preliminary opinion & importance of the topic from the student perspective)** & **Student & Food KCT Brainstorming & feedback session on the proposed Challenges**

Activity description:

- During the student-led morning session, student groups propose their challenge and advocate for it: Power point presentations, 5 min presentation & 5 minutes peer and KCT questions & answers.
- The content of the afternoon session: Amendment, improvements, refining of the proposed challenges from peers and KCT Food. Finalization of the student challenges: check for multidimensionality (including societal, gender aspects, etc.), transdiciplinarity. The chosen challenge should be discussed according to the backbone: diagnosis – assessment – transformation etc. Encouragement (but not required, no obligation) to include a novel aspect of the challenge, as the letter R in CHARM mean research. Making to understand the student that the novelty aspect should not be perfectly developed by the end of the 19th week. – Research is time-demanding and difficult.

Pre-activity:

1) Teacher and students prepare guidelines for the peer assessment.

2) Students prepare presentations based on the research papers read, notes and reflections prepared on the previous week.

Time:

1) 5 hours self-study

2) 4 hours on assignment preparation

3) 2 hours for the student presentations (in total for all groups)

4) 4 hours project work

5) 4 hours mentoring

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students present their presentations and actively participate in the discussion

2) Peer review: students provide feedbacks on the presentations of each other

3) Teacher: attend and actively participate in the discussion, feedback

4) External stakeholders: None

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: 2 **Day:** 1

Assessment: Student presentations not included in the E-portfolio

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.5: Assess the role of biotechnology in the future of sustainable food consumption and dietary health, including the societal, economic and environmental implications thereof. [PLO 1, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 2 (Food & Health) **Day** 3

Activity title: Warm-up 2 on Tutorial on Food – Health Nexus

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several topics related to the food-health connection and individual responsibility for diet (approximately 30 min/topic). Planned topics (depending on the evolution of the discussion) are as follows:

Topic 1. Who pays for the dinner? Suggested questions:

• How much depends on dinner?

• Why is it difficult to get an accurate accounting of the extent and costs of foodborne illness?

• How much are people willing to pay for safer, healthier, more responsibly produced food?

• To what extent is fatness the fault and responsibility of individual eaters? To what extent is it a larger social, economic, and political problem? Who should pay the medical costs of obesity?

• To what extent is fatness a particularly "Western World" problem?

• Is it true that anyone can lose weight if s/he wants to? Why is "dieting" generally futile?

• Might the "obesity epidemic" be overstated?

• What do we owe the billions of animals who provide our milk and cheese, eggs, meat, feathers, hides, and wool? What do we owe the human workers who feed us? And how much more are we willing to pay to minimize their suffering and sacrifice?

Topic 2. Any dietary change signs? Student groups are asked previously to try to identify and compile dietary habits in of the 5 CHARMEU member countries. During the activity, students are asked to present their findings. An example:

CHARMEU member country			
Food Item	Time span	Consumption (from year– to year in mass unit/capita)	Reference
Fruits & vegetables		in the lack of exact figures, rough estimation such as: <e.g. Decreased, Increased by up to 50%, doubled, and More than Doubled.>	
Meat			
Soda			

Suggested question to be discussed during the activity:

- Which dietary trend was most surprising to you?
- Do you or your friends and family try to avoid or monitor your intake of these foods?
- What might make it hard to avoid these foods?

- What do these statistics tell you about how food environments in the monitored country might have changed over the last few decades?

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time:

1) Approximately 60 min as follows are allocated to interventions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates; one volunteer acts as co-moderator.

2) Module coordinator: moderation of the discussion

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: None **Day:** None

Assessment: None

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

Module title: Module 1. The Food – Health – Environment Nexus

Week 2 (Food & Health) **Day** 3

Activity title: **Diet and microbiome** (**Tutorial)**

Activity description: One academic staff member will present challenges in personalised nutrition, personalised-medicine and the microbiome, improving health status in an aged population by targeting the diet-microbiome connection. 1. Dietary manipulation of the microbiome: personalised nutrition, personalised - medicine and the microbiome, challenges for the field;

2. Diet and the microbiome in an aging population: the changing nutritional and dietary requirements in the elderly, the impact of age & diet on the microbiome, and association with increased disease, how can health status in an aged population be improved by targeting the diet-microbiome connection;

Pre-activity:

1) Teacher: Due to the complexity of the topic and limited time available, the teacher will share some relevant bibliography/materials to students for further insights. Teacher prepares and evaluates a short diagnostic quiz to better adjust the topic of his lecture (contextualization to students real learning moment). At the end of the quiz there will be a possibility to send a question or remark. In this way, students can formulate and submit their doubts and for further clarifications. The most interestingly formulated questions will be inserted among the lesson slides on Wooclap by the teacher. Due to the time constraints, teacher prepares brief answers to the student questions submitted and decides which parts / slides of the lesson can be skipped. Additional material on the challenges of health impacts of food production from hunger to diet-related chronic health conditions.

2) Students: Students are invited to solve a short Q&A quiz beforehand on Moodle (on Day 1).

Time:

1) Approximately 60 min as follows:

1. 40 minutes lecture

2. 10 minutes are allocated for students' questions

3. 10 min short Q&A quiz.

2) 2 hours student preparatory work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the class and take notes

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: 2 **Day:** 3

Assessment: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessment description: None

Assessments for E-portfolio: None

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 2 (Food & Health) **Day** 3

Activity title: **Healthy and sustainable food choices** (**Panel discussion 1)**

Activity description: One academic staff member will moderate the activity. The aim is to provide student key messages to facilitate behavioral change in consumers, encouraging healthy and sustainable food choices. Proposed topics (depending on the evolution of the discussion):

1. Veggie diets: an overview of their benefits and challenges from a health perspective

2. Chrononutrition – relationship between nutrition and circadian rhythm

3. The role of behavior in the epidemic of obesity & 'obesogenic' eating behaviors: emotional eating; uncontrolled eating, restrictive eating, external eating (more specific topic); evidence on the effectiveness of restrictive diets;

4. The 'health at every size' movement – the anti-diet approach; childhood determinants of eating behaviors: parents' eating behavior – child feeding – child eating behavior.

Pre-activity:

Teacher panel: Observation: pre-recorded content will be available (e.g., pre-recorded material with testimony for vegetarianism. Historical reference for vegetarianism).

Time:

1) Approximately 120 min as follows:

1. 90 minutes are allocated to interventions

2. 30 minutes are allocated for students' questions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: 2 **Day:** 3

Assessment: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 2 (Food-Health Nexus) **Day** 5

Activity title: Workshop on the health dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities

Activity description: During this activity, the previously formed group of students will present and explain the main findings and conclusions on the health dimension of the chosen challenge.

Delivery: Power point presentation, infographics, flow charts, etc.

Discussion & Wrap-up: e.g., Guided conversation:

- Is there anything you would add to or change about your today's contribution?
- Are any parts of the today's contribution surprising?
- What aspects are you most interested in learning more about?

Pre-activity:

1) Teacher and students prepare guidelines for the peer assessment.

2) Students preparation based on literature search and weekly learning activity contents.

Time:

1) 5 hours self-study

2) 4 hours on assignment preparation

3) 2 hours for the student presentations (in total for all groups)

4) 4 hours project work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students present their presentations and actively participate in the discussion

2) Peer review: students provide feedbacks on the presentations of each other

3) Teacher: attend and actively participate in the discussion

4) External stakeholders: None

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 2 **Day** 5

Assessment: Presentations

Assessment description:

1) Initial Presentation. A broad presentation to highlight the initial research findings across the partially developed concepts.

2) Demo presentations acting as a practice dry-run and a chance to receive feedback. Students are expected to use this feedback to refine their ideas.

3) Final Pitch Presentations. A final presentation session where student teams showcased their work.

Assessments for E-portfolio:

1) Peer assessment on presentations

2) Feedback from teacher on presentation

3) Self-assessment on presentation skills

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food & Environment) **Day** 1

Activity title: Warm-up 3 for Tutorial on the Food – Environment Nexus

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several topics related to the food-environment connection (approximately 20 min/topic). Planned topics (depending on the evolution of the discussion) are as follows:

Topic 1: Climate change impacts on agriculture. Students pair a certain aspect of climate change with the corresponding impact

Climate change aspect	Impact
Rising sea level Extreme heat Changes in rainfall patterns More frequent and intense extreme weather events (e.g., droughts, hurricanes, flooding)	Loss of topsoil Fungus invasion in corn crop Saltwater contamination of freshwater supply Increased cost to fight weeds Increase in a crop's water needs Higher food prices Depletion of freshwater sources for irrigation

Once students have made their choice, each student who took part in the exercise briefly discuss why they selected this aspect, then shares with the peers the state-of-the art of the challenge represented by the impact.

Topic 2: Follow-up of Warm-up 1 (Historical trends in production of a food item): Impacts to human, animals, and the environment. Follow the journey of a food item through the supply chain. Explore relationships among food, health, society, and the environment. In a report and/or presentation, students summarize potential impacts to people, animals, and the environment.

Topic 3: Endangered species due to food production: Do research on endangered species threatened by industrial food production. Present your findings. Chose one species that you considered the most endangered.

Topic 4: "The meat worship" (*cf.* W. Belasco – Food – The key concepts)

The purpose of this exercise is to help us understand why most people seem to be committed to a meat-centered diet and why reformers face a steep uphill battle in their attempts to convince us of the moral, ecological, and health benefits of a more vegetarian diet. In this exercise you need to find FIVE people from a variety of backgrounds (especially in age, gender, class). Record and analyze their answers to these difficult questions:

1. Are you a vegetarian? If so, when did you become one and why? (Vegetarians skip questions 2 and 3.)

2. If you do eat meat, please fill in the blanks: I eat meat because…. I could not be a vegetarian because….

3. If you do eat meat, do you eat the same amount and type of meat as you did when you were growing up? Explain why you've changed or haven't changed.

4. How have you reacted to reports about the negative health effects of eating meat?

5. How do you react to the following statement by a character in The Penitent, a novel by Isaac Bashevis Singer (Nobel laureate for literature):

"I watched someone at the next table working away at his plate of ham with eggs. I had long since come to the conclusion that man's treatment of God's creatures makes mockery of all his ideals and the whole alleged humanism. In order for this overstuffed individual to enjoy his ham, a living creature had to be raised, dragged to its death, tortured, scalded in hot water. The man didn't give a second's thought to the fact that the pig was made of the same stuff as he and that it had to pay with suffering and death so that he could taste its flesh. I've more than once thought that when it comes to animals, every man is a Nazi." (1983: 27)

Do you (a) Agree totally, (b) Agree somewhat, or (c) Disagree totally? Please explain.

6. Read the chapters on meat production in Eric Schlosser's Fast Food Nation and then write one paragraph (250 words) to summarize his most disturbing points. Then read that paragraph to your respondents and ask them: "Are you (a) Bothered enough to consider rethinking your diet, (b) Somewhat bothered, but not enough to change your diet, or (c) Not bothered at all? Please explain."

Analysis. What do the above responses signify about current attitudes toward meat? How do your responses compare to those summarized on page 99? What would it take to motivate people to eat less meat?

Pre-activity:

Students literature search.

Time:

1) Approximately 90 min are allocated to this activity in total (about 20 min. per topic):

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the activity, gathered information will be placed on Moodle for further reference to students.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: None **Day:** None

Assessment: None

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food & Environment) **Day** 1

Activity title: Test Yourself 1 for Tutorial on the Food – Environment Nexus

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several practical tasks related to the food-environment connection (approximately 20 min/topic). Suggested topics (depending on the evolution of the discussion) are as follows:

Topic 1: **How Big is Your Footprint?** Students will calculate the carbon footprint (including their food choices) and present to the group summarizing a written a report based on their findings. Guided questions: What could you do to reduce your footprint? What does this activity tell you about individuals' ability to address climate change? Here are examples of carbon footprint calculators:

https://www.carbonfootprint.com/calculator.aspx

http://coolclimate.berkeley.edu/calculator

www.eatlowcarbon.org/

Topic 2: **Zero food waste kitchen practices.** Students share with their peers their own zero food waste kitchen practices. Prepare a zero food waste dish and make a video about the process to share it with your peers (e.g., cf. My zero waste kitchen by Dorling Kindersley, Penhuin, © 2017). If they do not do such activity, ask a zero food waste cook to shoe some practices that can be recorded and presented to the peers (e.g., Sejribizli Bistrot in Budapest.). Possible class activity: let us plant together old and partly used potatoes.

Topic 3: **How to create an education campaign for food recovery?** Create an education campaign to motivate university students to reduce food waste. Write short and concise messages: tips for keeping food fresh, information about the shelf life of particular foods, include illustrations, share recorded practices, etc.. Messages will be displayed over closed chain video system of the university (e.g., at ELTE).

Topic 4: **How to create a compost pile?** Create a school, classroom, or home compost pile. Consult the U.S. Environmental Protection Agency's website for tips on getting started (www2.epa.gov/recycle/composting-home). Share your progress on social media using the hashtags #compost and #CHARMEU.

Pre-activity:

Students do literature search.

Time: Approximately 90 min are allocated to this activity in total (about 20 min. per topic):

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate; one volunteer acts as co-moderator.

2) Teacher: attendance of the activity, gathered information will be placed on Moodle for further reference to students.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: None **Day:** None

Assessment: None

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food & Environment) **Day** 1

Activity title: ONE HEALTH Appreciation of Food (**Panel discussion 2)**

Activity description: One academic staff member will moderate the activity. The aim is to introduce to students: a) notions of "risk analysis framework" to explain the differences between risk assessment, risk management, and risk communication, and the challenges of cultural differences in risk perception; b) the role played by Codex, OIE, and IPPC in setting international sanitary standards and guidelines; c) the challenges of newly identified hazards and/or animal/plant production methods; among other suggestions. Speaking of health concerns regarding plant production is different from health concerns regarding plant-based diets. The first focuses on pesticides and toxins that generate foodborne disease, whether the latter focus on nutrients of vegan diets

Planned contents (depending on the evolution of the discussion):

1 Sustainable soil productivity and spread of antibiotic resistance

2. Overall environmental impact of the food system, and the major strategies proposed to reduce it, with special focus on plant crops

3. Circular economy and food systems: challenges in risk assessment

4. Antibiotic resistance in veterinary medicine.

5. The role of international standards in setting guidance for keeping animals in good health and welfare.

Pre-activity:

Teacher panel will provide relevant bibliography to the topics to be discussed.

Time:

1) Approximately 120 min as follows:

1. 90 minutes are allocated to interventions

2. 30 minutes are allocated for students' questions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week: 3 **Day:** 1

Assessment: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessment description: None

Assessments for E-portfolio: None

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.5: Assess the role of biotechnology in the future of sustainable food consumption and dietary health, including the societal, economic and environmental implications thereof. [PLO 1, 3]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food & Environment) **Day** 3

Activity title: Tutorial on greenhouse emissions of food systems

Activity description: Module coordinator will give on overview on greenhouse emission of food systems and food waste. Topics covered during the tutorial: What is Climate Change?; How climate change affects agriculture? Greenhouse gas (GHG) emissions contribute to climate change. Chemistry of main GHGs: carbon dioxide, methane, dinitrogen dioxide. Greenhouse gas emissions by food type. Greenhouse gas emissions by supply chain stage.

Pre-activity:

Module coordinator provides the suggested topics beforehand its tutorial.

Students perform a formative test on question arisen from the materials provided by the teacher.

Time: Approximately 60 min as follows are allocated.

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Module coordinator: delivers the class.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 3 **Day** 1

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food & Environment) **Day** 3

Activity title: Class discussion 2 on greenhouse gas emissions of food systems and food waste

Activity description: Module coordinator will moderate the activity. Discussion-led by students on the topic Greenhouse emission and is their choice within the present master.

Topic 1: How can the food system's greenhouse gas emissions be reduced?

Suggested guided questions:

1. Were the GHG emission statistics presented during tutorial surprising? Why?

2. Which sources of GHG emissions did you prioritize for interventions?

3. Will the proposed interventions be e-ffective? Why or why not? What steps would be involved in making them a reality? What barriers might you need to overcome?

Topic 2: Why Food Waste matters? Suggested questions upon display of the food recovery hierarchy of the U.S. Environmental Protection Agency (EPA)

1. Why do you think the US EPA ordered the list presented during the turorial? Do you agree with the order?

2. What are the costs of wasting food?

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time: Approximately 90 min as follows are allocated to student interventions and discussion

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Module coordinator: moderating the discussion.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No.

Assessment description: None.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 3 (Food-Environment Nexus) **Day** 5

Activity title: Workshop on the environmental dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities

Activity description: During this activity, the previously formed group of students will present and explain the main findings and conclusions on the environmental dimension of the chosen challenge to another team who will present their findings to the audience and vice versa.

Delivery: Power point presentation, infographics, flow charts, etc.

Discussion & Wrap-up: e.g., Guided conversation:

- Is there anything you would add to or change about your today's contribution?
- Are any parts of the today's contribution surprising?
- What aspects are you most interested in learning more about?

Pre-activity:

1) Teacher and students prepare guidelines for the peer assessment.

2) Students preparation based on literature search and weekly learning activity contents.

Time:

1) 5 hours self-study

2) 4 hours on assignment preparation

3) 2 hours for the student presentations (in total for all groups)

4) 4 hours project work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Student teams train another team to present their findings

2) Teacher: attend and actively participate in the discussion

3) External stakeholders: None

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 3 **Day** 5

Assessment: Presentations

Assessment description: Final Pitch Presentations. A final presentation session where student teams showcased their work.

Assessments for E-portfolio:

1) Feedback from teacher on presentation

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 4. The Food – Health – Environment Nexus

Week 4 (Food Safety Mobility Week) **Day** 1

Activity title: Tutorial (2) on food safety

Activity description: Module coordinator will give on overview on food safety. Topics covered during the tutorial: sources of food contamination throughout the food system; foodborne illness – pathogens causing food poisoning.

Pre-activity:

Module coordinator provides the suggested topics beforehand its tutorial.

Students perform a formative test on question arisen from the materials provided by the teacher.

Time: Approximately 60 min as follows are allocated.

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Module coordinator: delivers the class.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 4 **Day** 1

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-

economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 4. The Food – Health – Environment Nexus

Week 4 (Food Safety Mobility Week) **Day** 5

Activity title: Lecture on Current status of food safety

Activity description: Invited expert will give on overview on current status of food safety. Topics covered during the lecture: Agro-alimentary chain. Factors affecting food production. Data collection (e.g., data report by EU member states, modelling, architecture and analysis. Suitability of data science in food safety (e.g., identification of emerging patterns by big data; optimization of production and commercialization; identification of risky enterprises and/or economic relationship, early warning/foresight of risk spreading; emerging risk identification with text mining and network analysis; application of data for taking decision);

Pre-activity:

Module coordinator provides the suggested topics beforehand its tutorial.

Students perform a formative test on question arisen from the materials provided by the teacher.

Time: Approximately 60 min as follows are allocated.

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Invited teacher: delivers the class.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 4 **Day** 5

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-

economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 4 (Mobility week) **Days** 1-5

Activity title: Food safety of fish and seafood products

Activity description: This activity is proposed as an alternative study plan for students not joining the mobility Week. Present in an essay (max. 6000 words without references, figures and tables) the state-of-the-art of challenges arising on fish and seafood production and product safety.

Suggestions for developing this task (depending on the specific fish or seafood chosen):

General part: **Introduction, objective**. Start your essay by classifying the fish and seafood consumed. Establish trends for fishing; Where does your seafood come? Gather information on the fishing areas in the world and present the division on a map. Add information on the type of fish fished, data on fishing (t/year); How are aquatic animals harvested and farmed? Wild and farmed seafood; Overfishing: Environmental impact, social importance; The debate of whaling; Global warming and fishing; What does seafood production look like? Choose one fish or seafood (trout, salmon, perch, oyster, etc.) and present its farming,

Practical part: Visit a fishery, **seafood processing plant**, or **aquaculture** or **aquaponics facility**, if those exist in the area and you got access. If not, compile information about these facilities on Internet. Describe different steps of the production processes ahead of time and describe the impacts of the method applied in the facility on environment; **OR Visit a fish market** and ask/observe sales, take notes of prices. Ask for/identify means of transport of fish and seafood (local vs. long-distance?) sold in the (super)markets.

Results and discussion: a) Health Benefits and Risks of Eating Seafood; What are the main contaminants in fish and seafood? How can these pollutants be monitored? Whose responsibility is controlling safety of these products?; Are there special requirements to sell fish and seafood in (supermarkets) and to process them in restaurants?

Reflect on your relationship with seafood: How frequently do fish and seafood show up in your diet? What role, if any, do fish play in your cultural food traditions or your family's food habits?

Conclusions: Diagnosis of fish and seafood production, setting priorities.

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, Socio-economic impacts) **Day** 3

Activity title: Warm-up 4 on Panel discussion on Gender Inequalities in Food Production & Cooking as community building activity

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several topics related to our attitude toward cuisine and eating (e.g., how to eat, shop, and cook) (approximately 20 min/student/topic). Suggested topics (depending on the evolution of the discussion) are as follows:

Topic 1. Women, food, conflict (adapted from W. Belasco – Food – They key concepts)

Interview & podcast with a female relative who cooks a lot about her personal relationship with food and cooking. Record her food voice, the way she uses food to communicate her identity and bind others to herself.

1. To what extent is food a means of empowerment and to what extent is it a means of oppression?

2. What is the economic value of her "foodwork"?

3. How does she manage the more onerous aspects of foodwork? Does she use convenience foods? If so, does she attempt to personalize them?

4. How does she attempt to cater (or not) to the tastes of family members? How does she use food to "tame" men?

4. Is she "cooked out," or does she still like to cook?

5. How much "kitchen talk" goes on in her household?

6. How and where does she shop for food?

7. Ask, also, for a brief history of how her kitchen chores and expectations have changed over the years.

8. Has she become more health-conscious?

9. To what extent does she rely on mass media for new recipes? And look at her cookbooks and recipe collections for personal favorites and comments. How might her recipes be read as a form of memoir or autobiography?

Topic 2. A festive meal (Food & Rituals)

Apply the concept of "cuisine" to describe and interpret a festive family dinner ritual – i.e., a special meal that is planned, periodic, predictable, and especially loaded with meaning.

1. Introduction: What sort of meal is this and who's coming? That is, give the overall setting: type of event, time, place, personnel.

2. Food choices: Give a typical menu and tell me where the basic foods come from. Note prevailing color patterns, shapes, textures, flavor principles. Whose food preferences prevail

when it comes to planning the meal? How do these foods compare with those used in daily meals?

3. Manner of preparation: Who acquires the food? Who prepares it? Describe any specialization or division of labor. Describe the main manipulative techniques. Which dishes are made "from scratch"? From a box? Where did the recipes come from? Who cleans up? Evaluate and rate the kitchen work as a theatrical performance. (Is it a good "show"?)

4. Rules for consumption: How is the meal performed? Describe:

— Time and length of meal.

— Meal site (dining room, kitchen, family room, etc.).

— Types of utensils, dishes, napkins.

— Seating arrangements at the table.

— Serving procedures.

— Aesthetic arrangement of food on the table and on the plate.

— Appropriate dress.

— Appropriate conversation topics.

— Procedures for departure from the table.

— Post-meal rituals.

— Other relevant "table manners."

— Family idiosyncrasies.

— Comparison with ordinary daily meals.

Topic 3: So what's for dinner? (Compromise making) (*cf.* W. Belasco – Food – The key concetps)

This exercise asks you to negotiate the "culinary triangle" of contradictions. You are hosting a dinner for a very diverse group of people, including a vegetarian, a dairy farmer, a nutritionist, a hunger activist, your mother, and yourself. As a gracious host, you want to please everyone, or at the very least, you do not want to offend anyone. Everyone must eat; there cannot be any hasty, angry departures from the table. You also want to serve a meal that reflects your own tastes and values, and you don't want to spend a lot of time or money on it. What on earth can you serve? Describe the menu, taking care to show how it will appeal to each guest's sense of identity. In addition, explain how the menu is both "responsible" and "convenient."

Topic 4: Animal products in cultural food traditions or your family's food habits?

Think about any two meals the student group ate this week and write down the foods consumed. After compilation of the list, circle items that contain animal products (meat, dairy, eggs, seafood). Ask: How frequently do animal products show up in your diet? What role, if any, do animal products play in your cultural food traditions or your family's food habits?

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time: Approximately 60 min as follows are allocated to interventions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Module coordinator: moderation of the discussion

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, Socio-economic impacts) **Day** 3

Activity title: Class discussion 3 gender division in food

Activity description: Module coordinator will moderate the activity. Discussion-led by students on the topic gender division in food. Suggested guiding questions cf. W. Belasco: Food – The key concepts.

1. To what extent do women control food and to what extent does food control women?

2. Is "home cooking" overrated? Conversely, might fast food be underappreciated?

3. How have convenience foods "liberated" women?

4. If women stopped cooking, what would be lost? Gained?

5. What would it take to get men to do more family "foodwork"?

6. Should a true feminist be a vegetarian?

7. At one time, women on a first date were advised not to eat too much in front of men. Why? Is this still true?

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time: Approximately 90 min as follows are allocated to student interventions and discussion

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates; one volunteer acts as co-moderator.

2) Module coordinator: moderating the discussion.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, socio-economic impacts) **Day** 3

Activity title: Gender Inequality in Food production (**Panel discussion 3)**

Activity description: One academic staff member will moderate the activity. The aim is to introduce to students: 1. Gender aspects and challenges in building and maintaining resilience in the food system; 2. Gender issues in biodiversity conservation; 3. Small-scale female subsistence farming.

Pre-activity:

Teacher panel will provide relevant bibliography to the topics to be discussed.

Time:

1) Approximately 120 min as follows:

1. 90 minutes are allocated to interventions

2. 30 minutes are allocated for students' questions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 5 **Day** 3

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, socio-economic impacts) **Day** 4

Activity title: Test Yourself 2

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several practical tasks related to the food and cultural habits (approximately 20 min/topic). Suggested topics (depending on the evolution of the discussion) are as follows:

Topic 1: **Meatless day challenge**

Go meatless for a week. Write a reflection journal addressing the following: Was it easy to give up meat? Why or why not? What did you replace meat in your diet with? Is giving up meat an effective strategy for lessening the negative impacts of industrial animal food production? What is the role of dietary choices in improving the food system?

Topic 2: Eat local challenge

Eating as much locally grown food as possible for a week. Write a reflection about the experience: How difficult was it? Was it possible to eat local all the time? What are the barriers to eating only local food? What foods did you need to eliminate from or add to your diet?

Pre-activity:

Students do literature search.

Time: Approximately 90 min are allocated to this activity in total (about 20 min. per topic):

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the activity, gathered information will be placed on Moodle for further reference to students.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media)

influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, Socio-economic impacts) **Day** 4

Activity title: Class discussion 4 on attitude toward eating

Activity description: Module coordinator will moderate the activity. Discussion-led by students on the topic. Suggested guiding questions cf. W. Belasco: Food – The key concepts on three different topics cf. W. Belasco – Food – The key concepts:

Topic 1: We are what we ATE?

Reflect on a food that is especially laden with emotional, autobiographical, and symbolic meaning to you – your equivalent of the tiny cake (madeleine) that sparked French novelist Marcel Proust's seven-volume classic, Remembrance of Things Past (1913–1926). Think hard about your own personal madeleine. It may be anything – from a full meal to a packaged snack – as long as it's edible. Try to taste it before writing. In 500 words, describe your madeleine and the images, associations, and memories it conjures up. These images do not have to be positive, by the way. Describe, also, how you encountered this memory – for example, by chance, or by will.

You can also try classifying your madeleine:

- Is it positive, negative, or somewhere in between (bittersweet)?
- Is it a comfort food or a discomfort food? A medium for conflict or reunion?
- Is it homemade or commercial?
- Is it a demographic "marker" of ethnicity, region, generation, gender, religion, or class?
- Does eating this food make you part of a group? Exclude you from other groups? (Boundary maintenance)

Note: If you can't come up with your own special madeleine, try the exercise with Oreo: "When I eat an Oreo I think of . . ."

Topic 2. Are we what we EAT? Reflect on

• Think of your own family as a mini-society, with its own distinctive "cuisine."

• What are your family's basic foods, flavor principles, preparation techniques, manners, and supply system?

• Conventional wisdom holds that the family dinner is in "decline." Is this true in your case? In what new ways do modern families find time to eat together?

• Given the size and diversity of the United States, is it meaningful to talk of an "American cuisine"? Indeed, is it meaningful to talk of any national cuisine?

• How do you eat an Oreo?

• Assess the strengths and weaknesses of using food memoirs (madeleines) as social or historical data. Is there a disparity between what people say (representation) and what they actually do (behavior)? And how accurate are our memories anyway?

• How are food memories exploited for profit and power?

• What are the limits of the "You are what you eat" axiom? In what ways might your food choices not reveal who you are?

Topic 3: Toward Mindful Eating (*cf.* Belasco: Food – The Key Concepts)

For seven days, keep a record of all eating occasions, including "snacks." In particular, write down, in a chart:

1. When you ate it and how long it took to eat it.

2. The number of people you ate with (people you actually know).

3. Where you ate it.

4. Who prepared it.

5. The cost of your portion of this meal.

6. The geographical source of the #1 ingredient. If you don't know, say "Don't know").

7. The predominant taste sensations.

8. The nutritional composition of what you ate, including these numbers, which may be derived using the USDA's online Nutrient Data Laboratory

— Total weight in grams. (Note that USDA does this by average portion size, which is often a lot less than what people actually eat.)

— Energy (kcal).

— Protein (grams).

— Total lipid (fat) (grams).

— Saturated fatty acids (grams).

— Cholesterol (mg).

9. Looking back at the seven days, please calculate:

— Your average daily calorific intake (total kilocalories divided by 7).

— The percentage of total kilocalories that were derived from fat. (To do this, multiply your number of grams of total lipid times 9, then divide this number by your total kilocalories.)

— The percentage of total kilocalories consumed away from home.

10. Finally, analyze the significance of the week's food consumption:

— What surprises you most about what and how you ate over those seven days?

— How did keeping a food diary affect your food consumption?

Topic 4: Food references in the Pop culture

Select a song, story, film, or television program that has a lot of food content. Analyze this "text" for the contradictory aspects of cooking and dining, including:

• As a tool of commensality (bringing people together) and exclusion (separating Us from Other), conviviality and conflict (the battle of the dinner table).

• As an enabler of or substitution for sexual relationships.

• As a means by which people communicate (voice).

• As a demographic marker (gender, race, class, region, etc.).

• As a means of empowerment for the cook.

• As an expression of resistance or rebellion.

• As tragedy (e.g., gangster kills an enemy in a restaurant) and comedy, especially irony (e.g., gangsters discuss their sauce recipes).

• As a narrative device, especially the way meals are used to advance the plot, enable key conversations, and ground characters in daily rituals.

Some pop cultural references involving food:

Type	Title	Director	Release year
Film	The Lady and the Tramp	Wilfred Jackson, Clyde Geronimi, Hamilton Luske	1955
Film	The Godfather	Francis Ford Coppola	1972
Film	Babette's Feast	Gabriel Axel	1987
Film	The Cook, the Thief, His Wife & Her Lover	Peter Greenaway	1989
Film	Eat Drink Man Woman	Ang Lee	1994
Film	A Walk in the Clouds	Alfonso Arau	1995
Film	My Big Fat Greek Wedding	Joel Zwick	2002
Film	Marie Antoinette	Sofia Coppola, Yves Simoneau, Francis Leclerc	2006
Film	Ratatouille	Brad Bird	2007
Film	Lemon tree	Eran Riklis	2008
Film	Julie and Julia	Nora Ephron	2009
Film	The Lunchbox	Ritesh Batra	2013
Film	The Hundred-Foot Journey	Lasse Hallström	2014
Film	The Cakemaker	Ofir Raul Graizer	2017
TV	Top Chef	n.a.	n.a.

Pre-activity:

Module coordinator provides the suggested topics and questions

Students prepare the task, do literature search if necessary

Time: Approximately 90 min as follows are allocated to student interventions and discussion

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates; one volunteer acts as co-moderator.

2) Module coordinator: moderating the discussion.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No Day No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food & Cultural, socio-economic impacts) **Day** 4

Activity title: **The role of cultural factors in sustainable diet** (**Panel discussion 4)**

Activity description: One academic staff member will moderate the activity. The aim is to find an answer with the involvement of CHARMEU students whether is it possible to compromise between cultural traditions and healthy and environmentally conscious diet? Planned topics:

1. Introduction: Are all foods spiritually healthy? – Religious perspectives on food

2. Religious beliefs and eating habits: dietary standards of world religions

3. Religious and cultural practices in implementing a sustainable diet

4. Analysis of traditional diets in terms of health and environmental awareness

5. How do CHARM-EU students solve their diet; Do they make any compromise?

Pre-activity:

Teacher panel will provide relevant bibliography to the topics to be discussed.

Time:

1) Approximately 120 min as follows:

1. 90 minutes are allocated to interventions

2. 30 minutes are allocated for students' questions

Roles (e.g., student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g., hybrid classroom, online, on-campus): Hybrid

Assessment Week 5 **Day** 4

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 5 (Food-Environment Nexus) **Day** 5

Activity title: Workshop on the socio-economical dimension of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities

Activity description: During this activity, the previously formed group of students will present and explain the main findings and conclusions on the health dimension of the chosen challenge in form of role-playing. Thus, students trams express the diagnosis of the challenge from the perspective of the actors involved.

Delivery: Power point presentation, infographics, flow charts, etc.

Discussion & Wrap-up: e.g., Guided conversation:

- Is there anything you would add to or change about your today's contribution?
- Are any parts of the today's contribution surprising?
- What aspects are you most interested in learning more about?

Pre-activity:

1) Teacher and students prepare guidelines for the peer assessment.

2) Students preparation based on literature search and weekly learning activity contents.

Time:

1) 5 hours self-study

2) 4 hours on assignment preparation

3) 2 hours for the student presentations (in total for all groups)

4) 4 hours project work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students present their presentations performing a role-play and actively participate in the discussion

2) Teacher: attend and actively participate in the discussion

3) External stakeholders: None

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 5 **Day** 5

Assessment: Presentations

Assessment description: Final Pitch Presentations. A final presentation session where student teams showcased their work.

Assessments for E-portfolio:

1) Feedback from teacher on presentation

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Complexity of Food-Health-Environment Nexus) **Day** 1

Activity title: Tutorial: Food waste: how can we move from 'sin' to 'win-win'? - The role of NGOs in surplus food redistribution

Activity description: Food waste is complex topic. Redistribution of surplus food within the food chain has become a common approach, with a range of organisational structures ranging from food banks to community pantries to meal delivery. While food redistribution is often framed within an environmentalist discourse, government agencies and businesses increasingly adopt a 'food poverty' framing.

Surplus food redistribution is often presented as a 'win-win' situation as it tackles both food poverty and food waste. Yet, this is a contentious issue as it can be seen to divert attention from the need to address income inequality and problems with the generation of surplus at in production. Critics ask questions such as:

- Is it appropriate to use surplus food to feed people in hunger?
- Is this not simply a bandaid to more deep-rooted problems of poverty?

In this discussion we will look at how redistribution of 'surplus food' by NGOs connects individuals and communities in ways that go beyond environmental or food poverty objectives. The discussion will draw on a recently completed research project undertaken in Ireland that examined surplus food redistribution from retailers to community organisations and on to community members. We will consider how these actors manage, make sense of, and use surplus food and how redistributed food is integrated into a broader landscape of community-based service delivery that uses food to build and maintain social connection. We will discuss the strengths and weaknesses of the food poverty frame and the extent to which a discourse that stresses the potential of commensality and universality may have greater potential in addressing the wicked problem of food waste.

Pre-activity: -

Time: Approximately 60 min as follows are allocated to interventions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participates

2) Teacher answers the students' questions

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4].

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Complexity of Food-Health-Environment Nexus) **Day** 1

Activity title: Conceptual framework of food systems for diets and nutrition - Understanding the complexity and vulnerability of food systems.

Activity description: During this activity, one academic staff will discuss the most important aspects on food system development that led to the current challenges in this field. This class will focus only on aspects that were not completely understood by students as revealed by the diagnostic quiz and student questions (see also Pre-activity content below). The teacher will start the class by inviting students to solve their peers' doubts. In that manner, students can see themselves represented in it. The teacher acts as a support to guide students. The idea is that the teacher uses students' responses to also make students plead/reflect on their answers. At the end of the lecture, students answer another short Q&A quiz composed of about 10 items (e.g., multiple choice, short answer, matching, missing words) on Moodle/Wooclap from the content of the lecture. It is meant for the teacher to detect what topics have been understood and those that were not (so he/she can delve into them) to adjust the content to students real learning moment.

Pre-activity:

1) Teacher: Due to the complexity of the topic and limited time available, the teacher will share some relevant bibliography/materials to students for further insights. Teacher prepares and evaluates a short diagnostic quiz to better adjust the topic of his lecture (contextualization to students real learning moment). At the end of the quiz there will be a possibility to send a question or remark. In this way, students can formulate and submit their doubts and for further clarifications. The most interesting formulated questions will be inserted among the lesson slides on Wooclap by the teacher. Due to the time constraints, teacher prepares brief answers to the student questions submitted and decides which parts / slides of the lesson can be skipped.

2) Students: Students are invited to solve a short Q&A quiz beforehand on Moodle (on Day 1).

Time:

1) Approximately 90 min as follows:

1. 60 minutes lecture

2. 15 minutes are allocated for students' questions

3. 15 min short Q&A quiz.

2) 2 hours student preparatory work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the lecture and take notes

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 6 Day 1

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Tutorial 4

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Complexity of Food-Health-Environment Nexus) **Day** 3

Activity title: Tutorial on Socio-economic impacts of biotechnology / genetically modified crops

Activity description: Module coordinator will give on overview on Socio-economic impacts of biotechnology / genetically modified crops.

Pre-activity:

Module coordinator provides the suggested topics beforehand its tutorial.

Students perform a formative test on question arisen from the materials provided by the teacher.

Time: Approximately 60 min as follows are allocated.

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students attend the activity, take notes and actively participates

2) Teacher delivers the class.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 6 **Day** 3

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.5: Assess the role of biotechnology in the future of sustainable food consumption and dietary health, including the societal, economic and environmental implications thereof. [PLO 1, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Complexity of Food-Health-Environment Nexus) **Day** 3

Activity title: Test Yourself 3

Activity description: Module coordinator will moderate the activity. Discussion-led by students around several practical tasks related to consumer identity (approximately 20 min/topic). Suggested topics (depending on the evolution of the discussion) are as follows:

Topic 1: **What do not you know about food?** Look at some food labels prior the class (e.g., mineral water, soft drink, animal or plant-based product) and try to answer the following questions: What is this label telling you or not telling you?; Why is this label trustworthy or untrustworthy?; Does this label help answer any of the questions you had about what is in your food?

Topic 2: Decoding food labels & Why is food labeling important to me? Explore which labels on food packages are regulated, which are trustworthy, and which are used as marketing tools. What information about food should companies be required to show on a package? Do the food labels required by the government offer enough information about your food? If not, what information is missing? Which food labels are most trustworthy? How do you know? Which labels look misleading? Why? Are there any food label claims the government should regulate more strictly? Why or why not?

Write a journal entry in response to the prompt: Why is food labeling important to me as a consumer? How does it affect me?

Topic 3: Food labeling history: Research the history of a specific food label, such as USDA Organic, gluten free, or kosher. In a two- to three-page report, students answer these questions: Why was the label created? What standards does the label uphold? On what foods does this label appear? Are there critiques of the label? Does the label provide useful, credible information? Could this label be improved?

Topic 4: Tracking food labels: track the kinds of claims they find on food labels throughout a week, keeping a journal with the following information:

1. Name of the product

2. Quality claims (e.g., triple-washed, fresh)

3. Animal welfare or environmental claims (e.g., dolphin-safe)

4. Nutrition claims (e.g., no trans fat, fortified with iron)

5. Health claims (e.g., boosts immunity)

6. Social justice claims (e.g., fair trade)

7. Factors differentiating product from competition (e.g., 50% less sugar)

Students should include claims from at least five foods or drinks, and note which ones they found most and least trustworthy, and why.

Pre-activity:

Students do literature search.

Time: Approximately 90 min are allocated to this activity in total (about 20 min. per topic):

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate; one volunteer acts as co-moderator.

2) Teacher: attendance of the activity, gathered information will be placed on Moodle for further reference to students.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week No **Day** No

Assessment: No

Assessment description: None

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Panel discussion 5

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Complexity of Food-Health-Environment Nexus) **Day** 3

Activity title: **Challenges in Food Consumer Information** (**Panel discussion 5)**

Activity description: One academic staff member will moderate the activity. The aim is to find an answer with the involvement of CHARMEU students whether is it possible to compromise between cultural traditions and healthy and environmentally conscious diet? Planned topics:

1. Food labelling in Europe

2. Food traceability and food authentication

3. Myths and misconceptions about food

Pre-activity: Teacher panel will provide relevant bibliography to the topics to be discussed.

Time:

1) Approximately 120 min as follows:

1. 90 minutes are allocated to interventions

2. 30 minutes are allocated for students' questions

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students: attend the activity, take notes and actively participate

2) Teacher: attendance of the lecture, answering the questions arisen and provision of bibliography/material on Moodle.

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 6 **Day** 3

Assessment: Diagnostic and Formative

Assessment description: Diagnostic assessment: solving the short Q&A quiz on Moodle one day before the presentation, students will present a proof of previous knowledge.

Formative assessment: solving the short Q&A quiz on Moodle at the end of the presentation, students will present a proof of having understood the concepts presented.

Assessments for E-portfolio: No.

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

Module title: Module 1. The Food – Health – Environment Nexus

Week 6 (Food-Environment Nexus) **Day** 5

Activity title: Workshop on all dimensions of challenge (groups 5-8) & **Wrap-up 2**: Diagnosis & setting priorities

Activity description: Language register" workshop (express the diagnosis of the challenge to 1) decision-make stakeholder, 2) actor involved in food production, 3) mass media (fake interview, press release). Students give a **diagnosis** of the health – environmental and socio-economic impacts of the challenge chosen related to food, diet, food productions in a **transdisciplinary** way based on reading and interpreting research article in hybrid meeting, followed by peer and teacher assessment.

Delivery: Power point presentation, infographics, flow charts, etc.

Discussion & Wrap-up: e.g., Guided conversation:

- Is there anything you would add to or change about your today's contribution?
- Are any parts of the today's contribution surprising?
- What aspects are you most interested in learning more about?

Pre-activity:

1) Teacher and students prepare guidelines for the peer assessment.

2) Students preparation based on literature search and weekly learning activity contents.

Time:

1) 5 hours self-study

2) 4 hours on assignment preparation

3) 2 hours for the student presentations (in total for all groups)

4) 4 hours project work

Roles (e.g. student, teacher, external stakeholder, mentor, …)

1) Students present their presentations and actively participate in the discussion

2) Peer review: students provide feedbacks on the presentations of each other

3) Teacher: attend and actively participate in the discussion

4) External stakeholders: None

Location (e.g. hybrid classroom, online, on-campus): Hybrid

Assessment Week 6 **Day** 5

Assessment: Presentations

Assessment description:

1) Initial Presentation. A broad presentation to highlight the initial research findings across the partially developed concepts.

2) Demo presentations acting as a practice dry-run and a chance to receive feedback. Students are expected to use this feedback to refine their ideas.

3) Final Pitch Presentations. A final presentation session where student teams showcased their work.

Assessments for E-portfolio:

1) Peer assessment on presentations

2) Feedback from teacher on presentation

4) Self-assessment on presentation skills

Module Learning Outcomes:

MLO 10.1: Analyse the importance of diet in maintaining health and the impact of diet on diseases, including an appreciation of the multifaceted dimension of undernutrition and obesity. [PLO 3]

MLO 10.2: Define the environmental, social and health challenges (local and global) of food production, consumption and waste in terms of equity, justice, gender, different dimensions of sustainability, culture, geopolitics and other relevant dimensions. [PLO 1, 2]

MLO 10.3: Articulate a critical awareness of the changes in nutritional requirements throughout the life cycle of individuals and on how traditional and current discourses (including media) influence nutrition and dietary patterns (taking into consideration the impact of gender, culture, age, lifestyle etc.). [PLO 2, 3]

MLO 10.4: Analyse how and why food is produced, prepared, narrated and consumed, taking into consideration the impacts of gastronomy, gender, age, lifestyle, religion and culture on dietary choices, and the subsequent impact on health. [PLO 2, 3]

MLO 10.5: Assess the role of biotechnology in the future of sustainable food consumption and dietary health, including the societal, economic and environmental implications thereof. [PLO 1, 3]

MLO 10.6: Critically discuss key research and evaluate the different dimensions and causes of food inequality and insecurity from a variety of disciplines and from socio-ecological and socio-economic systems perspectives, taking into account nexus between water, food, waste, energy, biodiversity, climate, health, poverty, etc. [PLO 2, 3, 5]

MLO 10.7: Assess how (decisions around) the use of and access to water, energy and other (natural) resources are interconnected and impact food security from global to local levels. [PLO3, PLO4]

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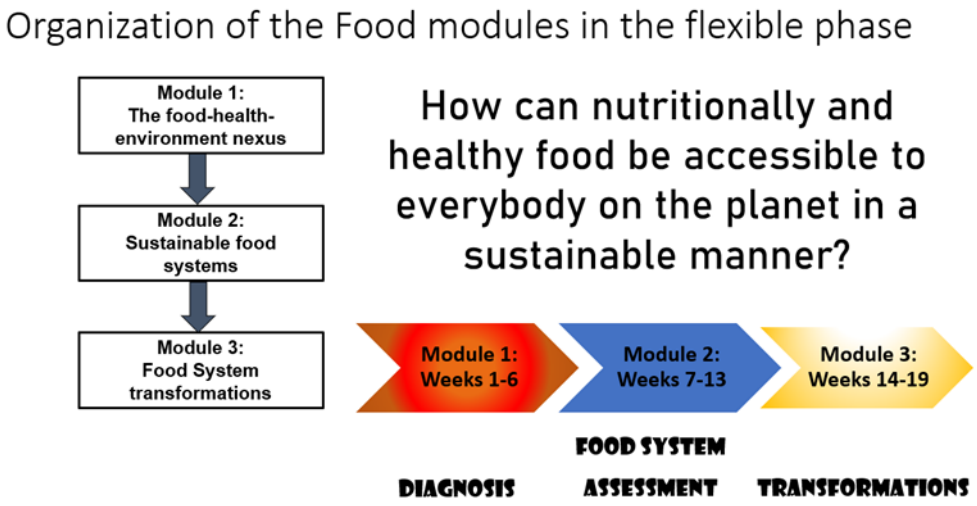
Student Module 2 Descriptors: Food system assessment

Preamble: General information valid for all three Food modules

The Food theme builds on the knowledge gained in Phase 1, in particularly building on the theories of systems thinking, complex models and transdisciplinary research. Student will use this knowledge and apply it to the challenges they will be working on and step-by-step guides and resources from Phase 1 will be used as tools to support the challenges.

The organization of the three food modules as well as the link between them are illustrated in the picture below.



FOOD Theme will run under a transversal challenge within the three modules tackling subsequently: 1) identification/diagnosis (Module 1), 2) evaluation/assessment (Module 2), and transformation/intervention (Module 3) of food production system.

Students have chosen their own challenges within five 5 macro-challenges

Macro-challenges	*ACRONYM: Challenge groups*	*students*
1. Consumption of products of animal origin and sustainable development (including animal welfare, environmental, health issues, etc.)	WESTFOODES: How to reconcile "culture" - in food consumption - with sustainable agricultural practices (the status meat consumption holds in our society - with its gendered implications)	1. Dominik Kulczynski (ELTE), 2. Sara Lang (UM), 3. Emmet Lowry (ELTE), 4. David O'Connor (UB), 5. Sealia Thevenau (UM)
	SEAF: How to protect European waters from overfishing?	1. Pien Barnas (UB) 2. Alessandro Bonito (UU) 3. Beau Munnick (UU) 4. Meghan O'Brien (ELTE) 5. Elise Vens (ELTE)
3. Local and short supply chains and	ReFARM: The role of agroforestry in increasing soil health/the challenge of implementation	1. Linda Bovo (ELTE) 2. Isa Maathuis (UB) 3. Vania Roseluna (UB)

sustainable development		4. Scarlett Sheriff (UB) 5. Migle Labeykite (UU)
4. Deforestation, food systems and environmental issues (including loss of biodiversity, climate change)	PROCIRCULAR: How can we make nature thrive through a circular agricultural production?	1. Shrijeeta Purkait (UB), 2. Emily O'Sullivan (UB), 3. Ilona Tóbiás (UU), 4. Rosanne Wahl (UB)
	GRAFS: Great Green Wall	1. Jill Hoost (UB) 2. Lisa Kranz (UB) 3. Diana Laborda Jou (UM) 4. Lena Sauer (UB) 5. Célia Valls Rodriquez (ELTE)
5. Food-related health problems (e.g., malnutrition, obesity).	E.A.T. - European Algae Transition: Food resources/innovation (algae & seaweed as potential alternative)	1. Nathan Gaborieau (ELTE), 2. Liam Maguire (UU), 3. Tessa Nauta (UB),
	FEAST: How to ensure accessibility of healthy & sustainable food?	1. Judith Albert (UU) 2. Eline van Ballegooij (UU) 3. Madalena Bravo (ELTE) 4. Freeke Jansen (UM) 5. Alba Redón (UU)

Assessment: for each module, a final personal reflection about the challenge compiled by the students will be assessed.

	**Expected outcome: Friday 13th May, student will have to participate to one-day symposium on food system assessment of each university with the participation of Food KCT member, guest teacher, external stakeholders' jure and peer-review action.**

Miscellaneous:

1. The MS Teams will only be used to run the learning activities in hybrid mode (setting up of different channels for each group).
2. Module contents to be upload to Moodle
3. All assessment will be organized in Scorion environment.

Module details

Module title:	02. Sustainable food system
Module coordinator:	name: Karen Lambert-Cordillac e-mail: karen.lambert-cordillac@umontpellier.fr institution: University of Montpellier, France
Teachers	Abbreviations for institutions: Eötvös Loránd University (ELTE), University of Barcelona (UB), University of Montpellier (UM), University of Utrecht (UU)

Members of food Knowledge Creation team (KCT) or Expanded Network of CHARMEU or of one of the 5 universities for the Academic year of 2021/2022

Name	*E-mail*	*Institution*
Camps-Gases, Montserrat	mcamps@ub.edu	UB
Caron, Patrick	patrick.caron@cirad.fr	UM
Bonnet, Clément	clement.bonnet@umontpellier.fr	UM
Van den Berg, Floris	f.vandenberg2@uu.nl	UU

Extra-academic actors for the Academic year of 2021/2022

Name (country acronym)	Institution	Observation
Avallone, Sylvie	Supagro	sylvie.avallone@supagro.fr
Leray, Pierre	IRD	pierre.leray@supagro.fr

Extra-academic actors not belonging to CHARM-EU for the Academic year of 2021/2022

Name (country acronym)	Institution	Observation
Chotte, Jean-Luc	Senior scientist at Institut de Recherche pour le Développement (IRD)	Researcher
Declerck, Fabrice	Scientific Director of EAT	Institution
Hendricks, Sheryl	*Head of Department of Food Security*	University of Pretoria
Massart, Marie	Montpellier city, Food policy, urban agriculture	Politic
Montginoul, Marielle	Research director at Irstea	Researcher
Mosnier, Aline	Scientific Director of the FABLE Consortium	Institution
Neang Malyne	Lecturer-researcher in Ecosystem Services and Agro-ecology Cc-Founder of ECOLAND research center in Cambodia	Lecturer-researcher

Module 2 design and content

Module high-level learning aims: The objective of module 2 is to develop a methodological aspect and give methodologies tools to explore the different dimensions of food systems assessments.

After this module, students will be able to:

1. Describe a food systems perspective to evaluate food-related sustainability challenges and transformations with appropriate tools

2. Identify and evaluate food systems transformations and their consequences in terms of different dimensions of sustainable development at different levels using the appropriate tools.

3. Analyse the food-health-environment nexus consequences of food production and consumption in a transdisciplinary fashion in order to provide conclusions supported by a reflection based on the analysis of the data in with One-health approach.

After presenting to students the nexus between food, health and the environment in the Module 1, we will address in the Module 2 the assessment of food systems from the perspective of their sustainability. The Module 3 will then focus on how actions can lead to a transformation of food systems in order to make food systems more sustainable.

Compared to the other modules the Module 2, which is called "Sustainable and socially just food system", is thus characterized by its normative approach and by a content that is more oriented toward methodology.

The notion of sustainability integrates environmental, social and economic dimensions. This implies adopting a holistic approach to assess the sustainability of food systems – an approach that would considers the different interactions within the system and its complex nature.

Module 2 is organized by thematic weeks, addressing each week a specific subject related to assessment:

1) Why/How sustainability of food systems have emerged
2) Assessing the different dimensions of food systems in relation with student challenge
3) Reading week
4) Methodology and tools for food systems assessments
5) Mobility week
6) Final conclusion and research article

Connection with other phases and modules: *see* Preamble

Module 2 Learning Outcomes: On successful completion of the module students should be able to:

- MLO 11.1: Recognise, explain and reflect upon the positions of different actors that influence or are affected by food insecurity and that play a role in food systems. [PLO2]

- MLO 11.2: Apply tools that help characterize food systems and evaluate them using various criteria, taking account of different dimensions of sustainability, democratic values, justice, equity, human rights, and other relevant dimensions. [PLO 3, 4, 5]

- MLO 11.3: Critically discuss and evaluate the (un)sustainability of global supply chains of agri-food systems and demonstrate the connection between these, sectoral interrelationships and international interdependencies. [PLO 1, 2, 5]

- MLO 11.4: Recognise, explain and reflect on how food systems components work and interact, including the (positions and power dynamics of) actors therein, and how these components influence sustainability at different levels. [PLO 1, 2, 5]

- MLO 11.5: Investigate the global and local impacts of food systems across borders, including the effects of food consumption in one location on sustainability challenges elsewhere [PLO2, PLO4]

- MLO 11.6: Define the different paradigms to view and design food-related sustainability transformations to address environmental degradation and nutritional concerns related to food production, overconsumption, unequal distribution of food, food and nutrition insecurity. [PLO 2, 6]

- MLO 11.7: Differentiate between the different cultural, political and (inter)disciplinary framings of food systems and food-related sustainability challenges and explain how they relate to issues like gender, human rights, education, identity, ethics, religion sovereignty, perspectives on the environment. [PLO1]

- MLO 11.8: Evaluate the role of innovation (the future of) sustainable, healthy, secure and socially just food systems, taking into account the societal, economic and environmental implications thereof. [PLO 1, 3]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Teacher-led activities	**Place: Hybrid classroom (HC) at 4 CHARMEU partner universities**
Lectures	Lectures focused on main topics addressed during the thematic week
Tutorials	Deepening of a concept based on stakeholder experiences
Panel discussions	Academic and non-academic actors discussion around a hot topic
Joint student-module coordinator led activity	**Place: HC at 4 CHARMEU partner universities**
Class discussion/reflexion	After each lecture, time with the speaker is provide in order to for have a discussion and reflexion on the subject presented.
Workshops	To deeper understand a topic with the objective to levelling up the knowledge. Workshop 1: local is not always sustainable Workshop 2: Is vegan more sustainable than red meat ?
Student-led activities	**Place: HC at 4 CHARMEU partner universities + Online**
Workshops preparation	Reading and analysing pedagogical tools Presentation of their conclusions

A detailed example for the proposed learning activities can be seen in Annex 1.

Study materials

These materials will be shared in the Virtual Learning Environment:

- mandatory and optional scientific literature (articles, reports, video)

- links to relevant websites
- stakeholders presentation

Module 2 detailed description and timetable: First Week

[all assessment activities are marked in blue]

W7 Why/How sustainability of FS have emerged (28-1/04/2022)

Readings & links of the week:

Irène FRAIN, La forêt des 29, EAN : 9782749913605.

Caron, P., Ferrero y de Loma-Osorio, G., Nabarro, D., Hainzelin, E. Guillou, M., Andersen I, … Verburg, G. (2018). F*ood systems for sustainable development: proposals for a profound four-part transformation.* Agronomy for Sustainable Development, 38(14). https://doi.org/10.1007/s13593-018-0519-1

Caron P., 2020. Nourrir 10 milliards d'êtres humains et assurer leur sécurité alimentaire : une question dépassée ? In: Raison présente, 2020/1, N° 213, pp 11-20. ISSN 0033-9075. https://www.cairn.info/revue-raison-presente-2020-1-page-11.htm

Caron P., 2020. From crisis to utopia: crafting new public–private articulation at territorial level to design sustainable food systems. In: Agriculture and Human Values. https://doi.org/10.1007/s10460-020-10065-1

Dury S., Bendjebbar P., Hainzelin E., Giordano T., Bricas N., eds, 2019. Food systems at risk: new trends and challenges, Rome, Montpellier, Brussels, FAO, Cirad and European Commission. DOI: 10.19182/agritrop/00080

Mond'alim 2030 : Panorama prospectif de la mondialisation des systèmes alimentaires. Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt, Centre d'Etudes et de Prospective. Ed. : La Documentation française, 2017. ISBN : 978-2-11-010331-4

Contribution du HLPE aux travaux du Forum Politique de Haut Niveau des Nations Unies (http://www.fao.org/cfs/cfs-hlpe/news-archive/detail/fr/c/1030114/)

Questions cruciales et émergentes pour la sécurité alimentaire et la nutrition. Note du HLPE, 2ème édition. (http://www.fao.org/cfs/cfs-hlpe/news-archive/detail/fr/c/889929/)

HLPE, 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome. (http://www.fao.org/3/a-i7846e.pdf)

Edwards-Jones, G. Does eating local food reduce the environmental impact of food production and enhance consumer health? Proceedings of the Nutrition Society (2010), 69, 582–591.

Polleau A, Biermann G. Eat local to save the planet? Contrasting scientific evidence and consumers' perceptions of healthy and environmentally friendly diets. Current Research in Environmental Sustainability 3 (2021) 100054.

Stein AJ, Santini F. The sustainability of "local" food: a review for policy-makers. Review of Agricultural, Food and Environmental Studies. (2021) https://doi.org/10.1007/s41130-021-00148-w.

Shapin S. 'You are what you eat': historical changes in ideas about food and identity. Historical Research, vol. 87, no. 237 (August 2014)

https://www.lemondenouveau.fr/2021/10/21/alimentation-durable-2021-copy/

Here are three videos which are recommended to watch in preparation of the lecture of Dr Van Den Berg Floris

- 'The environmental impact of livestock': https://www.youtube.com/watch?v=VGJduwENNw4
- Peter Singer, 'The way we eat': https://www.youtube.com/watch?v=fFkD5tjJ4eo
- Melanie Joy: 'Carnism': https://www.youtube.com/watch?v=ao2GL3NAWQU

Monday Activity (28/03/2022)	**Content**	**teachers**	**timetable**
Introduction to module 2: Video from module coordinator to introduce the module, the main objectives, the assessments and the final expectation.	Introduction	*Module Coordinator **Karen Lambert-Cordillac***	*0,5 (10:30-11)*
Lecture by Patrick Caron on how sustainability of food systems has emerged	Historical perspective and basic concepts	***Patrick Caron***	*2 (11:00-12:00)*
Class discussion on the presentation		*Patrick Caron*	*1 (12:00-13:00)*

Lecture by Marie Massart on how Montpellier city manages sustainability of food	Presentation of the sustainability management at a political level.	Marie Massart	*1 (14:00-15:00)*

Tuesday Activity (29/03/2022)	**Content**		**No teaching**
Team/individual reading work: what is sustainable in your own challenge, what indicators could be used.	Research article on the indicators need to assess sustainability for each dimension.	*Self-organized*	

Wednesday Activity (30/03/2022)	**Content**	**teachers**	**timetable**
Lecture on the "Food ethics & Sustainable Development"	Philosophical perspective of sustainable development	Floris van den Berg (UU)	*3h (10-13:00)*
Team work/Workshop "Local is not always sustainable"	Based on selected articles, preparation for the presentation of the concept that local is not always sustainable.	***K. Lambert-Cordillac***	*2 (14:00-16:00)*
Workshop presentation and feedback	Focus on methodology: importance of indicators/criteria for assessment.	***K. Lambert-Cordillac***	*1 (16:00-17:00)*

Thursday Activity (31/03/2022)	**Content**		**No teaching**
Team/individual reading work: What are the criteria/indicator need for assessment of sustainability in each dimension of the challenge	**Self-study**: *summarize reading and prepare questions for the next day*	*Self-organized*	

Friday Activity (01/04/2022)	**Content**	**teachers**	**timetable**

Lecture: *"Are we what we eat? Remarks on food and identity in history"*	**Lecture**: Food from an historical perspective	*Montserrat Camps-Gaset + K. Lambert-Cordillac (facil.)*	*2 (10:00-12:00)*
Class discussion on the presentation	Integrate the reading with the lecture for a discussion	*Idem*	*1 (12:00-13:00)*
Jigsaw class on criteria/indicators needed for assessment	Division by challenge for elaborate the indicators need for the assessment of sustainability for each dimension of the challenge	*K. Lambert-Cordillac (facil.)*	*14:00-17:00*

Module 2 detailed description and timetable: Second Week

week 8 Assessing the differents dimensions of FS in relation with student challenge

Readings & links of the week:

FAO Sustainability Assessment of SAFA: https://www.fao.org/documents/card/es/c/b82b9fdc-7f0a-52ed-9ab1-e375d70f8f99/

FAO (2014). Sustainability Assessment of Food and Agriculture systems Guidelines (SAFA version 3.0). Rome: FAO. https://www.fao.org/family-farming/detail/en/c/284657/

Fanzo J et al. The importance of food systems and the environment for nutrition. Am J Clin Nutr 2021;113:7–16.

Willett W et al. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. Lancet 2019; 393: 447–92

Hendrick S et al. The True Cost and True Price of Food. **https://sc-fss2021.org/**

https://eatforum.org

Monday Activity (04/04/2022)	**Content**	**teachers**	**timetable**
Lecture by Fabrice DeClerck: "EAT consortium"+ **discussion**	Presentation of the EAT consortium and main results. Interactive lecture.	**Fabrice DeClerck** ***+ K. Lambert-Cordillac (facil.)***	*3 (10:00-13:00)*
Lecture by Clément Bonnet :"Intellectual property in the economics of agriculture" + **discussion**	Economic perspective of FS	Clément Bonnet + *K. Lambert-Cordillac (facil.)*	*3 (14:00-17:00)*

Tuesday Activity (5/04/2022)	**Content**	**No teaching**	**No teaching**

Team work: preparation of the evaluation grid for the video	**Self-study**: Based on the assessment rubrics for the video, student have to create their own evaluation grid.	*Self-organized*	

Wednesday Activity (6/04/2022)	**Content**	**Teacher**	**timetable**
Lecture by Marielle Montginoul on : "How managing water resources" + **discussion**	Focus on assessment of water resources.	Marielle Montginoul	*3 (10:00-13:00)*
Lecture by Sheryl Hendricks on: "The True Cost and True Price of food" + **discussion**	Focus on assessment of food price	Sheryl Hendricks	3 (14:00-17:00)

Readings & links of the day:

Thursday Activity (7/04/2022)	**Content**	**No teaching**	**No teaching**
Team work: preparation of the evaluation grid for the video	**Self-study**: Based on the assessment rubrics for the video, student have to create their own evaluation grid.	*Self-organized*	
Assessment of the evaluation grid sent by each challenge	**Evaluation grid / challenge**		

Friday Activity (8/04/2022)	**Content**	**Teacher**	**timetable**
Tutorial/Feedback: Analyse of the different grids and collectively elaborating the evaluation grid for the video (peer and teacher evaluation)	Evaluation grid consensus	*K. Lambert-Cordillac (facil.)*	*1 (10:00-11:00)*
Tutorial by Marc De Nale on: "Sustainability of fruits and vegetables" (Stakeholder: Demain la Terre) + Discussion	How a third way of production is already available for fruits and vegetables production. The network of this organization.	Marc De Nale + *K. Lambert-Cordillac (facil.)*	2 (11:00-13:00)
Lecture and tutorial by Neang **Malyne on: "Definition of your research questions about ecosystem services concept"**	Description of the ecosystem services concept and application to student's challenge.	Neang Malyne	3 (14:00-17:00)

Module 2 detailed description and timetable: Third Week

Holidays week and week 9: Reading and personal work

During this reading week, the student by challenge have to prepare a video with the criteria/indicators need for the assessment of different dimensions of their challenge. This activity is the continuum of the jigsaw class. A conclusion is expected on the criteria with a focus on the need for multicriteria analysis.

A peer and teacher evaluation of the video will be done according to the evaluation grid validated together.

Module 2 detailed description and timetable: Fourth Week

week 10: Methodology

During this week, the lectures will give different methodology tools for assessment of the different dimension of FS. Examples and exercise will be proposed for train the student to these methodologies. At the end of this week, the student will be able to understand how to manage the data and the limits of the methodology used.

Reading & links for the week:

https://foodsystemsdashboard.org/
https://sustainablefoodlab.org/how-we-work/tools/
https://scienceetbiencommun.pressbooks.pub/evaluationanthologie/front-matter/introduction/
https://faculty.washington.edu/mpurcell/jper.pdf
https://www.chaireunesco-adm.com/2021-Seminar-Impact-assessment-of-food-innovations
https://syalinnov.org

Monday Activity (25/04/2022)	**Content**	**teachers**	**timetable**
Lecture by Pierre Leray on: "Syalinnov" + Examples+ Discussion	Presentation and explanation of Syalinnov:	*Pierre Leray+ K.Lambert-Cordillac (facil.)*	*3 (10:00-13:00)*
Lecture by Sylvie Avallone on:" Multicriteria analysis" + Examples+ Discussion	Presentation of the sustainability management at a political level.	Syvlie Avallone + *K.Lambert-Cordillac (facil.)*	*2 (14:00-16:00)*

Tuesday Activity (26/04/2022)	**Content**	**Teachers**	**timetable**
Lecture by Eduardo Aguilera on : "LCA"	Application of LCA	*Eduardo Aguilera*	*3 (10:00-13:00)*
Lecture by Neang **Malyne on: "Research protocol on ecosystem services concept"**	How to design a protocol in ecosystem services concept	*Neang Malyne*	*3 (14:00-17:00)*

Wednesday Activity (27/04/2022) day off (UU bank)	**Content**	**teachers**	**timetable**

Thursday Activity (28/04/2022)	**Content**		**No teaching**
Team preparation for the Debate on : Is vegan the most sustainable diet recommendation?	**Self-study**: *prepare arguments "for" and "against" for the next day.*	*Self-organized*	

Friday Activity (29/04/2022)	**Content**	**teachers**	**timetable**
Lecture + discussion by Chotte Jean-Luc on : "**Assessing soil**"	Assessment of soil dimension	*Chotte Jean-Luc + K. Lambert-Cordillac (facil.)*	*2,5 (10:00-12:30)*
Debate on Is vegan the most sustainable diet recommendation?	A debate will be performed in each HC.	*Floris van den berg + K. Lambert-Cordillac (facil.)*	*3 14:00-17:00*

Module 2 detailed description and timetable: Fifth Week

Week 11: Mobility week in Montpellier.

During this week, the student will be face to different aspect of sustainability (economic partner, associative initiative, local food system and global food system).

Monday Activity (2/05/2022)	**Content**	**teachers**	**timetable**
Welcome and introduction of the upcoming activities	Guiding questions for the week to think about while visiting the initiatives	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*3 (10:00-12:00)*
Visit of M.I.N : International market	How the M.I.N takes part in the sustainability system of Montpellier food provisioning.	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*2 (13:30-15:30)*

Tuesday Activity (3/05/2022)	**Content**	**Teachers**	**timetable**
Marché des arceaux	Example of local food system Sustainability assessment	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*3 (10:00-13:00)*
La cagette	Local sustainable initiative	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*1 (*14:00 - 15:00
Compost parc Clémenceau	Local sustainable	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*1 15:30-16:30*
PAVE - jardin partagé parc clemenceau	Local sustainable	*Julia Tschersich + Viktor* .mihucz +	*0.5 16:30-17:00*

		K.Lambert-Cordillac (facil.)	
Wrap-up		*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*0.5 17:00-17:30*

Readings & links of the day:

Wednesday Activity (04/05/2022)	**Content**	**teachers**	**timetable**
Mid-week feedback & Module 1 feedback with Viktor	How does this initiative differs ? Connection with sustainability?	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	9:00-11:00
Workshop & lunch table des Poètes	How decrease waste in restaurant	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	1 11:30-12:30
Lunch break @table des poètes	Application of waste decrease in restaurant	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	12:30-15:30
World Café		*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	17:00-19:00

Thursday Activity (05/05/2022)	**Content**	**Teaching**	**Timetable**

Visit of an eco-pasture		*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*2 9:00-11:00*
Visit of honey house	How honey house is sustainable ?	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*1 11:00-12:00*
Visit of a winery @St Gély du Fesc SCEA Domaine de Coulondres	How winery is sustainable ?	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*14:00-16:00*

Friday Activity (06/05/2022)	**Content**	**teachers**	**timetable**
Wrap-up	Conclusion of the week	*Julia Tschersich + Viktor* .mihucz + *K.Lambert-Cordillac (facil.)*	*3 (10:00-13:00)*

Module 2 detailed description and timetable: Sixth Week

Reading & link for the week:

Pathways to Sustainable Land-Use and Food Systems. 2020 Report of the FABLE Consortium. **www.foodandlandusecoalition.org/fable.**

Environmental and agricultural impacts of dietary shifts at global and national scales. 2021. FABLE Policy Brief. www.foodandlandusecoalition.org/fable.

https://bleu-blanc-coeur.org

https://futuragaia.com/

Monday Activity (09/05/2022)	**Content**	**teachers**	**timetable**
Tutorial .: Mme Potier/ Vaissaire : "How supermarkets have evolved to sustainable business an exemple to follow" (Stakeholder system U)	Sustainability in supermarket	Mme Potier/ Vaissaire *+K.Lambert-Cordillac (facil.)*	*3 (10:00-13:00)*
Lecture by Aline Mosnier on : "Environmental and agricultural impacts of dietary shilfs at global and national scales" + Discussion	Assessment of sustainability at different scales	Aline Mosnier + *K.Lambert-Cordillac (facil.)*	*3 (14:00-17:00)*

Readings & links of the day:

Tuesday Activity (10/05/2022)	**Content**	**No Teachers**	**Self-organization**
Teams work/Individual work: Reflexion on a multi criteria for your challenge	Finalization of the methodology assessment		

Readings & links of the day:

Wednesday Activity (11/05/2022)	**Content**	**teachers**	**timetable**
Lecture by Patrick Caron on: " sustainability of food system"	Part 1 of the conclusion on the methodology assessment of food system	P. Caron + K.Lambert-Cordillac (facil.)	*1 (10:00-11:00)*
Tutorial by Vincent Truffault on: "New farmer and new way of production" Stakeholders (Futura gaia)	New way of production for sustainability	Vincent Truffault + *K.Lambert-Cordillac (facil.)*	*2 (11:00-13:00)*
Wrap-up	Part 2 of the conclusion on the methodology assessment of food system	*K.Lambert-Cordillac (facil.)*	*3 (14:00-17:00)*

Thursday Activity (12/05/2022)	**Content**		**No teaching**
Team preparation for the oral presentation of the challenge including methodological section	**Self-study**: Poster preparation	*Self-organized*	

Friday Activity (13/05/2022)	**Content**	**teachers**	**timetable**
Food symposium with student presentation		*Julia Tschersich + Viktor* .mihucz + Enrique trello+ *K.Lambert-Cordillac (facil.)*	*3 (10:00-13:00)*

Assessment table

Assessor (name): Karen Lambert-Cordillac

General observation:

1 Check-list [M2]
2 Podcast's script [M2]
3a Podcast about methodology [M2]
3b Podcast about methodology [M2]
4 Individual essay on methodology [M2]
5 Project written essay - chapter 2 method [M2]
6 Personal reflection on phase 1 [M2]

N°.	student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	7 April 2022, 22:30 CET	Evaluation grid	Each team send an evaluation grid the video realization	Teacher : K. Lambert-Cordillac	MLO 11.1→ PLO 2 MLO 11.2→ PLO 3,4,5 MLO 11.3→ PLO 1, 2,5

2	29 April 2022, 23:00 - 24:00 CET	Video's script + PPT	The script of the video of the team presenting the indicators/criteria for different dimension of their challenge	Teacher	MLO 11.1→ PLO 2 MLO 11.2→ PLO 3,4,5 MLO 11.3→ PLO 1, 2,5
3a&b	29 April 2022, 23:00 – 24:00 CET	Video about methodology	The 10 min video presents the indicators/criteria for different dimension of the team challenge	Teacher (3a) & peer assessment (3b)	MLO 11.1→ PLO 2 MLO 11.2→ PLO 3,4,5 MLO 11.3→ PLO 1, 2,5
4	13 May 2022, 23:00 – 24:00 CET	Individual report on methodology	Each student will develop a report on one dimension with a focus on indicators/criteria need for the assessment	Teacher	MLO 11.1→ PLO 2 MLO 11.2→ PLO 3,4,5 MLO 11.3→ PLO 1, 2,5 MLO 11.5→ PLO 2,4
5	13 May 2022, 23:00 – 24:00 CET	Project written essay - chapter 2 method	Each team will develop a report on different dimension with a focus on indicators/criteria need for the assessment.	Teacher	MLO 11.1→ PLO 2 MLO 11.2→ PLO 3,4,5 MLO 11.3→ PLO 1, 2,5 MLO 11.4→ PLO 1, 2,5 MLO 11.5→ PLO 2,4 MLO 11.6→ PLO 2, 6
6	12 May 2022, 23:00-24:00	Team reflexion synthesis	During the food symposium, each team will present the synthesis of module 1 and module 2 with 15 minutes oral presentation with a power point structured as a research article. This presentation is the oral version of the team written essay.	Teacher	PLO7

Inclusiveness

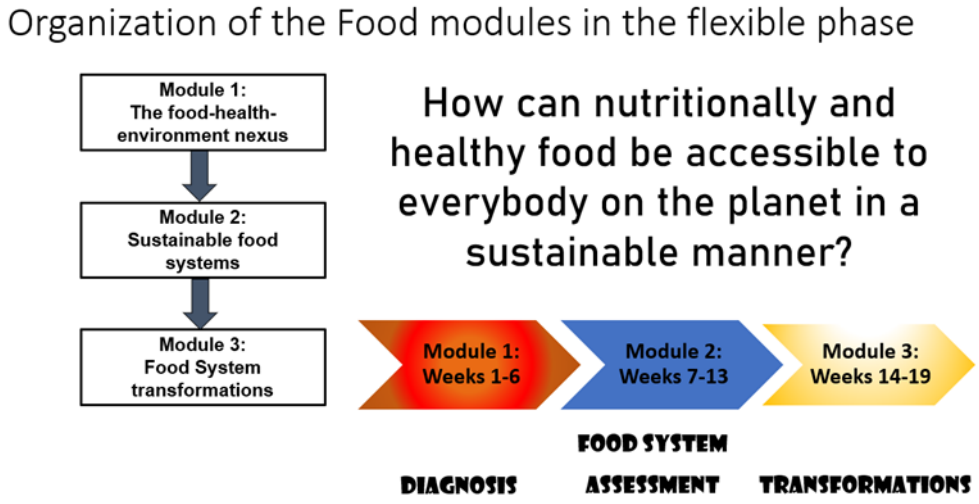
Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Student Module 3 Descriptors: Agri-Food System Transformation
FOOD THEME of the FLEXIBLE PHASE

Preamble: General information valid for all three Food modules

The Food theme builds on the knowledge gained in Phase 1, in particularly building on the theories of systems thinking, complex models and transdisciplinary research. Student will use this knowledge and apply it to the challenges they will be working on and step-by-step guides and resources from Phase 1 will be used as tools to support the challenges.

The organization of the three food modules as well as the link between them are illustrated in the picture below.



FOOD Theme will run under a transversal challenge within the three modules tackling subsequently: 1) identification/diagnosis (Module 1), 2) evaluation/assessment (Module 2), and transformation/intervention (Module 3) of food production system.

Students have chosen their own challenges within five 5 macro-challenges

Macro-challenges	*ACRONYM: Challenge groups*	*students*
1. Consumption of products of animal origin and sustainable development (including animal welfare, environmental, health issues, etc.)	WESTFOODES: How to reconcile "culture" - in food consumption - with sustainable agricultural practices (the status meat consumption holds in our society - with its gendered implications)	1. Dominik Kulczynski (ELTE), 2. Sara Lang (UM), 3. Emmet Lowry (ELTE), 4. David O'Connor (UB), 5. Sealia Thevenau (UM)
	SEAF: How to protect European waters from overfishing?	1. Pien Barnas (UB) 2. Alessandro Bonito (UU) 3. Beau Munnick (UU) 4. Meghan O'Brien (ELTE) 5. Elise Vens (ELTE)

3. Local and short supply chains and sustainable development	ReFARM: The role of agroforestry in increasing soil health/the challenge of implementation	1. Linda Bovo (ELTE) 2. Isa Maathuis (UB) 3. Vania Roseluna (UB) 4. Scarlett Sheriff (UB) 5. Migle Labeykite (UU)
4. Deforestation, food systems and environmental issues (including loss of biodiversity, climate change)	PROCIRCULAR: How can we make nature thrive through a circular agricultural production?	1. Shrijeeta Purkait (UB), 2. Emily O'Sullivan (UB), 3. Ilona Tóbiás (UU), 4. Rosanne Wahl (UB)
	GRAFS: Great Green Wall	1. Jill Hoost (UB) 2. Lisa Kranz (UB) 3. Diana Laborda Jou (UM) 4. Lena Sauer (UB) 5. Célia Valls Rodriquez (ELTE)
5. Food-related health problems (e.g., malnutrition, obesity).	E.A.T. - European Algae Transition: Food resources/innovation (algae & seaweed as potential alternative)	1. Nathan Gaborieau (ELTE), 2. Liam Maguire (UU), 3. Tessa Nauta (UB),
	FEAST: How to ensure accessibility of healthy & sustainable food?	1. Judith Albert (UU) 2. Eline van Ballegooij (UU) 3. Madalena Bravo (ELTE) 4. Freeke Jansen (UM) 5. Alba Redón (UU)

Assessment: for each module, a final personal reflection about the challenge compiled by the students will be assessed.

	**Expected outcome: During week 19, Student-led Final Food Theme one-day symposium preferably in Aula Magna of each university with the participation of Food KCT member, guest teacher, external stakeholders' jure and peer-review action taking into account there are two groups working in the same challenge**

Miscellaneous:

1. The MS Teams will only be used to run the learning activities in hybrid mode (setting up of different channels for each group).
2. Module contents to be upload to Moodle; There will be only one Moodle course.
3. All assessment will be organized in Scorion environment.
4. Field Trips of Module 3: There will 4 field trips different in each university, the third of them self-organised by the students; to elaborate and present each field trip learnings to the other universities in sharing sessions, students will create groups of 2-4 people in each university.

Module details

Module title: 03. Agri-food System Transformation

Module coordinator: name: Enric Tello

Teachers	e-mail: tello@ub.edu institution: University of Barcelona, Barcelona (Spain) Abbreviations for institutions: Eötvös Loránd University (ELTE), Trinity College (TCD), University of Barcelona (UB), University of Montpellier (UM), University of Utrecht (UU)

Members of food Knowledge Creation team (KCT) or Expanded Network of CHARMEU or of one of the 5 universities for the Academic year of 2021/2022

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Extra-academic actors for the Academic year of 2021/2022

Name (country acronym)	Institution	Observation
Alvarez, Isis, Senior Gender Advisor (CO)	Global Forest Coalition (NGO)	isis.alvarez@globalforestcoalition.org
Dankelman, Irene (NL), senior adviser	IRDANA Advice (NGO, Malden) & member of Board of Trustees of WECF	irene.dankelman@hetnet.nl
Fresán, Ujué (ES)	Instituto de Salud Global, Barcelona (NGO)	ujuefresan@gmail.com
Keck, Nicolas (FR) Elziere, Panayota	Laboratoire Départemental vétérinaire de l'Hérault	nkeck@herault.fr panayota.elziere@herault.gouv.fr

Extra-academic actors not belonging to CHARM-EU for the Academic year of 2021/2022

Name (country acronym)	Institution	Observation
Józwiak, Ákos (HU)	Digital Food Chain Education, Research, Development and Innovation Institute at the University of Veterinary Medicine in Budapest and advisory board member of the European Food Safety Authority (EFSA).	Jozwiak.Akos@univet.hu
Lente, Gábor (HU)	University of Pécs, but also vice president of CLUB OF HUNGARIAN SCIENCE JOURNALISTS – special approval needed	lenteg@gamma.ttk.pte.hu
Maciel, Carolina (BRA)	Human Society International (NGO, BR)	wur.carolina@yahoo.com ; cmaciel@law.harvard.edu
Roets, Jaco (ZA)	AccountabilityLab	roets80jaco@gmail.com

Module 3 design and content

Module high-level learning aims: After having studied the diagnosis and indicators, module 3 is focused on explore feasible transformative solutions for more sustainable Agri-food Systems (AGFS) with a triple entryway: Agroecology Transition (mainly addressed from the producer side, but not only); Food System change (mainly addressed from the consumer & citizen sides, but not only); and agency (multi-actor approach to food governance & justice, including public policy but not only). Three basic research questions will be addressed: 1) What to do? Which AGFS transformations; 2) With whom? Who is involved and with which roles; and 3) How to do it? What a just AGFS transition means.

After this module, students will be able to:

1. Understand that the main AGFS transformations required to comply with the SDGs are multidimensional (i.e., environmental, social, economic, political and cultural), multi-scalar (local, national, regional, and global), and multi-actor (all the stakeholders involved in the different of links of agri-food chains from primary production to end consumption, as well as nutrients recovery from waste flows to return them to the soil).
2. Find out feasible and desirable future scenarios for AGFS sustainability, identifying levers of change, barriers, trade-offs, and possible synergies to activate, remove, address, or take advantage of them.
3. Consider the systemic character of the agri-food changes required to attain the SDGs, and the multiple nexuses food involves among dimensions (environmental and societal health, social and ecological, economic, political, and cultural), avoiding the recipes of 'one-size-fits-all' approach by clearly distinguishing between principles (e.g., the 13 elements of Agroecology) and the innovative, participatory process to discover of site-specific solutions suitable to each local and regional natural resource endowment, social and economic context, and cultural heritages.
4. Be able to propose future research plans to address specific case studies of AGFS transformations, taking into consideration all the conceptual and methodological learnings of the three food modules.

Module 3 is organized by thematic weeks, addressing each week a specific subject (intermingled with the four field trips):

i) Agroecology transition and food system change

ii) Food governance
iii) Food policy
iv) The role of civil society
v) The role of private sector
vi) Facing systemic transitions: An uncertain future

Connection with other phases and modules: *see* Preamble

Module 3 Learning Outcomes:

- MLO 12.1: Describe the need for cross-sectoral sustainability considerations and integrated approaches to food system policies and practices, building on knowledge about different food nexus and food systems. [PLO 1, 2, 3]
- MLO 12.2: From an inter- and transdisciplinary perspective, critically appraise the governance systems that seek to promote socially just and sustainable food systems and address food sustainability and security at local, national and international levels [PLO 1, 2]
- MLO 12.3: Identify pathways, policies and actions to mitigate global and systemic planetary crises through socially just and sustainable food system transformations. [PLO 1, 2, 3]
- MLO 12.4: Appraise and apply models and methods to (re)design policies and actions that advance robust, sustainable and socially just food systems in collaboration with different academic and extra-academic actors. [PLO 6]
- MLO 12.5: Investigate, evaluate and design interventions for sustainable food systems in a transdisciplinary manner while taking account of the views and impacts on different dimensions of sustainability. [PLO 1, 2, 3]
- MLO 12.6: Evaluate different solutions to sustainability challenges related to food production and consumption, including social movements, policies, market mechanisms and business innovations. [PLO 1, 2, 5]
- MLO 12.7: Evaluate the role of innovation (the future of) sustainable, healthy, secure and socially just food systems, taking into account the societal, economic and environmental implications thereof. [PLO 1, 3]
- MLO 12.8: Communicate about policies and actions to address food-related sustainability challenges, including the appraisal and design of educational programmes that support sustainable and healthy food production and consumption. [PLO 6]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Teacher-led activities	Place: Hybrid classroom (HC) at 4 CHARMEU partner universities
Lectures	Lectures focused on key aspects of the thematic subject of the week
Tutorized reading sessions	Focused on some aspects of the thematic subject of the week, they are addressed to help draw and advance conceptual maps of AGFS transformation applied either to general or specific challenges

Panel discussions	Academic and non-academic actors will present specific experiences of AGFS change, and answer students' questions
Field trips	**Place: different location in or nearby each city**
Direct observation of specific case studies of AGFS change or lock-in situations	Each city/university will organize 3 different field trips related to the thematic subject of the week they are planned: **General subject of field trip 1**: Food governance **General subject of field trip 2:** Food policy **General subject of field trip 3:** The role of civil society (self-organized) **General subject of field trip 4:** The role of private sector One field trip on Social & Environmental Mapping of Urban Food Markets will be self-organized by the students at each university
Student-led activities	**2-3 students at each university prepare and present the learnings of each field trip to the next sharing session with the other universities**
Student-led activities	**Sharing Field Trips sessions of 4 CHARMEU partner universities HCs**
	Beyond multiplying the learning outcomes, they aim at developing: i) communication skills at personal and team level ii) capacity of observation, comparative analysis, and critical thinking iii) capacity to rise research questions and plan experimental designs iv) scholarship skills to frame case studies in broad scientific literature
Student-led activities	**Concept mapping**: to register advances in both **general** (individually) and **specific for each challenge group** (teamwork)
Class discussion & brainstorming	Based on received inputs (from lecturers, readings, or panel discussions), to develop capacities of synthesising ideas & experiences

A detailed example for the proposed learning activities can be seen in Annex 1.

Study materials

These materials will be shared in the Virtual Learning Environment:

- mandatory and optional scientific literature (articles, reports, books)
- links to relevant websites
- stakeholders interviewed in field trips

Module 3 detailed description and timetable: First Week

[all assessment activities are marked in blue]

W13 Sustainable and just transformations: Agroecology Transition and Food System Change (16-20/05/2022)

Monday Activity (16/05/2022)	**Content**	**teachers**	**timetable**
Introduction to module 3: Basic information on the **5 weekly subjects and 4 field trips scheduled**, reading materials, **and assessment** through collective presentations to the sharing field trip sessions, plus individual reflections on the e-portfolio. *All this must be linked to the chosen personal/group food challenge* and help advance the final collective reports of each group.	**Methodological presentation** on how it contributes to a deeper understanding of the main student-based challenges: *Address with a system nexus and multi-actor approach the transformations of the agri-food system from a sustainability science perspective capable of dealing with multiple dimensions and scales.*	*Module Coordinator **Enric Tello***	*1,5 (10:00-11:30)*
Lecture on the Agroecosystems and Agroecology Transitions	***What***: The 13 AE principles, the 5 five stages of AET, their multiple dimensions and indicators to monitor them	***Enric Tello***	*1,5 (11:30-13:00)*
Individual reading of Johan Rockström et al. (2020). Planet-proofing the global food system. *Nature Food*, (3 pages, 10') + **watching to the Kate Raworth's short lecture** (6.30') presenting her Doughnut Economics proposal (https://youtu.be/Ziw-wK03TSw), followed by a **debate** on *What does sustainable and just transformation of the Agri-food System (AGFS) mean?* using the video lecture by **Ana Moragues-Faus** on the different meanings of 'just' referred to AGFS transformation (60').	**Big question to be answered**: *What does sustainable and just transformation of the Agri-food System (AGFS) mean?* Introducing the planetary boundaries approach to AGFS, and the 'doughnut' just and safe space for all + **video lecture by Ana Moragues-Faus on the different meanings and dimensions of a 'just' AGFS transition** *(To what? By whom? How?)*	***Enric Tello*** *(+ Ana Moragues-Faus video or online)*	*1,5 (14:00-15:30)*
Individual self-study to prepare preliminary concept maps of AGFS transformation (in general)	*Tool on conceptual mapping: https://vue.tufts.edu/* + infographics, etc.	*Enric Tello (facil.)*	*30' (15:30-16:00) Enric Tello facilitator)*
Lecture by Itziar de Lecuona as a CHARM Cross-activity			*16:00-17:30*

Readings & links of the day:

Rockström, J., Edenhofer, O., Gaertner, J. et al. (2020). Planet-proofing the global food system. *Nature Food*, 1, 3-5 (2020). https://doi.org/10.1038/s43016-019-0010-4 (open access at: https://cgspace.cgiar.org/bitstream/handle/10568/106652/Planet_Rockstrom_2020.pdf?sequence=1&isAllowed=y).

Raworth, K. video lecture on Doughnut Economics: Creating a safe and just space for Humanity (https://www.youtube.com/watch?v=CqJL-cM8gb4), 17'

Climate Change mitigation through Agroecology by the "4 per 1000" Initiative: https://www.4p1000.org/

FAO Sustainability Assessment of SAFA: https://www.fao.org/documents/card/es/c/b82b9fdc-7f0a-52ed-9ab1-e375d70f8f99/

Weigelt, J. et al. (2020). Systemic Challenges, Systemic Responses: Innovating Adaptation to Climate Change through Agroecology. *TMG Working Paper*. https://www.researchgate.net/publication/346962982_Systemic_Challenges_Systemic_Responses_Innovating_Adaptation_to_Climate_Change_through_Agroecology

On the meaning and assessment of sustainmable & just transformation of agri-food systems:

Agyeman, J., Evans, T. (2003). Toward just sustainability in urban communities: Building equity rights with sustainable solutions. *The Annals of the American Academy of Political and Social Science*, 590(1), 35-53. https://doi.org/10.1177%2F0002716203256565

Cadieux, K. V., Rachel Slocum. R. (2015). What does it mean to do food justice? *Journal of Political Ecology*, 22, 1. https://digitalcommons.hamline.edu/cgi/viewcontent.cgi?article=1000&context=cla_faculty

Canfield, M. C., Duncan, J., Claeys, P. (2021). Reconfiguring Food Systems Governance: The UNFSS and the Battle Over Authority and Legitimacy. *Development*, 64, 181–191. https://doi.org/10.1057/s41301-021-00312-1

FAO (2014). Sustainability Assessment of Food and Agriculture systems Guidelines (SAFA version 3.0). Rome: FAO. https://www.fao.org/family-farming/detail/en/c/284657/

Fischer, J., Abson, D. J., Bergsten, A., French-Collier, N., Dorresteijn, I., Hanspach, J., Hylander, K., Schultner, J., Senbeta, F. (2017). Reframing the Food–Biodiversity Challenge. *Trends in Ecology & Evolution*, 32(5), 335-345. http://dx.doi.org/10.1016/j.tree.2017.02.009

Hebinck, A., Zurek, M., Achterbosch, T., Forkman, B., Kuijsten, A., Kuiper, M., Nørrung, B., van't Veer, P., Leip, A. (2021). A Sustainability Compass for policy navigation to sustainable food systems. *Global Food Security*, 29, 100546. https://doi.org/10.1016/j.gfs.2021.100546

Lamine, C., Darnhofer, I., Marsden, T. K. (2019). What enables just sustainability transitions in agrifood systems? An exploration of conceptual approaches using international comparative case studies. *Journal of Rural Studies*, 68, 144-146. https://doi.org/10.1016/j.jrurstud.2019.03.010

Moragues-Faus, A. (2020). Towards a critical governance framework: Unveiling the political and justice dimensions of urban food partnerships. *The Geographical Journal*, 186:73–86. https://doi.org/10.1111/geoj.12325

Oteros-Rozas, E., Ruiz-Almeida, A., Aguado, M., González, J. A., Rivera-Ferre, M. G. (2019). A social-ecological analysis of the global agrifood system. *Proceedings of the National Academy of Sciences of the United States of America*, 116(52), 26465-26473. https://doi.org/10.1073/pnas.1912710116

Rivera-Ferre, M. G. (2020). From agriculture to food systems in the IPCC. *Global Change Biology*, 26, 2731–2733. https://doi.org/10.1111/gcb.15022

Tschersich, J., Kokb, P.W. (2022.). Deepening democracy for the governance toward just transitions in agri-food systems. *Environmental Innovation and Societal Transitions*, 43, 358-374. https://doi.org/10.1016/j.eist.2022.04.012

Tuesday Activity (17/05/2022)	**Content**		**No teaching**
Team/individual reading work: a) Working with the Agroecology (AE) and Agroecology Transition (AET) readings of the day	**Self-study**: *summarizing AE & AET concepts and preparing questions for the next day*	*Self-organized*	
Team/individual assimilating work: b) developing the general concept maps of AGFS transformation from the AE and AET view	**Self-study**: *incorporating AE & AET to concept maps of AGFS transformation*	*Self-organized*	
Exceptionally, due to schedule problems, The **Budapest ELTE students** will carry out their **Field Trip 1** to visit the **Magosvölgy ecological farm** explained by Zoltán Dezsény	**MagosVölgy** („Valley of Seeds") is a community farm started in 2016 to create a vegetable community economy	*Teamwork of ELTE students*	Viktor Mihucz (ELTE)

For the preparation of the advanced field trip 1 in Budapest:

MagosVölgy Ecological Farm – a startup agroecology initiative posted as example by FAO: https://www.fao.org/family-farming/detail/en/c/469334/

Presentation of Zoltán Dezsény of his Magos Völgy Ecological Farm: https://www.slideshare.net/ExternalEvents/magosvlgy-ecological-farm-71419466

Hungarian website of Magosvölgy ecological farm: https://tudatosvasarlo.hu/magosvolgy-zoldsegkozosseg-kuzdelmes-de-szeretjuk/

Readings & links of the day:

Gliessman, S. (2016) Transforming food systems with agroecology. *Agroecology and Sustainable Food Systems*, 40(3), 187-189. https://doi.org/10.1080/21683565.2015.1130765.

Summary, Introduction and Chapters 1 and 2 of HLPE (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report of The High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. FAO: Rome (68 out of 162 p.). http://www.fao.org/3/ca5602en/ca5602en.pdf

Wezel, A., Herren, B. G., Kerr, R. B., Barrios, E., Rodrigues-Gonçalves, A. L., Sinclair, F. (2020). Agroecological principles and elements and their implications for transitioning to sustainable food systems. A review. *Agronomy for Sustainable Development*, 40, 40. https://doi.org/10.1007/s13593-020-00646-z

Agroecology Europe website: https://www.agroecology-europe.org/our-approach/our-understanding-of-agroecology/

Agroecology Europe (2021). Integrating agroecology into European agricultural policies. Position paper and recommendations to the European Commission on Eco-schemes. https://www.researchgate.net/publication/351811977

FAO's Agroecology Knowledge Hub: https://www.fao.org/agroecology/home/en/

Declaration of The EU's Assembly of Regional and Local Representatives on Agroecology Transition: https://cor.europa.eu/EN/our-work/Pages/OpinionTimeline.aspx?opId=CDR-3137-2020

Wednesday Activity (18/05/2022)	**Content**	**teachers**	**timetable**
Team challenge groups work: c) incorporating the new AE & AET concepts to the specific concept maps of challenge groups (1 hour) + **Sharing and commenting the results of the test** on basic AE and AET concepts	**Self-organized teamwork** by the challenge groups to incorporate AE & AET to specific concept maps	*Enric Tello (facil.)*	*1,5 (10:00-11:30)*
Lecture by Patrick Caron on Science-policy dialogue at the Committee on World Food Security (CFS): *The example of the current elaboration of Voluntary Guidelines on Food Systems and Nutritio*n (VGFSyN)	**Basic concepts and tools of AGFS system transformation from a global science-policy interface** (multidimensional and multi-scalar system approach, diversity of situations and paths, multi-actor co-creation & governance)	***Patrick Caron*** *(+ Enric Tello facil.)*	*1,5 (11:30-13:00)*
Lecture on Women role & Empowerment in Food Systems	***Who & How***: women empowerment in agroecology processes of co-creation of knowledge and participatory action research	***Marina Di Masso*** *(UVIC), Enric Tello (facil.)*	*1,5 (14:00-15:30)*
Preparation by groups of 4 students of short presentations of concept maps of 3 minutes each (30') + **Self-conducted debate in the hybrid classroom** on how to introduce AET in general concept maps on AGFS transformation to more sustainable scenarios (60')	**Summarize the learnings of the day trough concept maps** on how to integrate AET in general concept maps of AGFS transformation	*Debate (focused on sharing new drafts of general concept maps)*	*1,5 (15:30-17:00) (Enric Tello facilitator)*

Readings & links of the day (the same as of Tuesday plus):

Ruiz-Almeida, A., Rivera-Ferre, M. G. (2019). Internationally-based indicators to measure Agri-food systems sustainability using food sovereignty as a conceptual framework. *Food Security*, 11:1321–1337. https://doi.org/10.1007/s12571-019-00964-5

Rivera-Ferre, M. G. (2018): The resignification process of Agroecology: Competing narratives from governments, civil society and intergovernmental organizations. *Agroecology and Sustainable Food Systems*, 42(6), 666-685. https://doi.org/10.1080/21683565.2018.1437498

Rivera-Ferre, M. G. (2021). Sustainable food systems and gender equality in the context of climate change and biodiversity conservation. *Working Paper of the UN Women Expert Group Meeting EGM/ENV/EP.19*. On-line available at: https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/CSW/66/EGM/Expert%20Papers/Marta%20RIVERA_CSW66%20Expert%20Paper.pdf

Thursday Activity (19/05/2022)	**Content**		**No teaching**
Team/individual reading work: a) Working with the Agroecology (AE) and Agroecology Transition (AET) readings of the day	**Self-study**: *summarize AE & AET concepts and prepare questions for the next day*		
Team/individual assimilating work: b) developing the general concept maps of AGFS change from the AE and AET standpoint	**Self-study**: *incorporate AE & AET to general concept maps*	*Self-organized*	
Team/sharing work by challenge groups**:** c) incorporate AE and AET concepts to the *specific* concept maps of the challenge to be sent to the other group of the same challenge for the next day	**Self-organized online teamwork** by challenge groups to incorporate AET to each *specific* concept maps	*Self-organized challenge groups*	

Readings & links of the day:

FAO (2019). *TAPE Tool for Agroecology Performance Evaluation. Process of Development and Guidelines for Application. Test version*. Rome: FAO (87 p.) http://www.fao.org/3/ca7407en/CA7407EN.pdf

Chapters 3 and 4, and Conclusions of HLPE (2019). *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report of The High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. FAO: Rome (47 out of 162 p.). http://www.fao.org/3/ca5602en/ca5602en.pdf

Friday Activity (20/05/2022)	**Content**	**teachers**	**timetable**
Each challenge group discuss and assess the specific concept map adjusted to the challenge received (45'), to then give to the other group their assessment, criticism and proposals (20' by each group)	**Debate between** challenge groups on controversial issues and institutional designs for AET *specific* to each challenge	*Enric Tello (facil.)*	*1,5 (10:00-11:30)*
Individual reading of Caron, P., Ferrero y de Loma-Osorio, G., Nabarro, D. et al. (2018). Food systems for sustainable development: proposals for a profound four-part transformation. *Agronomy for Sustainable Development*, 38, 41. https://doi.org/10.1007/s13593-018-0519-1)	**Big question to be answered**: *fitting in the concept maps the four enabling stages of the transformation AET process towards sustainable and just AGFS (according to Caron et al., 2018).*	*(students alone)*	*1,5 (11:30-13:00)*

Lecture: *The Vision, Objectives and Prospects of the European Agroecology Partnership between Living Labs, Research Infrastructures and Stakeholders launched by the EC*	**Lecture**: *present the forthcoming research proposals of the European Commission (EC) to put in motion AETs in Europe*	***Susana Gaona** (EC, AE-SCAR) + Enric Tello (facil.)*	*1,5 (14:00-15:30)*
Individual reading of CFS, *Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems that Enhance Food Security and Nutrition: Policy Recommendations* (FAO, 2021, 14 p., 30') + **final brainstorming debate of the week** + Wrap Up of the week & instructions or information for the next	**Summarize the concepts of the week with general concept maps** on how to transform the current unsustainable agri-food system towards more sustainable & just scenarios	*Debate (focused on sharing first drafts of basic concept maps)*	*1,5 (15:30-16:00) Enric Tello (facil.)*
Lecture by Itziar de Lecuona as a CHARM Cross-activity			*16:00-17:30*
Individual assessment: each student sends her/his current version of the **general concept map of AGFS change** to receive improvement feedback + including it in the individual e-portfolio with her/his reflections of the first week			

Readings & links of the day:

Caron, P., Ferrero y de Loma-Osorio, G., Nabarro, D. et al. (2018). Food systems for sustainable development: proposals for a profound four-part transformation. *Agronomy for Sustainable Development*, 38, 41. https://doi.org/10.1007/s13593-018-0519-1 (Open Access).

CFS (2021) *Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems that Enhance Food Security and Nutrition: Policy Recommendations*. Rome: FAO. https://www.fao.org/agroecology/database/detail/en/c/1402652/.

Duncan, J., Rivera-Ferre, M., Claeys, P. (2020). The importance of Food Sovereignty for the Farm to Fork strategy and the New Green Deal. Insights and limits of the SAM and SAPEA reports. *Academic Brief*. https://edepot.wur.nl/524951

European Commission. *Farm to Fork Strategy for a fair, healthy and environmentally-friendly food System*: https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

Riccaboni, A., Neri, E., Trovarelli, F., Pulselli, L. M. (2012). Sustainability-oriented research and innovation in 'farm to fork' value chains. *Current Opinion in Food Science*, 34, 102–112. https://doi.org/10.1016/j.cofs.2021.04.006

Sonnino, R., Callenius, C., Lähteenmäki, L., Breda, J., Cahill, J., Caron, P., Damianova, Z., Gurinovic, M. A., Lang, T., Laperriere, A., Mango, C., Ryder, J. Verburg G., Achterbosch, T., den Boer, A.C.L., Kok, K.P.W., Regeer, B.J., Broerse, J. E. W., Cesuroglu, T., Gill, M. (2020). *Research and Innovation Supporting the Farm to fork Strategy of the European Commission*. Published by FIT4FOOD2030. https://doi.org/10.13140/RG.2.2.10891.23840

Schebesta, H., Candel, J.J.L. (2020). Game-changing potential of the EU's Farm to Fork Strategy. *Nature Food*, 1, 586–588. https://doi.org/10.1038/s43016-020-00166-9

Module 3 detailed description and timetable: Second Week

W14 Agri-food system transformations and Governance (23-25/05/2022; 26-27/05/2022 holydays)

Monday Activity (23/05/2022)	**Content**	**teachers**	**timetable**
Lecture by Jessica Duncan (Associate Professor, Rural Sociology Wageningen University) on Food Governance	**Basic concepts of Food Governance:** *Who rules the global, meso and local agri-food chains? Types of governance*	***Jessica Duncan +*** *Enric Tello (facil.)*	*1,5 (10:00-11:30)*
Individual reading of Foreword, Summary and Recommendations, Introduction, Chapter 1, Chapter 6, and Conclusion of the HLPE Report 12 on Nutrition and Food Systems (2017), 46 pages, + preparing questions for debate	**Big question to be answered**: *How many links are there in the globalized agri-food chains? What actors participate in them? What power imbalances and conflicts of interest exist?*	*(students alone)*	*1,5 (11:30-13:00)*
Debate in the hybrid classroom. Challenge: A brainstorming debate **on concept maps to understand the current agri-food chains, the actors participating in each link, and their roles for an AGFS transformation towards sustainability**	**Summarize the learnings of the day trough concept maps** on how to transform the current unsustainable agri-food system towards more sustainable & just scenarios	*Debate (focused on sharing views and concept maps) Enric Tello (facil.)*	*1,5 (14:00-15:30)*
Individual self-preparation of Field trip 1. Consult the webpages, maps and other information contained in the field trip 1 preparation package	**Prepare issues and questions to be raised in field trip 1**, considering the readings, debates, concepts, and tools used throughout the day	*(students alone)*	*1,5 (15:30-17:00)*

Readings & links of the day:

Alexander, P., Brown, C., Arneth, A., Finnigan, J., Moran, D., Rounsevell, Mark D.A. (2017). Losses, inefficiencies and waste in the global food system. *Agricultural Systems*, 153, 190-200. http://dx.doi.org/10.1016/j.agsy.2017.01.014

Canfield, M. C., Duncan, J., Claeys, P. (2021). Reconfiguring Food Systems Governance: The UNFSS and the Battle Over Authority and Legitimacy. *Development*, 64, 181–191. https://doi.org/10.1057/s41301-021-00312-1

HLPE (2017). *Nutrition and food systems. A report of The High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. FAO: Rome. https://www.fao.org/3/i7846e/i7846e.pdf

FAO on Food Loss & Waste**:** https://www.fao.org/food-loss-and-food-waste/flw-data

Gaitán-Cremaschi, D., Klerkx, L., Duncan, J. et al. (2019). Characterizing diversity of food systems in view of sustainability transitions. A review. *Agronomy for Sustainable Development*, 39: 1. https://doi.org/10.1007/s13593-018-0550-2

European Commission on Food Waste**:** https://ec.europa.eu/food/safety/food-waste_en

Food Waste in the United States of America: https://foodprint.org/issues/the-problem-of-food-waste/

For the preparation of field trip 1 in Barcelona:

Mercabarna: https://www.mercabarna.es/en/

The Biomarket in Mercabarna: https://www.mercabarna.es/sectors-activitat/biomarket/en_index_3/

The Food Bank in Mercabarna to reduce waste delivering unsold food to people in food poverty**:** https://www.mercabarna.es/responsabilitat-social/en_banc-dels-aliments/

The NGO *Espigoladors* ("*Gleaners*") against food waste and poverty: https://espigoladors.cat/en/

The protected Baix Llobregat Agrarian Park in the Barcelona Metropolitan Area: https://parcs.diba.cat/es/web/baixllobregat/

The City Council approach to Food Waste in Barcelona: https://www.barcelona.cat/bcnmetropolis/2007-2017/en/calaixera/reports/la-lluita-contra-el-malbaratament-alimentari/

For the preparation of field trip 1 in Montpellier:

Bassin the Thau, a salt lagoon specialised on shell breeding (mostly oysters): https://www.herault-tourisme.com/fr/decouvrir/nos-incontournables/etang-de-thau/

Recycling of oysters shells through one of the biggest factory of this kind in Europe that valorizes them for chicken feeding, natural fertilizers, artificial coral reefs…): https://www.lemoniteur.fr/article/economie-circulaire-quand-les-dechets-coquilliers-s-y-collent.2143709

Criée de Sète, the fishing port and seafood wholesale market (with the first auction in Europe to be computerized in 1967) attended by professional business (B to B with retailers, restaurants, fish stores, food industry…): http://www.sete.port.fr/fr/peche/la-criee

Pays de Thau: The vineyards of many wineries predominate in the land surrounding the lagoon (https://www.thau-mediterranee.com/terroir-vins-muscats-degustations-thau.html) together with fruit gardening, goat cheese production, olive oil production, apiculture and other agricultural activities a large

number of them organic, creating a beautiful landscape mosaic that also attracts tourism (an important economic activity of the area): https://us.france.fr/en/occitanie-south-of-france/article/vignobles-decouvertes-pays-thau-0

"*Vinifilles*", an initiative from women winegrowers to jointly promote their production of wines du Languedoc-Roussillon (to which the ones of Pays the Thau belong) on the national and international market through a common platform: https://www.vinifilles.fr/

"*Entre Terre et Mer*" (between land and sea), a common label for a network of local shops that sell all the local productions of the Pays de Thau through a near, short chain from producers to consumers: http://thau-infos.fr/index.php/bons-plans/bonnes-adresses/epicerie/86-publicites/10654-boutique-des-producteurs-entre-terre-et-mer

"*Paniers de Thau*" offers online shortcuts between producers and consumers of local, sustainable agricultural productions through the local NGO "CPIE-BT": https://www.paniersdethau.fr/

"Programme Alimentaire Territorial" (Territorial Food Plan) supported by "*Sète Agglopo*le", which aims to fight against food waste and provide quality food for vulnerable people in the area of this local authority: https://www.agglopole.fr/la-lutte-contre-le-gaspillage-alimentaire/ (there are many PATs like this in the region)

For the preparation of field trip 1 in Utrecht:

"*Tuin Kansrijk*", a Community Supported Agriculture: https://www.tuinkansrijk.nl/

"*Stadsboerderij Griftsteede*", an urban farm: https://www.utrechtnatuurlijk.nl/locaties/griftsteede/

"*Voortuin*", a shared-community urban garden: http://www.devoortuininvoordorp.nl/about/

"Riddertuin", a shared-community urban garden: https://www.facebook.com/groups/Riddertuin/about

Utrecht Regional Food Map: https://www.ruaf.org/regionalfoodmaputrecht/

Tuesday Activity (24/05/2022)	**Content**	**teachers**	**timetable**
Barcelona: visit to **MERCABARNA** wholesale food market + the NGO ***Espigoladors*** (gleaners) against food waste and poverty **Montpelier**: **Bassin the Thau**, a salt lagoon specialised on shell breeding (oysters) surrounded by vineyards (largely organic) **Utrecht**: Holistic view of the surrounding, comparing **urban gardening** and **community supported agriculture** regarding	**To make apparent and understand**: a) the c**urrently globalized food chains**; b) the role of **governance on food provisioning** to cities, metropolis and regions; c) the problem of **food waste** and the role of diiferent actors to reduce and reuse it; and	*Enric Tello (UB)* *Viktor Mihucz (ELTE)* *Roland Thaler (UM)* *Julia Tschersich (UU)*	*9:00-13:00*

their potential to bridge consumer-producer and urban-rural divides in food production [Using the Peek App]	d) the problem of **food poverty** and the role of charities and civil society in addressing it. e) the **territorial synergies** activated by organic and other sustainable best practices in line with the forthcoming EU agroecology transition		
Budapest: As the Field Trip 1 has been advanced to Tuesday 17/06, **ELTE students will perform** the tasks scheduled for that day in the other universities:			
Team/individual reading work: a) Working with the Agroecology (AE) and Agroecology Transition (AET) readings of the day	**Self-study**: *summarizing AE & AET concepts and preparing questions for the next day*	*Self-organized*	*No teaching*
Team/individual assimilating work: b) developing the general concept maps of AGFS transformation from the AE and AET view	**Self-study**: *incorporating AE & AET to concept maps of AGFS transformation*	*Self-organized*	*No teaching*
Separated UB, ELTE, UM, UU Teamwork to prepare Field trip 1 presentations to the **collective sharing session of next Monday** using as tutorial the set of questions and indications of the Peek App field trip + readings and concept maps made so far **(*each university team must choose 2-3 students as presenters to the next sharing session that will rotate and be assessed*)** + Wrap Up of the week & instructions or information for the next	Apply theories of food system governance and change, and AE transition to the information gathered in the field trips, to **elaborate presentations on the governance roles of different actors** with different examples		*14:00-17:00*
Individual filling of the e-portfolio with the reflections of the week			

Readings & links of the day:

The same as on Monday

Wednesday Activity (25/05/2022)	**Content**		**No teaching**
Team/individual reading work: a) Working on the role of multi-actor governance processes in AGFS at the different scales using the readings of the week	**Self-study**: *summarizing lectures, readings, and learnings*	*Self-organized by students in each university*	
Team/individual assimilating work: b) developing general concept maps of AGFS transformation from a governance view	**Self-study**: *incorporating multi-actor governance to concept maps of AGFS transformation*	*Self-organized*	
Team/sharing work by challenge groups**:** c) incorporate governance concepts to the *specific* concept maps of the challenge to be sent to the other group of the same challenge	**Self-organized online teamwork** by challenge groups to incorporate Food Policy to *specific* concept maps sent to the other group	*Self-organized by challenge groups*	

Individual upgrading of concept maps filled in the e-portfolio	**Go deeper in AGFS transformation**, in general		

The same as on Monday

Thursday or Friday (to be decided with UB students)	**Content of this optional visit to the exhibition**		**timetable**
Optional visit to the exhibition *Feeding Barcelona. City, Supply & Health* for the UB Food students only (https://ajuntament.barcelona.cat/museuhistoria/ca/alimentar-barcelona-ciutat-proveiment-i-salut) + to be (optionally) incorporated to the presentation of the sharing session of Field trip 1 next Monday	**To make apparent and understand** the role of public institutions to ensure food provisioning of cities, and create competitive and transparent food markets by reducing **transaction costs** of private buyers and sellers	*Enric Tello*	*2 (to be decided)*

Other references and links of the week:

Blay-Palmer, A., Knezevic, I., Spring, A. (2014). Seeking common ground for food system transformation. *Dialogues in Human Geography*, 4(2), 185-189. https://doi.org/10.1177/2043820614537154.

El Bilali, H. (2019). The multi-level perspective in research on sustainability transitions in agriculture and food systems: A systematic review. *Agriculture*, 9(4), 74. https://doi.org/10.3390/agriculture9040074

FAO (2019). Food Loss and Waste Database. Take an in-depth look at what food is being lost and wasted, and where: http://www.fao.org/food-loss-and-food-waste/flw-data

FAO (2020). *City Region Food Systems Programme: Reinforcing Rural Urban Linkages for Resilient Food Systems*. Rome: ROAF-FAO. https://www.fao.org/3/ca6337en/ca6337en.pdf

FAO Sustainable Food Value Chains Knowledge Platform website: https://www.fao.org/sustainable-food-value-chains/home/en/

Marsden, T., Hebinck, P., Mathijs, E. (2018). Re-building food systems: embedding assemblages, infrastructures and reflexive governance for food systems transformations in Europe. *Food Security*, 10(6), 1301-1309. https://doi.org/10.1007/s12571-018-0870-8

Moragues-Faus, A., Sonnino, R., Marsden. T. (2017). Exploring European Food System Vulnerabilities: Towards Integrated Food Security Governance. *Environmental Science & Policy*, 75, 184-215. https://doi.org/10.1016/j.envsci.2017.05.015

Moragues-Faus, A., Marsden, T. (2017). The political ecology of food: Carving 'spaces of possibility' in a new research agenda. *Journal of Rural Studies*, 55, 275-288. https://doi.org/10.1016/j.jrurstud.2017.08.016

Renting, H., Wiskerke, H. (2010). New Emerging Roles for Public Institutions and Civil Society in the Promotion of Sustainable Local Agro-Food Systems. In: WS4.4 – Transitions towards sustainable agriculture: From farmers to agro-food systems. *9th European IFSA Symposium*, 4-7 July 2010, Vienna (Austria). https://library.wur.nl/WebQuery/wurpubs/fulltext/146104

Rossi, A., Bui, S., Marsden, T. (2019). Redefining power relations in agrifood systems. *Journal of Rural Studies*, 68, 147-158. https://doi.org/10.1016/j.jrurstud.2019.01.002

Steel, C. (2013). *Hungry City: How Food Shapes Our Lives*. London: Vintage Books. [Chaper 3, Market and Supermarket, pp. 103-152]

Module 3 detailed description and timetable: Third Week

W15 Agri-food system transformations and Public Policy (30-31/05 and 1-3/06/2022)

Monday Activity (30/05/2022)	**Content**	**teachers**	**timetable**
Collective sharing session of Field trips 1 on AGFS Governance by the 2-3 rotating presenters. These 15' presentations + debates will be peer assessed, and feedback will be provided to the presenters by the module coordinator	**Basic learnings on AGFS Governance** get from Field trips 1 in Barcelona, Budapest, Montpellier, and Utrecht	***Enric Tello*** *(facilitator)*	*2,5 (10:00-12:30 with a break)*
Challenge Group Teamwork to upgrade specific **concept maps**	**AGFS transformation** of the specific challenge	*(students alone)*	*1,5 (12:30-13:00 14:00-15:00)*
Panel on two ongoing Agri-Food Policy experiences in Barcelona city and the Barcelona Metropolitan Area: • **Amaranta Herrero** (Environmental Scientist, advisor of the Barcelona City Council): *The Barcelona 2030 Sustainable Food Strategy as the city's leading membership of the Milan Urban Food Policy Pact (MUFPP)* • **Teresa Gómez-Fabra** (Architect, member of land-use planning service of the Barcelona Metropolitan Area, AMB): *The role of the agri-food system in the green infrastructure of the AMB according to the new Urban Master Plan*	**Two experts** working as technicians in the local and metropolitan public sector will present **how new policies aim to transform the AGFS at the local level** in Barcelona city and region	***Enric Tello*** *(facil.)*	*1,5 15:00-16:30*
Individual self-preparation of Field trip 2. Consult the webpages, maps and other information contained in the field trip 2 preparation package, considering the readings, debates, concepts, and tools used throughout the day	**Prepare issues and questions to be raised in field trip 2,** considering the readings, debates, concepts, and tools used throughout the day	*Self-organized by students in each university*	*0,5 (16:30-17:00)*

Readings & links of the day:

Barcelona 2030 Sustainable Food Strategy: https://www.alimentaciosostenible.barcelona/en

Hebinck, A., Selomane, O., Veen, E. et al. (2021). Exploring the transformative potential of urban food. *npj Urban Sustainabilty*, 1, 38. https://doi.org/10.1038/s42949-021-00041-x

Milan Urban Food Policy Pact (MUFPP): https://www. milanurbanfoodpolicypact.org/

Smith, J., Andersson, G., Gourlay, R., Karner, S., Mikkelsen, B. E., Sonnino, R., Barling, D. (2016). Balancing Competing Policy Demands: The Case of Sustainable Public Sector Food Procurement. *Journal of Cleaner Production*, 112, 249-256. https://doi.org/10.1016/j.jclepro.2015.07.065

The new Urban Master Plan of the Barcelona Metropolitan Area (AMB): https://urbanisme.amb.cat/en

Steel, C. TED talks: https://www.youtube.com/watch?v=CLWRclarri0 (15'); and/or: https://www.youtube.com/watch?v=864upAYIjEY (15')

Optional readings:

Shiva, V. (2016). *Who Really Feeds the World?* Berkeley: North Atlantic Books.

Steel, C. (2020). *Sitopia. How Food can Save the World*. London: Chatto & Windus.

Tuesday Activity (31/05/2022)	**Content**		**No teaching**
Team/individual reading work: a) Working on the role of public policy in AGFS at the different scales using the readings of the day	**Self-study**: *summarizing learnings and preparing questions for Field trip 2*	*Self-organized*	
Team/individual assimilating work: b) developing general concept maps of AGFS transformation from a Food Policy view	**Self-study**: *incorporating Food Policy to concept maps of AGFS transformation*	Self-organized	
Team/sharing work by challenge groups**:** c) incorporate Food Policy concepts to the *specific* concept maps of the challenge to be sent to the other group of the same challenge for the next day	**Self-organized online teamwork** by challenge groups to incorporate Food Policy to *specific* concept maps sent to the other group	*Self-organized by challenge groups*	
Individual upgrading of concept maps filled in the e-portfolio	**Go deeper in AGFS transformation**, in general		

Readings & links of the day:

Davies, A. R. (2020). Toward a Sustainable Food System for the European Union: Insights from the Social Sciences. *One Earth*, 3(1), 27–31. https://doi.org/10.1016/j.oneear.2020.06.008

FAO (2019). *FAO framework for the Urban Food Agenda. Leveraging sub-national and local government action to ensure sustainable food systems and improved nutrition*. Rome: FAO. https://www.fao.org/3/ca3151en/CA3151EN.pdf

Hawkes, C., Parsons, K. (2019). Brief 1: *Tackling food systems challenges: the role of food policy*. London: Centre for Food Policy. https://openaccess.city.ac.uk/id/eprint/22793/

Parsons K., Hawkes C., Wells R. (2019). Understanding the food system: why it matters for food policy. Brief 2 of *Rethinking Food Policy: A Fresh Approach to Policy and Practice*. Center for Food Policy, City University of London. https://www.city.ac.uk/__data/assets/pdf_file/0008/471599/7643_Brief-2_What-is-the-food-system-A-food-policy-perspective_WEB_SP.pdf

SAPEA (2020). *A sustainable food system for the EU. Evidence Review Report No. 7*. Brussels: Science Advice for Policy by European Academies. https://www.sapea.info/wp-content/uploads/sustainable-food-system-report.pdf

Springmann, M., Freund, F. (2022). Options for reforming agricultural subsidies from health, climate, and economic perspectives. *Nature Communications*, 13, 82. https://doi.org/10.1038/s41467-021-27645-2

Other readings & links of the day:

Marull, J., Padró, R., Cirera, J., Giocoli, A., Pons, M., Tello, E. (2021). A socioecological integrated analysis of the Barcelona metropolitan agricultural landscapes. *Ecosystem Services*, 51, 101350. https://doi.org/10.1016/j.ecoser.2021.101350

Moragues-Faus, A., Battersby, J. (2021). Urban food policies for a sustainable and just future: Concepts and tools for a renewed agenda. *Food Policy*, 103, 102124. https://doi.org/10.1016/j.foodpol.2021.102124

Padró, R., La Rota-Aguilera, M. J., Giocoli, A., Cirera, J., Coll, F., Pons, M., Pino, J., Pilia, S., Serrano, T., Villaba, G., Marull, J. (2020). Assessing the sustainability of contrasting land use scenarios through the Socioecological Integrated Analysis (SIA) of the metropolitan green infrastructure in Barcelona. *Landscape and Urban Planning*, 203, 103905. https://doi.org/10.1016/j.landurbplan.2020.103905

For the preparation of Field trip 2 in Barcelona:

The new Urban Master Plan of the Barcelona Metropolitan Area (AMB): https://urbanisme.amb.cat/en

The Green Infrastructure of the Barcelona Metropolitan Area: https://urbanisme.amb.cat/en/pdu-metropolita/reptes-oportunitats/infraestructura-verda

A short video explaining the ecosystem services provided by the Green Infrastructure of the AMB: https://www.youtube.com/watch?v=tsGqkK-skMY

Collserola Natural Park: https://www.parcnaturalcollserola.cat/en/

The citizen initiative *Let's Feed Collserola* in the Natural Park between Sant Cugat and Barcelona municipalities: https://www.parcnaturalcollserola.cat/en/farming-and-livestock-plan/

The Coop *Arran de Terra* (“at the ground level”) for the local agroecology dynamization: https://arrandeterra.org/

The Coop Can Calopa-L'Olivera Farm and winery in Collserola Natural Park: https://olivera.org/en/

The *Ateneu Rura*l ("rural athenaeum") in Collserola Natural Park, a Coop for food production, selling, education and leisure: https://www.laruraldecollserola.com/ateneu_rural

The *L'Ortiga* farm in Collserola Natural Park, a Coop for food production, selling, education and leisure with strong links with **t**he school food policy of the Sant Cugat City Council: https://www.lortiga.cat/

School gardening and canteen experiences supported by the City Council of the city of Sant Cugat del Vallès: https://www.santcugat.cat/web/horts-escolars

Buijs, A., Hansen, R., Van der Jagt, S., Ambrose-Oji, B., Elands, B., Rall, E. L., Mattijssen, T., Pauleit, S., Runhaar, H., Olafsson, A. S., Møller, M. S. (2019). Mosaic governance for urban green infrastructure: Upscaling active citizenship from a local government perspective. *Urban Forestry & Urban Greening*, 40, 53-62. https://doi.org/10.1016/j.ufug.2018.06.011

Marull, J., Padró, R., Cirera, J., Giocoli, A., Pons, M., Tello, E. (2021). A socioecological integrated analysis of the Barcelona metropolitan agricultural landscapes. *Ecosystem Services*, 51, 101350. https://doi.org/10.1016/j.ecoser.2021.101350

Citizen movements and environmentalist protests for the new urban developments in the ABM green infrastructure: https://sosbaixllobregat.cat/

For the preparation of Field trip 2 in Budapest:

"*Gabonakutató Nonprofit Közhasznú Kiszombor*", Hungarian non-profit ltd. Co. for seed plant breeding of cereals and other grains: https://www.gabonakutato.hu/en/seed-plant

Tschersich, J. (2021). Norm conflicts as governance challenges for Seed Commons: Comparing cases from Germany and the Philippines. *Earth System Governance*, 7, 100097. https://doi.org/10.1016/j.esg.2021.100097

LIVESEED EU research project on organic seed breeding: https://www.liveseed.eu/ (see in this website the ÖMKi-LIVESEED Practical Abstract number on *How to access organic seeds in Hungary*: https://www.liveseed.eu/tools-for-practitioners/practice-abstracts/; and the report *National Report for Hungary: How to improve the production and the use of organic seeds?,* in https://www.liveseed.eu/wp1/task-1-4-2-national-progress-reports/

For the preparation of Field trip 2 in Montpellier:

"*Pays Coeur d'Hérault*" wine-growing area of French Languedoc: https://www.languedoc-coeur-herault.fr/

"*Le projet alimentaire territorial du Pays Cœur d'Hérault*": https://www.coeur-herault.fr/amenagement/actualites/le-projet-alimentaire-territorial-du-pays-coeur-dherault-se-concretise

"*États Généraux de l'Alimentation et de l'Agriculture durables en Pays Cœur d'Hérault*": https://umr-innovation.cirad.fr/projets/egaad-pays-caeur-d-herault

Leedon, G., L'Espoir Decosta, J-N. P., Buttriss, G., Lu, V. N. (2021). Consuming the earth? Terroir and rural sustainability. *Journal of Rural Studies*, 87, 415-422. https://doi.org/10.1016/j.jrurstud.2021.09.030

« La politique agroécologique et alimentaire de Montpellier Méditerranée Métropole » https://www.montpellier3m.fr/vivre-environnement/agro%C3%A9cologie-alimentation

«Entreprendre à Montpellie : pour la transition agroécologique et l'alimentation durable» : https://www.entreprendre-montpellier.com/fr/la-politique-agroecologique-et-alimentaire

«Les territoires de la région Occitanie s'engagent dans des projets alimentaires territoriaux» : https://draaf.occitanie.agriculture.gouv.fr/Les-territoires-de-la-region-s

«Programme national pour l'alimentation: 15 nouveaux projets financés en Occitanie» : https://www.prefectures-regions.gouv.fr/occitanie/Actualites/Programme-national-pour-l-alimentation-15-nouveaux-projets-finances-en-Occitanie

For the preparation of Field trip 2 in Utrecht:

The European Commission EnRoute case study of Utrecht municipality on enhancing urban ecosystems through green infrastructure, in the framework of the EU Biodiversity Strategy: https://oppla.eu/casestudy/19311

Food-Print Utrecht Region https://foodprint-utrecht.nl/over-foodprint/

Maes, J., Zulian, G., Guenther, S., Thijssen, M. and Raynal, J., Enhancing Resilience of Urban Ecosystems through Green Infrastructure (EnRoute), EUR 29630 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-00271-0, doi:10.2760/689989, JRC115375. Published by the European Commission: https://op.europa.eu/en/publication-detail/-/publication/cc585ccd-3b0c-11e9-8d04-01aa75ed71a1/language-en

Haenen, L., Renting, H., Dubbeling, M., Hoekstra, F. (2018). *Assessment and planning of the Utrecht City Region Food System*. Rome: RUAF, FAO and WLU. Available at FAO website: https://www.fao.org/publications/card/en/c/CA1116EN/

Buijs, A., Hansen, R., Van der Jagt, S., Ambrose-Oji, B., Elands, B., Rall, E. L., Mattijssen, T., Pauleit, S., Runhaar, H., Olafsson, A. S., Møller, M. S. (2019). Mosaic governance for urban green infrastructure: Upscaling active citizenship from a local government perspective. *Urban Forestry & Urban Greening*, 40, 53-62. https://doi.org/10.1016/j.ufug.2018.06.011

Wednesday Activity (01/06/2022)	**Content**	**teachers**	**timetable**
Barcelona: *Collserola* Natural Park & the campaign ***Let's Feed Collserola*** (visits to ***Ateneu Rural*** & **L'Ortiga** farms) [Using the Peek App]	**To realize and elaborate on the role, capacities, and limits, of local-regional-national-EU & global public initiatives** like	*Enric Tello (UB)* *Viktor Mihucz (ELTE)* *Roland Thaler (UM)*	9:00-13:00

Budapest: ***Kiszombor*** **non-profit Ltd. Co. breeding seed plant** for grain growing in Hungary **Montpellier:** ***Montpellier Méditerranée Métropole, agro-ecological transition and sustainable alimentation*** with the **"Food Territorial Programme"** [Using the Peek App] **Utrecht**: Visit of selected parts of the g**reen infrastructure of Utrecht** municipality studied by the **EU EnRoute project**	the Milan Urban Food Policy Pact and others like the Food Territorial Programme in the Pays Coeur d'Hérault, the Green Infrastructure of Utrecht, and the Master Urban Plan of the Barcelona Metropolitan Area, regarding the multidimensional and multi-scalar AGFS & AE transformation	*Julia Tschersich (UU)*	
Separated UB, ELTE, UM, UU self-organized teamwork to prepare Field trip 2 presentations to the next **collective sharing session on Friday** using as tutorial the set of questions and indications of the Peek App field trip + readings and concept maps made so far **(*each university team must choose 2-3 students as presenters to the next sharing session that will rotate and be assessed*)** + individual self-study and e-portfolio reflections.	Apply theories of Food Policy for AGFS change and AE transition to the information gathered in the field trips, to **elaborate presentations** with different examples		*14:00-17:00*

Readings & links of the day:

Cabannes, Y., Marocchino, C. (eds.) (2018). *Integrating Food into Urban Planning.* UCL Press/FAO. https://www.fao.org/publications/card/es/c/CA2260EN/ (Introduction and Chapter 1, 59 out of 347 pages + Chapter 13 by Baker, L., Food Asset Mapping in Toronto and Greater Golden Horseshoe Region (12 p.).

Hawkes, C., Smith. T. G., Jewell, J., Wardle, J., Hammond, R. A., Friel, S., Thow, A. M., Kain, J. (2015). Smart food policies for obesity prevention. *The Lancet*, 385 (9985), 2410-2421. https://doi.org/10.1016/S0140-6736(14)61745-1

Thursday Activity (02/06/2022)	**Content**		**No teaching**
Teamwork at each university (UB, ELTE, UM, UU): First session to prepare the self-organized Field trip 3 on mapping city food markets: *setting research questions & experimental designs*	**Challenge**: *to learn to plan a research field trip relating the research questions addressed with the experimental design*	*Self-organized by students in each university*	*In the morning*
Teamwork at each university (UB, ELTE, UM, UU): to prepare Field trip 2 presentations to the next **collective sharing session** + individual self-study and e-portfolio reflections.	**Self-study**: *finish the elaboration of Field trip 2 presentations of each university and place*	*Self-organized by students in each university*	*In the evening*

Readings & links of the day:

The same as on Monday, Tuesday & Wednesday and, for Field trip 3 preparation:

Domene, E. (ed.) (2018). *Entorns alimentaris locals: Com s'alimenta l'àrea metropolitana de Barcelona? El cas de la ciutat de Barcelona*. IERMB: Bellaterra. file:///C:/Users/Enric/Downloads/Entorns%20alimentaris.pdf

FAO (2014). *Sustainability Assessment of Food and Agriculture systems Guidelines* (SAFA version 3.0). Rome: FAO. https://www.fao.org/family-farming/detail/en/c/284657/

Global Database for City and Regional Food Policies at Buffalo University**:** http://www.buffalo.edu/globalhealthequity/global-projects/foodequity/global-database-for-city-and-regional-food-policies.html

Landert, J., Schader, C., Moschitz, H., Stolze, M. (2017). A Holistic Sustainability Assessment Method for Urban Food System Governance. *Sustainability*, 9, 490. https://doi.org/10.3390/su9040490

Moragues-Faus, A., Marceau, A. (2019). Measuring Progress in Sustainable Food Cities: An Indicators Toolbox for Action. *Sustainability*, 11(1), 45. https://www.mdpi.com/2071-1050/11/1/45

URBAL mapping impact pathways of urban food system sustainability innovations: https://www.urbalfood.org/methodology/

Valette, E., Schreiber, K., Conare, D., Bonomelli, V., Blay-Palmer, A., Bricas N. (2020). An Emerging User-led Participatory Methodology: Mapping Impact Pathways of Urban Food System Sustainability Innovations. In Blay-Palmer, A., Conare, D., Meter, K., DI Battista, A. (Eds.). *Sustainable Food System Assessment: Lessons from global practice*. New York: Routledge, pp. 19-41. http://agents.cirad.fr/index.php/nicolas+bricas/Publi_english#:~:text=VALETTE%20E.%2C%20SCHREIBER,41.%20%5BFull%20Text%5D

Friday Activity (03/06/2022)	**Content**	**teachers**	**timetable**
Collective sharing session of Field trips 2 on Food Policy by the 2-3 rotating presenters. These 15' presentations + debates will be peer assessed, and feedback will be provided to the presenters by the module coordinator	**Basic learnings on the role of Food Policy** get from Field trips 2 in Barcelona, Budapest, Montpellier, and Utrecht	***Enric Tello*** *(facilitator)*	*2,5 (10:00-12:30 with a break)*
Individual upgrading of concept maps filled in the e-portfolio	**Go deeper in AGFS transformation**, in general	*(students alone)*	*0,5 12:30-13:00*
Lecture by Elodie Valette (CIRAD, Montpelier) on **The change-based participatory URBAL methodology of agri-food system transformation** (https://www.urbalfood.org/)	**AGFS transformation** from the URBAL approach to help students to self-organize field trip 3 on city food observation and social mapping	***Enric Tello*** *(facil.)*	*1,5 14:00-15:30*
Teamwork at each university (UB, ELTE, UM, UU): To prepare the self-organized Field trip 3 on food mapping of **Social & Environment al Mapping Urban Food Markets** is a field trip	**Research questions and experimental designs** to be decided before choosing sites and methods	***Enric Tello*** *(facil.)*	*1,5 15:30-17:00*

organized to observe the behaviours of buyers and sellers in different types of food markets and social environments of your city. **Framework reading:** the change-based, and participatory URBAL methodology (Valette et al., 2020; https://www.urbalfood.org/). **If students want to perform a Participatory Action Research (PAR),** stakeholders must be selected and contacted at once.	***What we want to know by looking at different typologies of food markets?*** A) **Do we want to perform a Participatory Action Research (PAR) like in URBAL projects?** If so, with which stakeholders? B) **Quantitative and qualitative data gathering**: Do we want to know if different types of food (fresh, processed, frozen) predominate in different markets and/or neighbourhoods? Do we want to know whether buyers look for different types of diets in different markets and/or neighbourhoods? Do we want to compare the prices among them (different market typos, neighbourhoods)? If so, are we going to compare a list of single food products or entire dietary options (e.g., different menus previously decided? How can we ensure that the results will be comparable and meaningful? Are we going to differentiate food choices by gender and age of the buyers observed? Are we going to interview some of them to know about their aims and opinions on why they do? C) **Data processing**: How and where are we going to fill the quantitative data gathered to make it easier to process them? Are we going to record interviews? (What about your knowledge of the local language and habits?) D) **Selection of food market typologies**: Public Urban Markets, Supermarkets, Neighbourhood Small Shops, Chain Stores with Franchise or not, Outdoor Farmers' Markets, Food Coops, Food Consumption		

	Baskets direct from producers to consumers… E) **Selection of socially different neighbourhoods**: Information on income distribution across different districts and neighbourhood of your city is needed		
+ Wrap Up of the week & instructions or information for the next			
Individual filling of the e-portfolio with the reflections of the week			

Readings & links of the day (the same as in Thursday plus)**:**

Chapter 5 on Positive Direction for Food Systems, Diets and Nutrition of the HLPE (2017). *Nutrition and food systems. A report of The High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. FAO: Rome. https://www.fao.org/3/i7846e/i7846e.pdf

Raja, S., Sweeney, E., Mui, Y., Frimpong Boamah, E. (2021). *Local government planning for community food systems – Opportunity, innovation and equity in low- and middle-income countries*. Rome: FAO. https://www.fao.org/documents/card/en/c/cb3136en (147 p.)

Wright, J. D., Donley, A. M., Gualtieri, M. C., Strickhouser, S. M. (2016). Food Deserts: What is the Problem? What is the Solution? *Social Science & Public Policy*, 2. Doi: 10.1007/s12115-016-9993-8

Module 3 detailed description and timetable: Fourth Week

W16 Agri-food system transformations and Civil Society Organisations (7-10/06/2022; Monday 6/06 is holiday)

Tuesday Activity (07/06/2022)	**Content**	**teachers**	**timetable**
Lecture on "The role of civil society and other actors in processes of social-ecological transformation of agri-food systems: The example of Seed Commons" by **Julia Tschersich**	**Concepts and tools used by civil society initiatives to transform agri-food systems**, with the example of seeds as a key component	**Julia Tschersich +** *Enric Tello (facil.)*	*1,5 (10:11:30)*
Individual upgrading of concept maps filled in the e-portfolio	**Go deeper in AGFS transformation**, in general	*(students alone)*	*1 11:30-12:30*
Panel with civil society actors on agri-food system transformation. Invited representatives ✓ **Daniel López** (Spanish *Network of Cities for Agroecology*) https://www.ciudadesagroecologicas.eu/) ✓ **A representative of the German Kultursaat association** for the long-term maintenance breeding of and biodynamic seed varieties (https://www.kultursaat.org/en/association/objectives/conservation-of-reliable-vegetable-varieties/). ✓ **The cooperative supermarket La Cagette in Montpellier,** included in the URBAL project, Céline Scornavacca (https://www.urbalfood.org/case_studies/la-cagette-montpellier/)	**Civil society representatives from different levels (local to global) will present in 15' minutes how they are working to transform food systems** with specific examples, by taking advantage of their site-specific opportunities and overcoming the barriers or opposition they face. Students will elaborate on **the contrast between top-down and bottom-up initiatives**, and dynamics of food system transformation and agroecology transition **depending on the actors involved in different positions in the agri-food chain**, framing them in the previously studied literature on food governance, role of civil society and policy	***Enric Tello*** *(facil.)*	*2,5 (14:00-16:30)*

Readings & links of the day:

Davies, A. R., Evand, D. (2019). Urban food sharing: Emerging geographies of production, consumption and exchange. *Geoforum*, 99, 154-150. https://doi.org/10.1016/j.geoforum.2018.11.015

Holt Gimenez, E., Shattuck, A. (2011). Food crises, food regimes and food movements: rumblings of reform or tides of transformation? *The Journal of Peasant Studies*, 38(1), 109–144. https://doi.org/10.1080/03066150.2010.538578

López-Garcia, D., González de Molina, M. (2021). An Operational Approach to Agroecology-Based Local Agri-Food Systems. *Sustainability*, 13(15), 8443. https://doi.org/10.3390/su13158443

Martínez-Torres, M. E., Rosset, P. M. (2010). La Vía Campesina: the birth and evolution of a transnational social movement. *Journal of Peasant Studies*, 37(1), 149–175. https://doi.org/10.1080/03066150903498804

Sievers-Glotzbach, Tschersich, J. (2019). Overcoming the process-structure divide in conceptions of social-ecological transformation: Assessing the transformative character and impact of change processes. *Ecological Economics*, 164, . https://doi.org/10.1016/j.ecolecon.2019.106361

Sievers-Glotzbach, S.; Euler, J.; Frison, C.; Kliem, L.; Mazé, A., Tschersich, J. (2020): Beyond the material: knowledge aspects in seed commoning. *Agriculture and Human Values* (2020). https://doi.org/10.1007/s10460-020-10167-w

Tschersich, J. (2021). Norm conflicts as governance challenges for Seed Commons: Comparing cases from Germany and the Philippines. *Earth System Governance*, 7, 100097. https://doi.org/10.1016/j.esg.2021.100097

Via Campesina (2009). *Small!Scale!Sustainable!Farmers Are Cooling Down The Earth.* https://viacampesina.org/en/la-via-campesina-position-paper-small-scale-sustenable-farmers-are-cooling-down-the-earth/

The The Simplakert producer's marketi n Budapest as an inspiring experience: https://www.szimpla.hu/termeloi-piac

Wednesday Activity (08/06/2022)	**Content**	**teachers**	**timetable**
Workshop of students to self-preparation the next field trip 3 of Social & Environmental Mapping Urban Food Markets (I): *Designing a common experimental design*	***What we want to know by looking at different typologies of food markets?*** A) **Do we want to perform a Participatory Action Research (PAR) like in the URBAL projects?** Stakeholders must have been contacted B) **Quantitative and qualitative data gathering**: Must be decided **C) Data processing**: must be decided **D) Selection of food market typologies**: must be decided **E) Selection of neighbourhoods**: must be decided **F) Final presentation to the sharing session:** How?	*Enric Tello (facil.)*	*3 (10:30-13:00)*

Final Workshop of students to self-prepare the next field trip 3 of Mapping Urban Food Markets (and II): ***Selection of market typologies and locations to be visited by each student*** *(or groups of two students)*	The approach, methodology and experimental design must be decided and organized by the students in each city	*Enric Tello (facil.)*	*3 (14:00-17:00)*

Readings & links of the day (the same as previous sessions, plus):

Bach-Faig, A., Berry, E.M., Lairon, D., et al. (2011). Mediterranean diet pyramid today. Science and cultural Updates. *Public Health Nutrition*, 14(12A), 2274–2284. https://doi.org/10.1017/S1368980011002515

Chapter 5 on Positive Direction for Food Systems, Diets and Nutrition of the HLPE (2017). *Nutrition and food systems. A report of The High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. FAO: Rome. https://www.fao.org/3/i7846e/i7846e.pdf

Davis, C., Bryan, J., Hodgson, J., Murphy, K. (2015). Definition of the Mediterranean diet: A literature review. *Nutrients*, 7 (11), 9139e9153. https://doi.org/10.3390/nu7115459

Wright, J. D., Donley, A. M., Gualtieri, M. C., Strickhouser, S. M. (2016). Food Deserts: What is the Problem? What is the Solution? *Social Science & Public Policy*, 2. Doi: 10.1007/s12115-016-9993-8

Thursday Activity (09/06/2022)	**Content**		**No teaching**
Fieldwork on Social & Environmental Mapping Urban Food Markets and Foodscapes in Barcelona, Budapest, Montpellier, and Utrecht	**To realize and elaborate on the role**, capacities, limits and trade-offs **of individual choices, community initiatives** and public policies on the sustainable performance of urban food markets	*Self-organized by students in each university*	9:00-13:00
Separated UB, ELTE, UM, UU Teamwork through self-organized online meetings to prepare Field trip 3 presentations to the **collective sharing session on Friday** (*each university team must choose 2-3 rotating students as presenters to the next sharing session that will be assessed*) + individual self-study & e-portfolio reflections.	Apply theories of AGFS change and AE transition to the information gathered in the field trips, to **elaborate presentations** with different examples	*Self-organized by students in each university*	*14:00-17:00*

Readings & links of the day:

The same as on Wednesday

Friday Activity (10/06/2022)	**Content**		**Contact hours 2,5**
Collective sharing session of Field trip 3 results on Social & Environmental Mapping Urban Food Markets by the 2-3 rotating presenters. These 15' presentations + debates will be peer assessed, and feedback will be provided to the presenters by the module coordinator	**Basic learnings of Field trips 3 to observe the behaviour of citizen buyers and sellers in different market types and foodscapes** in Barcelona, Budapest, Montpellier, and Utrecht	***Enric Tello*** *(facilitator)*	*2,5 (10:00-12:30 with a break)*
Team challenge groups work: incorporating the new learnings of the last two weeks to the specific concept maps of challenge groups + Wrap Up of the week & instructions or information for the next	**Self-organized teamwork** by the challenge groups in the hybrid classrooms to incorporate new learnings to challenge-specific concept maps	*(students alone)*	*2,5 (14:00-16:30)*

Readings & links of the day:

Moragues-Faus, A., Marsden, T., Adlerová, B., Hausmanová, T. (2020). Building Diverse, Distributive, and Territorialized Agrifood Economies to Deliver Sustainability and Food Security. *Economic Geography*, 96(3), 1-25. https://doi.org/10.1080/00130095.2020.1749047

Moragues-Faus, A. (2020). Distributive food systems to build just and liveable futures. *Agriculture and Human Values*, 37, 583–584. https://doi.org/10.1007/s10460-020-10087-9

Moragues Faus, A., Sonnino, R. (2019). Re-assembling sustainable food cities: An exploration of translocal governance and its multiple agencies. *Urban Studies*, 56(4), 778-794. https://doi.org/10.1177/0042098018763038

Potira Preiss, P., Charão-Marques, F., Wiskerke, J. S. C. (2019). Fostering Sustainable Urban-Rural Linkages through Local Food Supply: A Transnational Analysis of Collaborative Food Alliances. *Sustainability*, 9, 1155. http://dx.doi.org/10.3390/su9071155

Module 3 detailed description and timetable: Fifth Week

W17 Agri-food system transformations and Private Sector (13-16/06/2022)

Monday Activity (13/06/2022)	**Content**		**timetable**
Lecture on the role of private sector in food transformations, based on the experience of a vine-growing farm and winery in the Catalan Penedès County (where 40% of the cultivated land has already turned organic) conducted by the EU-PRIMA research project MAF4SURE (*Mediterranean Agroecosystems for Sustainability and Resilience under Climate Change*)	Introduction to **tools used by private sector to transform food systems**: lobby, advertisement, innovation, certifications such as organic, fair trade, alliances, etc.	***Soazig Darnay*** *(the lands & winery of Caves Gramona) +* ***Enric Tello***	*1,5 (10:00-11:30)*
Team challenge groups work: incorporating the existence of different business/economic models to the specific concept maps and reports of challenge groups	**Teamwork** by the challenge groups to incorporate the diverse business /economic models to specific concept maps and forthcoming reports	*(students alone)*	*1,5 (11:30-13:00)*
Panel with private sector actors: ✓ **DANONE Institute**-UB Chair (Alejandro de Frías) (http://www.ub.edu/campusalimentacio/es/catedra_UB_DANONE.html) ✓ **Casa Ametller** food wholesaler & retailer chain of supermarkets, restaurants & school canteens (https://ametllerorigen.cat/es/), Amaya Prat ✓ **Slow Food** Catalonia Km0, 53 restaurants and 17 school canteens (https://www.km0slowfood.com/?lang=en), Ignasi Martínez (Bellver)	**Private sector representatives from different levels** and sectors (i.e., restaurants, supermarket, food industry) **will present how they aim at transforming agri-food systems** with specific examples, and address the opportunities and barriers faced. Students will elaborate on **the contrasts between different actors involved in different positions in the agri-food chain**	*Facilitation by* ***Enric Tello***	*2 (14:00-15:30)*
Individual filling of the e-portfolio with the reflections on general concept maps			

Readings & links of the day:

Antonini, C., Josep Maria Argilés-Bosch, J. M. (2017). Productivity and environmental costs from intensification of farming. A panel data analysis across EU regions. *Journal of Cleaner Production*, 796-803. http://dx.doi.org/10.1016/j.jclepro.2016.04.009

Busch, L. (2011). The private governance of food: equitable exchange or bizarre bazaar? *Agriculture and Human Values*, 28(3), 345–352. https://doi.org/10.1007/s10460-009-9210-0

Manlosa, A. O., Schultner, J., Dorresteijn, I., Fischer, J. (2019). Leverage points for improving gender equality and human well-being in a smallholder farming context. *Sustainability Science*, 14, 529–541. https://doi.org/10.1007/s11625-018-0636-4

Moragues-Faus, A., Marsden, T., Adlerová, B., Hausmanová, T. (2020). Building Diverse, Distributive, and Territorialized Agrifood Economies to Deliver Sustainability and Food Security. *Economic Geography*, 96(3), 1-25. https://doi.org/10.1080/00130095.2020.1749047

Morel. K., Revoyron, E., San Cristobal, M., Baret. P. V. (2020). Innovating within or outside dominant food systems? Different challenges for contrasting crop diversification strategies in Europe. *PLoS ONE*, 15(3), e0229910. https://doi.org/10.1371/journal.pone.0229910

Plateau, L., Roudart, L., Hudon,M., Maréchal, K. (2021). Opening the organisational black box to grasp the difficulties of agroecological transition. An empirical analysis of tensions in agroecological production cooperatives. *Ecological Economics*, 185, 107048. https://doi.org/10.1016/j.ecolecon.2021.107048

Sanz-Cañada, J., Gómez-Aparicio, L. (coords.) (2020). Agroecology and Circual Bioeconomy. In: *Sustainable primary production*, Vol. 6, Madrid: CSIC, pp. 42-61. https://digital.csic.es/handle/10261/230435

Van der Ploeg, J. D., Barjolle, D., Bruil, J., Brunori, G., Costa Madureira, L. M., Dessein, J., Drąg, Z., Fink-Kessler, A., Gasselin, P., Gonzalez de Molina, M., Gorlach, K., Jürgens, K., Jim Kinsella, Kirwan, J., Knickel, K., Lucas, V., Marsden, T., Maye, D., Migliorini, P., Milone, P., Noe, E., Nowak, P., Parrott, N., Peeters, A., Rossi, A., Schermer, M., Ventura, F., Visser, M., Wezel, A. (2019). The economic potential of agroecology: Empirical evidence from Europe. *Journal of Rural Studies*, 71, 46-61. https://doi.org/10.1016/j.jrurstud.2019.09.003

FAO Sustainable Food Value Chains Knowledge Platform website: https://www.fao.org/sustainable-food-value-chains/home/en/

DANONE Institute-UB Professorship: http://www.ub.edu/campusalimentacio/es/catedra_UB_DANONE.html

Casa Ametller food producer and retailer chain of supermarkets, restaurants, and school canteens: https://ametllerorigen.cat/es/

Slow Food Catalonia Km0, 53 restaurants and 17 school canteens: https://www.km0slowfood.com/?lang=en

Tuesday Activity (14/06/2022)	**Content**		**No teaching**
Team/individual reading work to prepare Field trip 4 *with the readings of the week summarizing concepts on business models and circular bioeconomy*	**Self-study**: *prepare Field trip 4, with questions for the next day, and incorporating the new concepts to each challenge group*	*Self-organized*	

Readings & links of the day:

Justus von Liebig (1859). On English Farming and Sewers. Letter to The Times. https://monthlyreview.org/2018/07/01/on-english-farming-and-sewers/

Chen, Q., An, X., Zhu, Y., Su, J., Gillings, M., Ye, Z. Cui, L. (2017). Application of Struvite Alters the Antibiotic Resistome in Soil, Rhizosphere, and Phyllosphere. *Environmental Science & Technology*, 51(14), 8149-8157. https://doi.org/10.1021/acs.est.7b01420

Cordell, D., Rosemarin, A., Schröder, J.J., Smit, A.L. (2011). Towards global phosphorus security: a systems framework for phosphorus recovery and reuse options. *Chemosphere*, 84, 747–758. https://doi.org/10.1016/J.CHEMOSPHERE.2011.02.032

Rufí-Salís, M., Brunnhofer, N., Petit-Boix, A., Gabarrell, X., Guisasola, A., Villalba, G. (2020). Can wastewater feed cities? Determining the feasibility and environmental burdens of struvite recovery and reuse for urban regions. *Science of the Total Environment,* 737, 139783. https://doi.org/10.1016/j.scitotenv.2020.139783

Torrens, A., de la Varga, D., Khafor Ndiaye, A., Folch, M., Coly, A. (2020). Innovative Multistage Constructed Wetland for Municipal Wastewater Treatment and Reuse for Agriculture in Senegal. *Water*, 12(11), 3139; https://doi.org/10.3390/w12113139

Torrens, A., Folch, M., Salgot, M. (2021). Design and Performance of an Innovative Hybrid Constructed Wetland for Sustainable Pig Slurry Treatment in Small Farms. *Frontiers in Environmental Science*, 8, 577186. https://doi.org/10.3389/fenvs.2020.577186

European Commission, EU rules promote the use of sewage sludge in agriculture as part of the Circular Economy and Bioeconomy strategies: https://ec.europa.eu/environment/topics/waste-and-recycling/sewage-sludge_en

The Nature-based solutions (NBS) for water innovation and wastewater treatment promoted by Fundació Solidaritat UB within the EU Horizon 2020 research project Edible Cities Network: https://www.edicitnet.com/

Fundació Solidaritat UB projects to support to the sustainable management of Saint Louis' water resources (Senegal): http://www.solidaritat.ub.edu/cooperation-and-university-training-for-development/?lang=en

For the preparation of Field trip 4 in Barcelona:

Wastewater Treatment Plant of La Llagosta municipality in the Besòs River: https://www.dam-aguas.es/portfolio-posts/edar-la-llagosta/

EU Horizon 2020 Water Mining research project of circular economy: https://watermining.eu/

Rufí-Salís, M., Brunnhofer, N., Petit-Boix, A., Gabarrell, X., Guisasola, A., Villalba, G. (2020). Can wastewater feed cities? Determining the feasibility and environmental burdens of struvite recovery and reuse for urban regions. *Science of the Total Environment,* 737, 139783. https://doi.org/10.1016/j.scitotenv.2020.139783

For the preparation of Field trip 4 in Budapest:

Budapest Municipal Waste Recovery Plant operated by the Hungarian ERBE Energetika Mérnökiroda Kft.: https://www.fkf.hu/fovarosi-hulladekhasznosito

Szaniszló, A., Pecze, R., Bálint. Á. (2018). Examination of the heavy metal contamination of municipal waste incinerator and M3 motorway in Budapest. https://bibliotekanauki.pl/articles/125762

Rudnai, P-. Virágh, Z., Varró, M. J.*; Vaskövi, É., Beregszászi, T., Náray, M., Czitrovszky, A. (2006). Impact of Air Pollution on the Children's Health Near a Municipal Waste Incinerator. *Epidemiology*, 17(6), 414-415. https://journals.lww.com/epidem/Fulltext/2006/11001/Impact_of_Air_Pollution_on_the_Children_s_Health.1106.aspx

Sipos, P., Németh, T., Kovács Kis, V., Zajzon, N., Choi, C., May, Z. (2019). Potentially Toxic Metal-Bearing Phases in Urban Dust and Suspended Particulate Matter: The Case of Budapest, Hungary- In: Charlesworth, S. M., Booth, C. A. (eds.), *Urban Pollution: Science and Management*. Oxford: Wiley Blackwell, pp. 371-382. http://real.mtak.hu/87126/1/Sipos%20et%20al_2018_Urban%20Poll.pdf

For the preparation of Field trip 4 in Montpellier:

Organic waste in restauration and initiatives to reduce and valorise it in a situation of hardening law ("loi anti-gaspillage 2020" with obligation to separate biological waste for small activities and citizens before 2023):

https://www.ecologie.gouv.fr/biodechets

https://www.zerowastefrance.org/demarche-zero-waste/composter-et-trier-les-biodechets/?gclid=Cj0KCQiA95aRBhCsARIsAC2xvfzoUsDuVpfAeccUtrj6cugyBlFQDd7j_LhhxItKKIsXfheMlTyhvHoaAmI8EALw_wcB

Potential stakeholders around Montpellier: composting structures, restaurants and suppliers, local consultants and NGOs for example: https://charlotteco.fr/imaginer-des-alternatives/supermarches/

https://groupagrica.com/qui-sommes-nous/gaspillage-alimentaire/cpie-du-bassin-de-thau (with a link with the social and environmental responsibility of an agri-insurance company)

For the preparation of Field trip 4 in Utrecht:

StadsWormerij Coöperatie U.A. in Amersfoort, a social enterprise that collects organic waste around the city and applies vermiculture: https://stadswormerij.nl/over-de-stadswormerij/

This article will offer a reflection from a social/political perspective: Abrahamsson, S., & Bertoni, F. (2014). Compost Politics: Experimenting with Togetherness in Vermicomposting. *Environmental Humanities*, *4*(1), 125–148. https://doi.org/10.1215/22011919-3614962

And from a more natural science perspective: Ali, U., Sajid, N., Khalid, A., Riaz, L., Rabbani, M. M., Syed, J. H., & Malik, R. N. (2015). A review on vermicomposting of organic wastes. *Environmental Progress & Sustainable Energy*, *34*(4), 1050–1062. https://doi.org/10.1002/ep.12100

Wednesday Activity (15/06/2022)	**Content**	**teachers**	**timetable**
Barcelona: Wastewater Treatment Plant of La Llagosta municipality in the Besòs River **Budapest:** Municipal **Waste Recovery Plant** through incineration **Montpellier: *Biodechets 2023*:** ongoing French **Zero Waste Composting goals & initiatives** for climate change mitigation and adaptation **Utrecht: Worm composting workshop** at the **StadsWormerij,** a social enterprise/cooperative **in Amersfoort**, learn about principles of vermiculture and composting & build your own worm box	**Circular economy?** The urban-rural metabolic rift and the trespassing of planetary boundaries in t**he disruption of biogeochemical flows of Phosphorous and Nitrogen** end up partially concentrated in the sludge of wastewater treatment plants, becoming **a pending sustainability health-water-food nexus**. This metabolic rift has remained hidden and unsolved for centuries due to the cheap availability of industrial synthetic fertilizers, but **it comes to the fore with the phasing out of the fossil fuels era.** How can **composting** (including vermiculture) contribute to tackling these sustainability challenges and enhance circularity in the food system and beyond?	*Enric Tello (UB)* *Viktor Mihucz (ELTE)* *Roland Thaler (UM)* *Julia Tschersich (UU)*	*4* *(9:30-13:30)*
Antonina Torrents (UB) and **Xavier López** (Fundació Solidaritat UB), Innovative Multistage Constructed Wetland for Municipal Wastewater Treatment & Reuse for Agriculture in Senegal: Towards A Circular Bioeconomy	**Ongoing experiences in the Global South towards a more circular bioeconomy:** The small-scale innovative plants designed to recover water and nutrients from wastewater effluents	*Enric Tello (facilitator)*	*1,5* *15:00-16:30*

Readings & links of the day:

The same as on Tuesday

Thursday Activity (16/06/2022)	**Content**		**No teaching**
Teamwork/individual self-study on the unsolved problem of P and N recovery from wastewater flows and sludges in Barcelona, Budapest, Montpellier and Utrecht	**To realize and elaborate on the roles**, capacities, limits and trade-offs **of the different actors involved in addressing and solving this big metabolic rift**	*Self-organized by students in each university*	*9:00-13:00*

Separated UB, ELTE, UM, UU Teamwork through self-organized online meetings to prepare Field trip 4 presentations to the **collective sharing session on Friday** (*each university team must choose 2-3 rotating students as presenters to the next sharing session that will be assessed*) + individual self-study & e-portfolio reflections.	Apply theories of AGFS change and AE transition to the information gathered in the field trips, to **elaborate presentations** with different examples	*Self-organized by students in each university*	*14:00-17:00*

Readings & links of the day:

The same as on Tuesday

Friday Activity (17/06/2022)	**Content**		**timetable**
Collective sharing session of Field trips 4 results on the unsolved problems of P and N recovery from organic municipal waste and wastewater flows and sludges by the 2-3 rotating presenters. These 15' presentations + debates will be peer assessed, and feedback will be provided to the presenters by the module coordinator	**Basic learnings of Field trips 4 to consider the barriers and opportunities to advance towards a more circular Bioeconomy** in agroecology territories Barcelona, Budapest, Montpellier, and Utrecht	***Enric Tello*** *(facilitator)*	*2,5 (10:00-12:30 with a break)*
Team challenge groups work: incorporating the new learnings of the last week to the specific concept maps of challenge groups + Wrap Up of the week & instructions or information for the next, especially those related to the challenge reports that will be delivered next Friday	**Self-organized teamwork** by the challenge groups in the hybrid classrooms to incorporate new learnings to challenge-specific concept maps and forthcoming reports	*(students alone)*	*2,5 (14:00-16:30)*
Individual filling of the e-portfolio with the reflections on general concept maps			

Readings & links of the day:

The same as on Monday and Tuesday

Module 3 detailed description and timetable: Sixth Week

W18 Integrated agri-food system transformations in An Uncertain Future (20-23/06/2022; Friday 24/06 is holiday)

Monday Activity (20/06/2022)	**Content**	**teachers**	**timetable**
Lecture by Roc Padró (CADS) and Enric Tello (UB) on concepts, methods, and policy-making tools to design desirable and feasible food futures of AE transition towards sustainable AGFS	**Exploration of types of agroecology transitions and food system futures** introducing methods for scenario building and pathways, including their **application to develop new policies, multi-actor governance innovations and citizen initiatives at different scales**	***Enric Tello (UB) + Roc Padró (CADS)***	*1,5 (10:00-11:30)*
Teamwork by challenge groups: incorporating to concept maps the exploration of AGFS futures through different possible paths of scaling up best agricultural and dietary practices into integrated, bio-economically circular AE territories, and finishing them	Based on literature provided, lectures, and field trips, **finish the final version of the concept map of each challenge group on AGFS transformation**, setting an internal distribution of tasks and prepare the flash presentation of the evening (5')	***(students alone)***	*1,5 (10:00-13:00)*
Presentations in the hybrid classrooms of the collective, challenge-specific concept mapping elaborated by each group (, assignment preparation, and project work)	**Flash talks of 5` by pairs of challenges to present final concept maps** followed by a short critical collective debate on each of them	***Enric Tello*** *(debate facilitator)*	*2 (14:00-16:00)*

Readings & links of the day:

Padró, R., Tello, E., Marco, I., Olarieta, J. R., Grasa, M. M., Font, C. (2020). Modelling the scaling up of sustainable farming into Agroecology Territories: Potentials and bottlenecks at the landscape level in a Mediterranean case study. *Journal of Cleaner Production,* 275, 124043. https://doi.org/10.1016/j.jclepro.2020.124043

Poux, X., Aubert, P.-M. (2018). An agroecological Europe in 2050: multifunctional agriculture for healthy eating. Findings from the Ten Years For Agroecology (TYFA) modelling exercise. Paris: *Iddri-AScA, Study N°09/18* (Open Access, 74 p.). https://www.iddri.org/en/publications-and-events/study/agroecological-europe-2050-multifunctional-agriculture-healthy-eating

European Commission. *Farm to Fork strategy for a fair, healthy and environmentally-friendly food system*: https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

Declaration of The EU's Assembly of Regional and Local Representatives on Agroecology Transition: https://cor.europa.eu/EN/our-work/Pages/OpinionTimeline.aspx?opId=CDR-3137-2020

Tuesday Activity (21/06/2022)	**Content**		**No teaching**
Team/individual reading work to assimilate new readings and start writing the final reports of challenge groups according to the internal distribution of tasks	**Self-study, and writing** final reports of challenge groups according to the internal distribution of tasks	*Self-organized by challenge groups*	
Individual filling of the e-portfolio with the final general concept map on AGFS transformation towards sustainability, which will be assessed			

Readings & links of the day:

Bertoni, D., Aletti, G., Cavicchioli , D., Micheletti, A., Pretolani, R. (2021). Estimating the CAP greening effect by machine learning techniques: A big data ex post analysis. *Environmental Science & Policy*, 119, 44-53. https://doi.org/10.1016/j.envsci.2021.01.008

Davies, A. R. (2020). Toward a Sustainable Food System for the European Union: Insights from the Social Sciences. *One Earth*, 3(1), 27–31. https://doi.org/10.1016/j.oneear.2020.06.008

IPES-Food & ETC Group (2021). *A Long Food Movement: Transforming food systems by 2045*. http://www.ipes-food.org/pages/LongFoodMovement

Jackson, P., Rivera-Ferre, M.G., Candel, J., Davies, A., Derani, C., de Vries, H., Dragović-Uzelac, V., Hoel, A. H., Holm, L., Mathijs, E., Morone, P., Penker, M., Śpiewak, R., Termeer, K., Thøgersen, J. (2021). Food as a commodity, human right or common good. *Nature Food*, 2, 132–134. https://doi.org/10.1038/s43016-021-00245-5

McKeon, N. (2017). Are Equity and Sustainability a Likely Outcome When Foxes and Chickens Share the Same Coop? Critiquing the Concept of Multistakeholder Governance of Food Security. *Globalizations*, 14(3), 379-398. https://doi.org/10.1080/14747731.2017.1286168

Springmann, Freund, F. (2022). Options for reforming agricultural subsidies from health, climate, and economic perspectives. *Nature Communications*, 13, 82. https://doi.org/10.1038/s41467-021-27645-2 (Open Access, 7 p.).

Webinar on the Right to Food in Europe, co-organised by University of Barcelona and the Daniel and Nina Carasso Foundation: https://youtu.be/WKpf2-kQHYM

Wednesday Activity (22/06/2022)	**Content**	**teachers**	**timetable**
Lecture by Aniek Hebinck on "Critical foresight analyses to explore pathways of agri-food system change with an emphasis on justice and equity"	**Integrated food policies and interventions**, **highlight of interdependencies**. Exploration of different forms of collaboration, partnerships, policy assemblages and social networks.	**Aniek Hebinck** *+ Enric Tello (facilitator)*	*1,5 (10:00-11:30)*
Teamwork by challenge groups to advance in the writing of final reports and presentations by each challenge group	Advance in **the final report of each challenge group on AGFS transformation,** and prepare doubts and questions for the sharing session of the evening	*Enric Tello (facilitator)*	*1,5 (10:00-13:00)*
Sharing session to present and debate doubts & questions concerning the writing and presentations of final reports of each challenge group	**Flash talks of 5` by pairs of challenges to present final concept maps** followed by a short critical collective debate on each of them	*Enric Tello* ***+*** *Tutors of student-based challenges*	*1 (14:00-15:00)*
Teamwork by challenge groups to end the third part on solutions of the final reports of challenge groups (which will be sent and assessed) + advance in the writing of final reports and presentations by each challenge group	Advance in **the final report of each challenge group on AGFS transformation,** and prepare doubts and questions for the sharing session of the evening	*Enric Tello (facilitator)*	*2 (15:00-17:00)*

Readings & links of the day:

The same as on Monday and Tuesday plus:

Hebinck, A., Klerkx, L., Elzen, E., Kristiaan, Kok, K.P.W., Könige, B., Schillerg, K., Tschersich, J., van Mierlo, B., Wirth, T. (2021). Beyond food for thought – Directing sustainability transitions research to address fundamental change in agri-food systems. *Environmental Innovation and Societal Transitions*, 41, 81-85. https://doi.org/10.1016/j.eist.2021.10.003

Monika Zurek, M., Hebinck, A., Selomane, O. (2021). Looking across diverse food system futures: Implications for climate change and the environment. *QOpen*, 1, 1-39. https://academic.oup.com/qopen/article/1/1/qoaa001/6094622?login=true

Thursday Activity (23/06/2022)	**Content**		**No teaching**

Team/individual reading work to assimilate new readings and start writing the reports to the Final Food Theme one-day symposium, by each challenge group according to the internal distribution of tasks	**Self-study, and writing** reports to the Final Food Theme one-day symposium, by challenge group according to the internal distribution of tasks	*Self-organized by challenge groups*	
Individual filling of the e-portfolio with the final personal reflection about the challenge addressed in her/his group, plus about her/his final general concept map on AGFS transformation towards sustainability. Here finishes the individual e-portfolio of module 3 that will be assessed as a deliverable			

Readings & links of the day:

The same as on Monday and Tuesday

Assessment table

Assessor (name): Enric Tello

General observation: The N° of teacher & peer assessments have been linked with **a** and **b** letters whenever necessary.

N°.	student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	20 May 2022, 16:00 – 24:00 CET	Individual assessment of the first version of general concept maps of agroecological transition (AET) & agri-food systems transformation (AFST)	Each student sends her/his current version to receive individual improvement feedback by the module coordinator	Teacher (E. Tello)	MLO 12.1→ PLO 1, 2, 3 MLO 12.5→ PLO 1, 2, 3 MLO 12.7→ PLO 1, 3
2a&b	30 May 2022, 10:00 - 24:00 CET	Team presentation by the 2-3 rotating students at each university (ELTE, UB, UM, UU) to the sharing session of Field trips 1 on different examples of governance roles & actors in AGFS transformation	The 15' presentations + debates will be peer assessed with a rubric, and by the module coordinator who will provide feedback to the presenters	Teacher (E. Tello) (2a) & peer assessment (2b)	MLO 12.1→ PLO 1, 2, 3 MLO 12.2→ PLO 1, 2 MLO 12.6→ PLO 1, 2, 5
3a&b	3 June 2022, 10:00 – 24:00 CET	Team presentation by the 2-3 rotating students at each university (ELTE, UB, UM, UU) to the sharing session of Field trips 2 on the role of public local/regional policies in AGFST	The 15' presentations + debates will be peer assessed with a rubric, and by the module coordinator who will provide feedback to the presenters	Teacher (E. Tello) (3a) & peer assessment (3b)	MLO 12.1→ PLO 1, 2, 3 MLO 12.3→ PLO 1, 2, 3 MLO 12.8→ PLO 6
4a&b	8 June 2022, 10:00 – 24:00 CET	Team presentation by the 2-3 rotating students at each university (ELTE, UB, UM, UU) to the sharing session of Field trips 3 on different social & environmental maps of food markets considering the roles of buyers and sellers	The 15' presentations + debates will be peer assessed with a rubric, and by the module coordinator who will provide feedback to the presenters	Teacher (E. Tello) (4a) & peer assessment (4b)	MLO 12.1→ PLO 1, 2, 3 MLO 12.3→ PLO 1, 2, 3 MLO 12.6→ PLO 1, 2, 5

5a&b	17 June 2022, 10:00 – 24:00 CET	Team presentation by the 2-3 rotating students at each university (ELTE, UB, UM, UU) to the sharing session of Field trips 4 on unsolved problems of P & N recovery from composted organic municipal waste and wastewater treatment plants, considering their role in AGFST	The 15' presentations + debates will be peer assessed with a rubric, and by the module coordinator who will provide feedback to the presenters	Teacher (E. Tello) (5a) & peer assessment (5b)	MLO 12.4→ PLO 6 MLO 12.5→ PLO 1, 2, 3 MLO 12.7→ PLO 1, 3
6	22 June 2022, 10:00-24:00	Final written report by each challenge group (including the third part on specific solutions and concept maps collectively produced as a Team)	Teacher assessment of the professional and personal development on written and conceptual mapping skills of the students	The 3 module coordinators	PLO6, PLO7, PLO8
7	23 June 2022, 10:00 – 24:00 CET	Personal weekly reflection along Food Module 3 in the e-portfolio (including the last version general concept map on AGFST individually produced)	Teacher assessment of the professional and personal development on written and conceptual mapping skills of the students	The 3 module coordinators	PLO6, PLO8
8 *(for all 3 Food modules)*	27 June 2022, 10:00 – 17:00 AM CET	Oral Final Presentations by each challenge group of 10'+5' (which will also serve as a pre-session of the POSTER presentations in the cross-thematic sharing sessions of 29/06)	Teacher assessment on the oral and digital presentation skills in each challenge group	The 3 module coordinators+ the juries of each aula	PLO2, PLO3, PLO5, PLO7, PLO9

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Flexible Phase (Semester 2)

Life and Health Modules

Universitat de Barcelona

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Utrecht University

Eötvös Loránd University | Budapest

Université de Montpellier

CHARME-EU
MASTER IN GLOBAL CHALLENGES
PHASE 2 - LIFE & HEALTH TRACK – MODULE 1

Student Module Descriptor
Last updated: 07 03 2022

Module details
Module title: Modul 1 - Healthy Lives and Wellbeing

Module coordinator: Dr Avelina Tortosa, Universitat de Barcelona (atortosa@ub.edu)

Module co-coordinator: Dr Katalin Felvinczi, ELTE University (felvinczi.katalin@ppk.elte.hu)

Teachers:
Amanda Phelan – TCD
Avelina Tortosa – UB
Brice Magdalou - UM
Catherine Comiskey – TCD
Edit Sebestyén - ELTE
Eleanor Hollywood – TCD
Esteve Fernández - UB
Fina Martinez-Soler – UB
Jacqueline Whelan – TCD
Josep M Borràs - UB
Katalin Felvinczi – ELTE
Olatz Larrea – UB
Róbert Urbán - ELTE
Sonam Banka – TCD
Zsófia Kollányi ELTE

Start date – end date: 14 February 2022 – 25 March 2022

Module design and content
Module high-level learning aims:
During the module, students will gain knowledge of the concepts of healthy lifestyles and well-being: healthy living, health promotion, disease prevention and risk factors, and will be able to explain the value of inter/transdisciplinary perspectives on these concepts. In addition, students will gain knowledge of healthy lifestyles and well-being as a social phenomenon, the discourse on health and its social, economic, cultural and environmental determinants, and issues related to and arising from health inequalities. Finally, at the end of the module, students will identify the challenges of maintaining healthy lifestyles and well-being in a sustainable environment and develop and implement solutions to these challenges.

Module Content:
The 10-credit module is based on the basic pedagogical and teaching principles of CHARM-EU. Its content is based on the principles of inclusiveness.
The focus of the module will be on an interdisciplinary approach, while addressing issues related to health and well-being, including different lifestyles, ideas/perceptions of health of different social groups. Another important aspect to be supported is the high quality of complex interventions, including evidence-based practices, professional guidelines, etc. The UN SDGs are respected and promoted; the following are considered in more detail:

- Ensure healthy lives and promote well-being for all at all ages
- Achieve gender equality and empower all women and girls
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for al
- Ensure sustainable consumption and production patterns
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

The module will be implemented with the collaboration of five European Universities, students will be staying at 3 different venues during the 6-week module. The lectures and seminars, teamwork, project assignment related activities will be mostly implemented in the form and with the help of hybrid classrooms at the dedicated venues (Barcelona -UB; Budapest – ELTE; Dublin – TCD). The final week of the module will be implemented face – to – face, during which we will be using the short-term intensive blended mobility opportunities.

The main themes of the learning process are as follows:

- Getting to know each other
- History: health over time. Determinants of health
- Lifestyles - risk and protective factors - identification of the challenge (problem)
- State of the art - moving into the direction of complex interventions
- Quality interventions - the challenge of evaluation - behaviour modification
- Bridging the gap between theory and practice
- Be the broker of quality solutions -

During the module implementation, the students will be mainly working in their small groups organized according to the chosen problem (challenge) to be handled by a quality complex intervention. During action, they will make short, non-comprehensive presentations and one comprehensive, detailed one at the end of the 6 weeks period.

Connection with other phases and modules:
The module will rely on methodological and conceptual developments of the preparatory phase and will be closely connected to module 3 within the life and health track. At several points, interaction will be established with module 2: Health challenges and solutions.

Module Learning Outcomes

- MLO 9.1: Explain the most important concepts and theories of the study subject from a biological and medical perspectives. [PLO.3]
- MLO 9.2: Identify and analyse social, economic, cultural and environmental determinants of health and health inequalities. [PLO.1]
- MLO 9.3: Describe healthy lifestyles and their common risk factors and how they are influenced by a person's social and political identity such as gender, ethnicity, race, socio-economic class and religion. [PLO.1]
- MLO 9.4: Explain the most important concepts and theories on a life course approach to health while framing interventions. [PLO.3]
- MLO 9.5: Identify evidence-based practices in developing interventions aimed at improving individual and community health. [PLO.3]
- MLO 9.6: Explain different perspectives regarding sustainability in life and health and apply sustainable practices for healthy lifestyles and health promoting living- and working environments. [PLO.1]
- MLO 9.7: Analyse health status trends (e.g., life expectancy, avoidable mortality, etc.) and key public health issues (e.g., obesity, addictions, etc.) – under varying social, economic, and cultural dimensions. [PLO.1, PLO.3]
- MLO 9.8: Frame hypotheses based on scientific literature, execute methodologies, interpret results, draw conclusions and communicate results for addressing challenges in maintaining healthy lifestyles and wellbeing [PLO.2, PLO.3]
- MLO 9.9: Design solutions for maintaining healthy lifestyles in transdisciplinary collaboration with stakeholders from different domains, disciplines, and social groups. [PLO.2, PLO.5, PLO.6]
- MLO 9.10: Explain the role of communication, including (mass) media, in improving healthy lifestyles and wellbeing. [PLO.3]

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	**Explanation**
Lectures/workshops	The main content related elements will be presented in the format of lectures and workshops, most of the lectures will be followed by group discussions moderated either by the teacher, or by local assistance
Teamwork	Students will be basically working in small groups. These groups will be organised alongside a chosen health and/or social problem to be tackled by an intervention which will be developed during the module
Self-study	It will happen mostly in the form of guided reading. The readings will be connected to the lectures and to the workshops/teamwork. The readings will be discussed within the groups with the help of either the teacher or the assistant teacher.
Project work/assignment preparation	Students are supposed to produce different types of presentations related to the chosen problem and a final presentation will also be organised during the final week of the module.

Meet people with lived experiences/with experts	During the module the different lifestyles will be in the centre; people with lived experiences can be interviewed and specific issues will be presented by expert specialists of the concrete problem/issue.
Field trip	To gain first-hand experience on challenge-based projects/real interventions students will get the opportunity to visit an ongoing complex intervention
World cafe	It will be organised across modules and phases to ensure the implementation and understanding of transdisciplinary approach.
Blended intensive programme	The final week of the module is planned to be organised in the format of a blended intensive programme. The students will be staying at the same venue (Barcelona) where they will get prepared for the final comprehensive presentation. Teachers from Module 1, representatives of the 2nd module, and perhaps external stakeholders together will participate in the final comprehensive presentation of the groups, so this final presentation will look like a mini conference.

Study materials

These materials will be shared in the Virtual Learning Environment: TEAMS and/or MOODLE

Mobility activity in the module

Students will be in phase mobility during the semester, one short/blended intensive mobility programme is planned to be organised to Barcelona.

Week	Date	Activity type	Name of the activity	Activity objectives and description	Assignment	Timing	Teacher
Week 1	**14.02.2022 Monday**	Information presentation	Introduction to Phase 2	An introduction will be given to Phase 2 modules		1000h-1300h & 1400h-1700h (CET)	
	15.02.2022 Tuesday	**NO CLASSROOM ACTIVITIES**					
GETTING TO KNOW EACH OTHER							
Week 1	**16.02.2022 Wednesday**	Information presentation - Q&A	Introduction to the Module	Welcome of the students Introduction of Module 1		1000h-1300h (CET)	Katalin Felvinczi Avelina Tortosa Catherine Comiskey Niels Bovenschen Quique Bassat Zsófia Kollányi Éva Orosz
	16.02.2022 Wednesday	Group activity	Introductions	Ice breaking activity to help students begin the process of getting to know each other better and facilitating the formation of the group working together intensively during the 6 weeks		1400h-1700h (CET)	Fina Martínez-Soler Edit Sebestyén Sonam Banka
DETERMINANTS OF AND HISTORICAL PERSPECTIVES ON HEALTH, HEALTH ISSUES							
Week 1	**17.02.2022 Thursday**	Lecture	Lecture 1 on Public health	Providing key concepts of Public health		1000h-1045h (CET)	Róbert Urbán

	17.02.2022 Thursday	Lecture	Lecture 2 on History: health over time	Presenting the Evolution of the definition of health over time		1045h-1130h (CET)	Josep Maria Borras
	17.02.2022 Thursday	Workshop	Workshop 1 on Health over time	Providing a structured set of facilitated activities to explore the health field		1130h-1300h (CET)	Josep Maria Borras
	17.02.2022 Thursday	Lecture	Lecture 3 on Biological determinants of health	Providing an overview on the Biological determinants of health		1400h-1445h (CET)	Avelina Tortosa
	17.02.2022 Thursday	Workshop	Workshop 2 on Biological determinants of health	Providing a structured set of facilitated activities to explore genetics on health in real life		1445h-1615h (CET)	Avelina Tortosa
	17.02.2022 Thursday	Lecture	Lecture 4 on Social/economic determinants of health	Providing an overview on the Social and economic determinants of health and lifestyle related issues		1615h-1700h (CET)	Zsófia Kollányi
		Self-studying	Week 1 guided reading				
	18.02.2022 Friday	**NO CLASSROOM ACTIVITIES**					
Week 2	**21.02.2022 Monday**	Workshop	Workshop 3 on Social/economic determinants of health	Providing a structured set of facilitated activities to explore the determinants of health		1000h-1045h (CET)	Zsófia Kollányi
	21.02.2022 Monday	Lecture	Lecture 5 on Lifestyle: lived experiences	Providing an overview of the different approaches to assess individual well-being and social welfare		1045h-1215h (CET)	Brice Magdalou
	21.02.2022 Monday	Lecture	Lecture 6 on Ethnicity and religion	Providing an overview on Ethnicity, religion, and related health issues		1215h-1300h (CET)	Jacqueline Whelan

21.02.2022 Monday	Lecture	Lecture 7 on Gender and related issues (LGBTQ+……)	Providing information on Gender and related issues (LGBTQ+……)		1400h-1445h (CET)	Robert Urbán
21.02.2022 Monday	Lecture	Lecture 8 on Aging and health: young people	Providing information on the Influence of aging on health and wellbeing - Young people		1445h-1530h (CET)	Eleanor Hollywood
21.02.2022 Monday	Lecture	Lecture 9 on Aging and health: older age	Providing information on the Influence of aging on health and wellbeing - Elderly population		1530h-1615h (CET)	Amanda Phelan
21.02.2022 Monday	Lecture	Lecture 10 on Interview technique	Providing information on the Interview as a self-report technique in research		1615h-1700h (CET)	Felvinczi Katalin
22.02.2022 Tuesday	NO CLASSROOM ACTIVITIES Work in pairs	Field practice 1	Students develop an interview guide for an interview with a designated representative of the chosen social group. Students identify different social (e.g., family with school-aged children; older people; young, single persons; OR vulnerable groups, e.g., immigrants, Orthodox Jews, drug addicts, people living in a segregated area) Students describe one day of a person from the selected group, when he/she must wake up, what is for breakfast, where and what is the work he/she is or they are doing, etc. and try to identify the healthy and the less healthy			Independent work Local teachers will be available on demand on TEAMS Katalin Felvinczi 1200h-1400h (CET) Sonam Banka & Fina Martínez-Soler between 1000h-1200h (CET)

				elements of his/her/their life. (See Field practice 2)			
	23.02.2022 Wednesday	NO CLASSROOM ACTIVITIES					
LIFESTYLES - RISK AND PROTECTIVE FACTORS - IDENTIFICATION OF THE CHALLANGE (PROBLEM)							
Week 2	**24.02.2022 Thursday**	Group presentation	Group presentation 1 on Interview guide	The 6 pairs present their interview guide The interview guides will be discussed in a plenary format The interview guides will also be submitted in writing as an assignment	**1/8 Interview guide (written) (work in pairs)**	1000h-1130h (CET)	Katalin Felvinczi Edit Sebestyén Avelina Tortosa Fina Martínez Catherine Comiskey Sonam Banka
	24.02.2022 Thursday	Work in pairs	Field practice 2	People representing selected social groups will be interviewed (preferably online using Teams) by the students on their daily activities (based on the interview guide). The interviews will be analysed, and the findings shared in plenary the following day.		1130h-1300h & 1400h-1700h (CET)	Independent work
STATE OF THE ART - MOVING TO COMPLEX INTERVENTIONS							
Week 2	**25.02.2022 Friday**	Group presentation	Group presentation 2 on field practice experiences	Students will work in pairs, 6 interviews will be presented and discussed.	**2/8 Report from the interview (oral) (work in pairs)**	1000h-1215h (CET)	Katalin Felvinczi Edit Sebestyén Avelina Tortosa Fina Martínez Catherine Comiskey Sonam Banka

	25.02.2022 Friday	Lecture	Lecture 11 on Identifying a problem area in relation to the SDGs and how to identify a health or social problem to address by an intervention	The presentation will give an overview about the methodology and importance of creating a problem tree as a key element in planning an intervention.		1215h-1300h & 1400h-1445h (CET)	Katalin Felvinczi
	25.02.2022 Friday	Project work	Project work 1 on Problem identification	Student groups develop a problem tree on the problem they have identified. The three problem trees will be presented in plenary next week and discussed with the whole group.		1445h1700h (CET)	Independent work Edit Sebestyén will be available on demand on TEAMS for questions
		Self-studying	Week 2 guided reading				
Week 3	**28.02.2022 Monday**	Project presentation	Project presentation 1 on the defined problem	The project groups present their defined problem to the plenary	**3/8 Problem tree (oral) (work in project groups)**	1000h-1130h (CET)	Katalin Felvinczi Avelina Tortosa Catherine Comiskey Edit Sebestyén Fina Martínez Sonam Banka
	28.02.2022 Monday	Lecture	Lecture 12 on Foundations of health promotion	Providing information on the Foundations on health promotion		1130h-1215h (CET)	Edit Sebestyén
	28.02.2022 Monday	Lecture	Lecture 13 on Prevention science	Providing information on Prevention science		1215h-1300h (CET)	Edit Sebestyén
	28.02.2022 Monday	Lecture	Lecture 14 on Basic epidemiology	Providing information on Basic epidemiological concepts		1400h-1445h (CET)	Esteve Fernandez

28.02.2022 Monday	Lecture	Lecture 15 on Needs assessment	Providing information on the importance and techniques of Needs assessment when we are developing complex interventions		1445h-1530h (CET)	Katalin Felvinczi
28.02.2022 Monday	Project work	Project work 2 on Needs assessment	Students work on a detailed needs assessment plan related to their chosen problem.		1530h-1700h (CET)	Independent work Katalin Felvinczi will be available on demand on TEAMS for questions
01.03.2022 Tuesday	NO CLASSROOM ACTIVITIES Project work	Project work 3 Needs assessment plan	Students continue to work on their needs assessment plan related to the chosen problem			Independent work
02.03.2022 Wednesday	Lecture	Lecture 16 on Evaluation of complex interventions	Providing information about the trends and difficulties related to the Evaluation of complex interventions targeting behaviour change		1000h-1115h (CET)	Katalin Felvinczi
02.03.2022 Wednesday	Lecture	Lecture 17 on Evidence based interventions	Providing information on evidence-based interventions and available databases (registries) on evidence-based interventions		1130h-1300h (CET) (10 min break is included)	Catherine Comiskey

	02.03.2022 Wednesday	Project presentation	Project presentation 2 on Needs assessment plan	The 3 groups' needs assessment plans are presented in plenary, with each group giving feedback on the product	**4/8 Needs assessment plan (oral) (work in project groups)**	1400h - 1700h (CET) (2*15min break included)	Katalin Felvinczi Avelina Tortosa Catherine Comiskey Sonam Banka Edit Sebestyén Fina Martínez
	03.03.2022 Thursday	NO CLASSROOM ACTIVITIES Field visit	Field visit 1 and discussion	Students visit an ongoing complex intervention or service organised locally. Before going out into the field, students are given criteria for observation and for summarising their experiences.		1000h-1300h & 1400h-1700h (CET)	Katalin Felvinczi Avelina Tortosa Catherine Comiskey Sonam Banka
		Self-studying	Week 3 guided reading				
	04.03.2022 Friday	**NO CLASSROOM ACTIVITIES**					
				Written case study to be uploaded to the Scorion Individual work	**5/8 Case study (written) (individual)**		Changed deadline: 24 March 2022 20pm
QUALITY INTERVENTIONS - THE CHALLENGE OF EVALUATION - BEHAVIOUR MODIFICATION							
Week 4	**07.03.2022 Monday**	Lecture	Lecture 18 on Models of behaviour change and the role of theory in formulating an intervention	Providing information on the different Models of health behaviour, models of behaviour change		1000h-1115h (CET) (10 min break is included)	Robert Urbán

07.03.2022 Monday	Workshop	Workshop 4 on models of behaviour change and their relevance to health promotion interventions in general and the identified problem	Providing a structured set of facilitated activities on how to translate the components of health behaviour change theories into actions.		1130h-1300h (CET) (10 min break is included)	Robert Urbán
07.03.2022 Monday	Lecture	Lecture 19 Intervention planning	Providing information on the main elements of intervention planning		1400h-1445h (CET)	Katalin Felvinczi
07.03.2022 Monday	Project work	Project work 4 on Planning an intervention	Students start planning the content of the planned intervention		1500h-1700h (CET)	Independent work Edit Sebestyén will be available on demand on TEAMS for questions
08.03.2022 Tuesday						
09.03.2022 Wednesday	Project work	Project work 5 on Planning intervention	Project work continued on the content of the intervention		1000h-1300h & 1400h-1515h (CET)	Independent work Local teachers, Edit Sebestyén, Avelina Tortosa, Catherine Comiskey or Sonam Banka will be available on demand on TEAMS for questions from 1000h-1300h (CET)

09.03.2022 Wednesday	Workshop	Workshop 5 on Evaluation questions and objectives	Providing a structured set of facilitated activities to practice in groupwork how to formulate evaluation questions, how to operationalise the general and specific objectives of an intervention.		1530h-1700h (CET) (10 min break is included)	Katalin Felvinczi Edit Sebestyén
10.03.2022 Thursday	Project work	Project work 6 on the planned intervention including evaluation plan	Students work on their draft intervention design with success criteria		1000h-1300h & (CET) 1400h-1530h (CET)	Independent work Katalin Felvinczi will be available on demand on TEAMS for questions
The test will be available for 24 hours from 10 March 2022 1530h (CET) till 11 March 1530h (CET) on Moddle.	NO CLASSROOM ACTIVITIES			**6/8 Mid-term knowledge test (on Moodle) (individual)**		
	Self-studying	Week 4 Guided reading				

Week 5	**14.03.2022 Monday**	**BANK HOLIDAY**					
	15.03.2022 Tuesday	**BANK HOLIDAY**					
BRIDGING THE GAP BETWEEN THEORY AND PRACTICE							
Week 5	**16.03.2022 Wednesday**	Project presentation	Project presentation 3 on draft intervention plan (including draft evaluation plan)	Students' presentation of the **draft** intervention design with success criteria		1000h-1300h (CET) (2*10 min break is included)	Katalin Felvinczi Edit Sebestyén Avelina Tortosa Fina Martínez Catherine Comiskey Sonam Banka
	16.03.2022 Wednesday	Lecture	Lecture 20 on Intervention planning	The presentation will address further issues related to intervention design. In the following days, students will work independently to finalise their own intervention plan.		1400h-1515h (CET) (10 min break is included)	Katalin Felvinczi
	16.03.2022 Wednesday	Interactive workshop Q&A	Interactive workshop 1 for Q&A	Q&A related to final intervention planning activities		1530h-1700h (CET) (10 min break is included)	Katalin Felvinczi Edit Sebestyén
	17.03.2022	Self -studying	Week 5 guided reading				
	18.03.2022 Friday	**TRAVEL/BANK HOLIDAY IN IRELAND**					

BE THE BROKER OF QUALITY SOLUTIONS - Blended intensive programme at UB, all L&H students arrive and settle if all the students are willing to travel the meetings will be held in person							
Week 6	**21.03.2022 Monday**	Information presentation - Q&A	Introduction	The students will get informed about the detailed programme of the week, including the technical details		1000h-1030h	Avelina Tortosa
	21.03.2022 Monday	Lecture	Lecture 21 on Communicating about an intervention	Interactive lecture on How to communicate the goodness of a new intervention		1045h-1215h (10 min break is included)	Olatz Larrea
	21.03.2022 Monday	Project work	Project work 7 on Communication plan	Students are working in their project teams. The groups will work on their communication plan related to their intervention		1230h-1300h & 1400h-1500h	Group work with the lead of Olatz Larrea who will be with the groups in person
	22.03.2022 Tuesday	Project presentation	Project presentation 4 on Communication plan	Students present the draft communication plan (message, slogan, allies, etc)	**7/8 Draft communication plan (oral) (work in project group)**	1000h-1130h (10 min break is included)	Olatz Larrea Katalin Felvinczi Robert Urban Edit Sebestyén Catherine Comiskey Sonam Banka Avelina Tortosa
	22.03.2022 Tuesday	Lecture	Lecture 22 on Finalising the intervention plan	Students get information on how to finalise the intervention plan		1145-1300h (10 min break is included)	Katalin Felvinczi

22.03.2022 Tuesday	Project work	Project work 8 on assignment preparation	Finalising the team presentations		1400h-1500h	Independent work Katalin Felvinczi will be available for questions

	23.03.2022 Wednesday	Project presentation	Final project presentation	The students present their intervention plan - problem tree - needs assessment plan - intervention design - activities - evaluation plan - communication plan	**8/8 Final intervention plan (oral) (work in project group)**	1000h-1300h & 1400h-1700h (2*10 min break is included both morning and afternoon)	All teaching staff and stakeholders
	24-25. 03.2022 Thursday and Friday	**End of Module 1/Start of Module 2**					

Assessment table (working in process)

The performance and personal development of the students will be assessed in relation to the different envisaged outputs. The detailed information on the assessment activities will be provided during the first introductory days of the flexible phase.

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	Week 2 2022-02-24 2000h (CET)	Interview guide	written (in pairs)	Teacher	PLO1, PLO5
2	Week 2 2022-02-25 1000h- 1215h (CET)	Report on the interview	oral presentation (in pairs)	Teacher	PLO1, PLO2, PLO5
3	Week 2 2022–02-28 1000h – 1130h (CET)	Problem tree	oral presentation (in project group)	Teacher	PLO2
4	Week 3 2022-03-02 1400h – 1700h (CET)	Needs assessment plan	oral presentation (in project group)	Teacher, no peer assessment!*	PLO2, PLO3, PLO4
5	Week 3 2022-03-04 2000h (CET)	Case study	written (individual)	Teacher	PLO2, PLO5, PLO6
6	Week 4 The test will be available for 24 hours from 10 March 2022 1530h (CET) till	Comprehensive knowledge test online	Individual assessment	Teacher	PLO5

	11 March 1530h (CET).				
7	Week 6 2022-03-22 1000h–1300h (CET)	Draft communication plan	group presentation	Teacher and external stakeholders	PLO1, PLO3, PLO4
8	Week 6 2022-03-23 10:00h-13.00h & 1300h-1700h (CET)	Final intervention plan	group presentation	Teaching staff and stakeholders and peers by local groups	PLO4, PLO5, PLO6

* Please note: Peer assessment will be done only for Assignment 8. However, the latest information from the technical support team is that students cannot delete the imported, unnecessary forms in Scorion yet. We are waiting for further instructions.

~~If a form is not necessary, the student can delete it by going to the form and click on the 3 dots. A dropdown menu appears, and students can click on 'delete form' and the form is deleted from their formset. But this requires an action of every student.~~

Inclusiveness
Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Reading list

Available on Moodle

https://innovate.learning.uu.nl/pluginfile.php/4582/mod_resource/content/3/CHARM_EU_Phase2_Module1_Reading%20list__17022022.pdf

Student Module Descriptors

Module details

Module title:	Health Challenges & Solutions
Module coordinators:	1) Prof. dr. Niels Bovenschen n.bovenschen@umcutrecht.nl Utrecht University 2) Prof. dr. Quique Bassat quique.bassat@isglobal.org University of Barcelona
Teachers	See table
Start date – end date:	24 March – 13 May
Assessments:	7

Module design and content

General concept

1) One grand-challenge/problem space in health (high-level) is posed at the start of the module to all students (plenary): "How should the world deal with future pandemics?" (2021-2022 edition). Topic can change yearly.
2) Students form (disciplinary) subgroups to tackle this challenge/problem space, from different disciplinary perspectives. They compose sub-questions/sub-challenges and write proposals on how to research/address the sub-challenges.
3) Each group (2-5 students) works on the same problem space, approaching the single health challenge through different perspectives/disciplines, by working at a different location (disciplinary hubs/innovation spaces). Multiple Hubs are implemented at different universities. In the 2022 edition, HUBs include Universities of Barcelona, Dublin, Budapest.
4) Hubs are spiders in the web at university faculties with short lines to local researchers and other stakeholders.
5) Students work physically in their hub and connect online to other hubs. As such a HUB-network is created to foster transdisciplinarity.
6) All students have plenary workshops, lectures on skills, and work meetings during the module and work together on a final end product (final presentation, report and symposium), also in a final symposium with stakeholders.
7) With this year's topic ("How should the world deal with future pandemics?"), we will use COVID-19 (and other pandemics or endemic diseases) to construct our common module knowledge on how to answer this question. However, this won't be a COVID-19 module, it will be a module where we learn about methods, approaches and perspectives related to answering our research question. COVID-19 will thus be the module's McGuffin* to achieve our learning objectives.

*Note: In fiction, a MacGuffin (sometimes McGuffin) is an object, device, or event that is necessary to the plot and the motivation of the characters, but insignificant, unimportant, or irrelevant in itself.

Module high-level learning aims

- To provide the students with the knowledge and the skills to develop sustainable interventions from fundamental science discoveries to clinical and societal issues to address Global Health challenges. 'From bench to bedside to society and back'.
- To translate into innovative solutions for a specific challenge towards achieving health benefit for all.

Connection with other phases and modules:

This module is positioned in the middle of the Life & Health track.

Module Learning Outcomes

On successful completion of the module students should be able to:

MLO 8.1: Explain the most important concepts and theories of the study subject, including the pathophysiology, prevention, diagnosis and treatment and management of the most prevalent (higher burden of disease and mortality) communicable (infectious) and non-communicable diseases, as well as their risk factors. (PLO 3)

MLO 8.2: Explain the importance of globalisation and environmental degradation in the emergence of pathologies through linking ecology, health problems, and urban health. (PLO 1, 3)

MLO 8.3: Analyse the principles of evidence-based translational medicine from bench to bedside and society, and back. (PLO 3)

MLO 8.4: Critically discuss and utilise new technological developments and systems approaches in the long-term interest of health and well-being of societies and ecosystems. (PLO 3, 4)

MLO 8.5: Demonstrate comprehensive and critical awareness of health challenges and their interconnection with One Health and Environmental & Planetary Health, including ethical approaches, personalized disease management, and societal needs. (PLO 1, 2)

MLO 8.6: Design solutions to health challenges in transdisciplinary collaboration with stakeholders from different domains, disciplines, and social groups (e.g. scientist- medical specialist-patient-society-industry-policymakers). (PLO 2, 5, 6)

MLO 8.7: Frame hypotheses/challenges based on current literature and cutting-edge data to identify the appropriate methodology, execute the proposed work in the field, interpret results and draw conclusions and communicate results to stakeholders and society (both written and orally). (PLO 2, 3)

MLO 8.8: Analyse and critically discuss the concept of sustainability in addressing health problems, taking account of ethical considerations around (the quality of) human and non- human life from different social, economic, cultural and environmental perspectives. (PLO 1)

MLO 8.9: Develop and translate cross-sectoral, context-specific strategies/interventions back and forth within the continuum of fundamental science to pharmaceutical industry, policymaking, and social, economic, cultural, and environmental determinants of health problems. (PLO 2, 6)

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Journal club	Students will read 1 article out of their comfort zone and pitch/present this to the group, followed by a brief transdisciplinary group discussion with guidance from experts.
Meet the expert	Experts are available physically and online for questions of the students during specific timeslots. The hub-supervisors are the primary question points that can redirect to other (local) experts and stakeholders.
Project work	Students work self-steering in subgroups, do hands-on research and work on their contribution to the final report.
Lecture	1)Lecturer explains general topic, containing crucial, basic, general knowledge about the challenge/problem space. Will be plenary and online/hybrid. 2)Lectures on skills (how to make a good presentation/how to communicate with society). Will be plenary and online/hybrid.
Work meeting	Weekly meeting. Plenary (hybrid/online). Each hub subgroup presents their research progress to their peers and supervisors. Supervisors and peers provide feedback on the progress.
Workshop	Interactive session on a topic (plenary/hybrid) focusing on (transversal) skills in transdisciplinary research.
Coaching sessions	Weekly sessions. 1 coach per group (4 students). Evaluation of collaboration within the group + Students pose general 'problems'. Can be broad e.g. career development, professional development, cultural issues.

Study materials

These materials will be shared in the Virtual Learning Environment:

- Reader;
- Hand-outs;
- Literature;
- Links to relevant websites;
- recommended (optional) literature;
- Virtual learning environment (Moodle) – link

Mobility activity in the module

There is one long-term mobility for the whole theme Life & Health supporting the achievement of the module learning outcomes in a transnational and intercultural learning environment.

- At the start of the Theme Life and Health, students are divided over the 5 CHARM universities (Budapest, Barcelona, Utrecht, Montpellier and Dublin). Students choose a university to stay as a home-base. However, in the 2022 edition of the module, only Dublin, Barcelona and Budapest are physically involved, while Utrecht and Montpellier only deliver lecturers.
- Between modules 1 and 2 there will be a 1 week mobility to Barcelona. Here, module 1 is ended and module 2 will start with all students physically present.
- The module 2 Hubs are positioned within university faculties in the heart of ongoing research, researchers, and other stakeholders, with short lines.
- Hubs are inclusive, regardless of their (disciplinary) background or lived experiences.
- Detailed thematic foci and structure: Students form disciplinary sub teams and will collaborate both physically (within the hubs) as well as online (between the hubs) on the same transdisciplinary communal project.
- The Hub network facilitates transdisciplinary connections, e.g. during weekly work meetings, workshops, lectures, presentations and report writing.

Student Research Hubs

1) Barcelona HUB for Health Challenges & Solutions:

Our medicine and Global Health Hub based at the University of Barcelona, and in close collaboration with the Barcelona Institute for Global Health (ISGlobal) includes a multidisciplinary team with experience in addressing some of the world's greatest global health challenges, with a particular focus on equity and the most vulnerable populations in resource-constrained settings. This is a consolidated hub of excellence in research, with a working model based on the generation of scientific knowledge through Research, and its translation to policy change. Its ultimate goal is to help close the gaps in health disparities between and within different regions of the world. Within the module, we have chosen some supervisors that combine great expertise in infectious diseases and pandemics, including COVID-19. Their expertise is not only local, but importantly global, given their involvement in research on those topics in high, middle and low-income settings.

In this hub, students can become involved in (bio)medical and other kinds of research together with experienced global health researchers, in fields such as Infections and non-communicable diseases, immunology, public health and epidemiology, environmental health, medical anthropology, and health economics, among others. Given this wide array of expertise, students will be able to orient their projects to specific areas of interest, that may include, among others:

- Differential impact of the COVID-19 pandemic according to geographical context
- Impact of COVID-19 in other endemic infectious diseases
- Pandemic preparedness, and therapeutic and preventive strategies
- Diagnostic challenges within a pandemic
- The immunology of pandemic associated pathogens
- Socio-behavioural research I the context of a pandemic
- The indirect societal impacts of a pandemic
- Epidemiology and transmission of pandemic associated pathogens

Involved lecturers: Quique Bassat, Nuria Casamitjana, Álex Almuedo, Cristina Larrea, Carlota Dobaño

HUB Supervisor: Prof. dr. Quique Bassat (email: quique.bassat@isglobal.org).

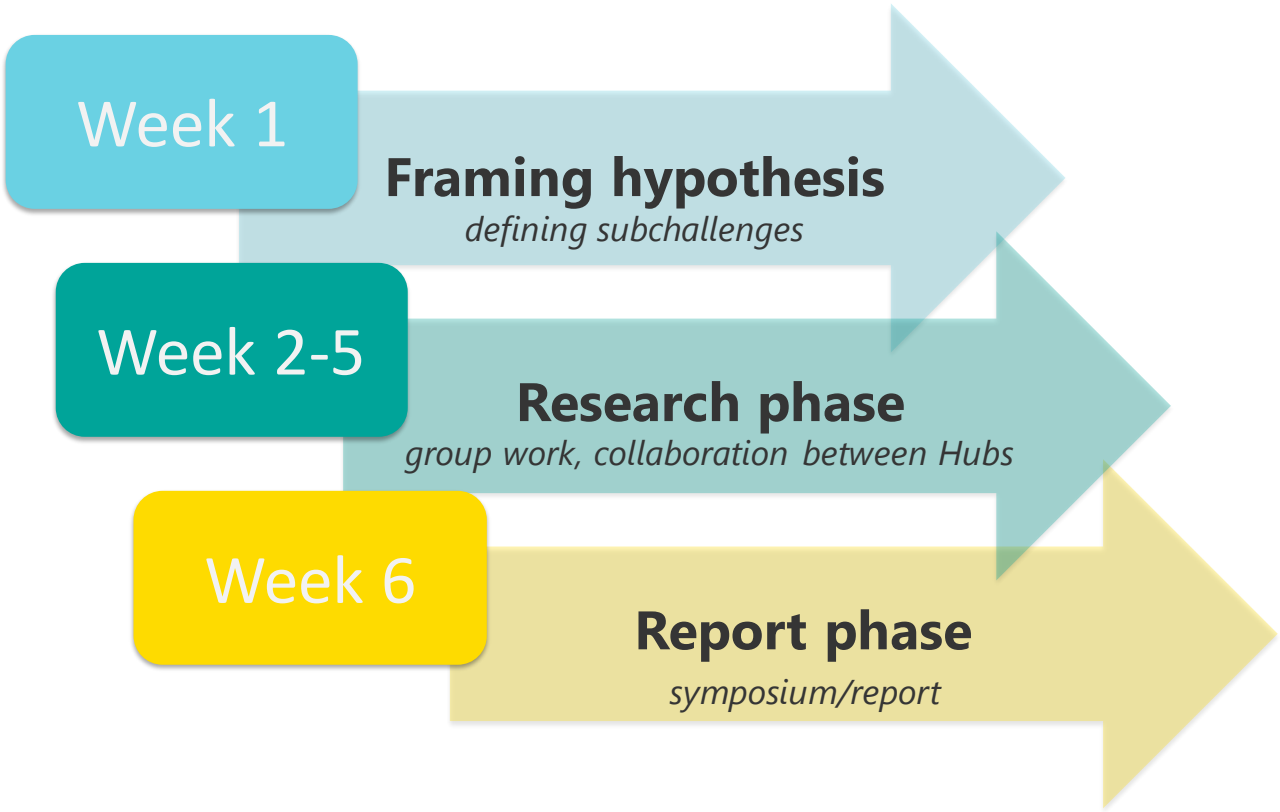
2) Budapest HUB for Health Challenges & Solutions:

This Stress Management Research Hub is passionate about the maintenance and improvement of mental wellbeing. We are located at the Institute of Psychology, Eötvös Loránd University, Budapest. Researchers of the Adaptation Research Group (as hosts of this hub) have expertise in applied and experimental psychology, cognitive sciences and data science. Our researchers conduct basic and applied research to understand the factors that influence the effectiveness of delivered psychological interventions. The research hub is involved in the development of online deliverable solutions to alleviate anxiety. This research includes data-driven insights to understanding emotions, especially anxiety through investigating the objective biofeedback of arousal. The hub is equipped with state of the art devices with arousal sensors and a vast amount of experience in analyzing electrodermal activity signals. Close collaboration with Obimon Systems Ltd. allows experimentation with a prototype software enabling effortful emotional regulation based on real-time psychophysiological feedback from emotional arousal. We also investigate the psychophysiological correlates of traumatic pandemic related memories and working on the development of solutions to neutralize negative pandemic related memories. After acquiring basic knowledge in stress management, students may join and observe ongoing research in any of the mentioned areas and have an opportunity to liaise with practicing psychologists to better understand the impact of the pandemic on mental health. Students will be encouraged to develop their own research question to investigate pandemic-related mental health issues. Students may form groups and conduct a group project or work individually on their chosen topic with the guidance of experts in their chosen field. Researchers and tutors of this hub include: Krisztian Kasos (supervisor), Anna Szekely (head of the Adaptation Research Group), (Luca Csirmaz (PhD student), Robert Bizonych (PhD student) and Fanni Vikor (research assistant). **HUB Supervisor: Dr. Krisztian Kasos (email: kasos.krisztian@ppk.elte.hu).**

3) Dublin HUB for Health Challenges & Solutions:

The Dublin Hub is called The Population Health and Behaviour Research Hub and is based in Trinity College Dublin. A future pandemic may require a faster more data-driven pan-European response across a complex group of interdisciplinary and multidisciplinary health care systems and the hub will provide expert support on understanding and identifying gaps in the European health systems and their response to future pandemics. The hub is staffed by experienced researchers in; Epidemiology, data analysis and statistical modelling: Addiction and substance use: Treatment of mental health disorders, applied psychology and mental health nursing: intellectual disability nursing: Social Psychology; stress management and trauma: Global Health policy analysis: Child Mental Health, children's nursing, and child centered care. The current pandemic and the severe impact it has had on all aspects of life, health and wellbeing has revealed the unpreparedness of world health care systems to respond. Therefore, students will be supported to explore new and innovate ways for a Pan-European response to mitigate the damaging effects of a future pandemic. Researchers and tutors of this hub will include: Prof. Catherine Comiskey, Healthcare statistics; Dr Jan De Vries, Applied Psychology: Dr Ann Nolan, Global Health: Dr Eleanor Hollywood, Children's Nursing: Dr Sonam Banka, Population Health and Psychology; David McDonagh, Addiction (PhD student), Dr Fintan Sheerin, Intellectual Disability Nursing, Dr Jack Bwalya, Health Policy. **HUB Supervisor: Dr Sonam Banka (email: sonam.banka@tcd.ie).**

Course flow


Week 1
Framing hypothesis
defining subchallenges
Week 2-5
Research phase
group work, collaboration between Hubs
Week 6
Report phase
symposium/report

Module timetable

PART 1: Framing hypothesis

Week 1:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery/execution	Location
Day 1: **Thu 24-3-2022**	**Lecture**	Opening	Welcome, introduction teaching staff, module ambitions	13:00h-13:15h (15 min)	Module coordinators: Niels Bovenschen (UU) /Quique Bassat (UB)	Barcelona (Physically) (+ hybrid). Room t.b.d.
	Lecture	Introduction course	Explanation of the module, assessments, expectations, learning methods, structure, and organization	13:15h-13:45h (30 min)	Module coordinator: Niels Bovenschen (UU) /Quique Bassat (UB)	Barcelona (Physically) (+ hybrid)
	Lecture	*Optional: Educational research*	*Educationalist explains that the module will be investigated (SOTL: scholarship of teaching and learning)*	*13:45-14:00 (15 min)*	*t.b.d.*	Barcelona (Physically) (+ hybrid classroom)
	Workshop	Teamwork/Team roles	What is your role in a team?	14:00h-17:00h (3h)	Trainers: Michiel van der Vlist / Ynske Bos (Skillz-Up)	Barcelona (Physically) Room t.b.d.

Day 2: **Fri 25-3-2022**	**Lecture**	Introduction Health challenge	Short 20-30min. each. Presentations by different stakeholders sharing their perspective and expertise on the problem space.	Time: 10:00h-10:20h 10:30h-11:00h 11:15h-11:45h 12:00h-12:30h 14:00h-14:30h 14:45h-15:15h --- 15:30h-15:55h 16:00h-16:25h 16:30h-16:55h	Patients, experts, other stakeholders: 1) COVID patient (José Alberto Marín) 2) Former Minister of Health, Spain (Salvador Illa) 3) Scientific journalist (Luis Quevedo) 4) Economic history (Ramon Ramon-Muñoz) 5) Regional economic resilience (Erik Stam) 6) Front-line response to pandemics (MSF) (Olimpia de la Rosa): --- A) Barcelona HUB (Quique Bassat) B) Budapest HUB (Krisztian Kasos) C) Dublin HUB (Catherine Comiskey/Sonam Banka)	Barcelona physically + hybrid + RECORD Room t.b.d.
	Lecture	Posing the general challenge	The Health challenge is positioned in relation to the Sustainable Development Goals. 2022 edition will be: *How should the world deal with future pandemics?*	16:55h-17:00h	Quique Bassat (UB) / Niels Bovenschen (UU)	Barcelona + hybrid + RECORD
Day 3: **Mon 28-3-2022**	**Self-study**	Read articles	A database with approximately 10 papers is shared with all students to read into the challenge. The same 10 papers are handed out at three participating universities. Students read individually and	10-17h	students	VLE

			choose a paper outside of their comfort zone. Each student reads and prepares 1 article. Identification of highlights.			
Day 4: **Tue 29-3-2022**	**Workgroup**	Discussion of articles	Each student presents his/her article to the all students (plenary). **Only highlights. Speed-date format. 3min to present + 5 min for questions**	11:00h-13:00h (2h)	Students / Hub supervisors	MS Teams
	Workshop	Open Science	*What is good research?*	14:00h-16:00h (2h)	Trainers: Barnabas Szaszi	MS Teams
Day 5: **Wed 30-3-2022**	**Project work**	**Writing proposal**	Students work in their subgroups on the proposal.	10-17h (8h)	Students	**Physically in HUB or in the hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities. **Hub supervisors explains hub and possibilities and stakeholders. Gives Framework.**	14:00h-16:00h* (2h) (*Timeslot(s) up to hub supervisor)	Students Hub supervisors (see table hub network)	**Physically in HUB or in the hybrid classroom**
Day 6: **Thu 31-3-2022**	**Project work**	**Writing proposal**	Students work in their subgroups on the proposal.	10-17h (8h)	students	**Physically in HUB or in the hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
Day 7:	**Project work**	**Writing proposal**	Students work in their subgroups on the proposal.	10-17h	students	**Physically in HUB**

Fri 01-4-2022				(8h)		
	Meet the expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)	Students Hub supervisors	**Physically in HUB**
	Coaching + peer assessment		Hub supervisor(s). See explanation learning activities.	16:00h-17:00h* (1h) (*Timeslot(s) up to hub supervisor)	Hub supervisors	**Physically in HUB**
	Assessment	**Hand in first version proposal**	Feedback feeds into portfolio.		Students	

PART 2: Research phase

Week 2:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery/execution	Location
Day 1: **Mon 4-4-2022**	**Project work**	**Writing proposal**	Students work in their subgroups on the proposal.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)	Students Hub supervisors	**Physically in HUB or hybrid classroom**
	Assessment	**Hand in final version proposal (deliverable 1)**			Students	VLE + Scorion (E-Portfolio)
Day 2: **Tue 5-4-2022**	***Free day***					
Day 3: **Wed 6-4-2022**	**Assessment**	**Pitch proposals (deliverable 2)**	3 pitches. 1 per HUB, max 5 min. per pitch	10:00h-11:00h (2h)	Students, supervisors, and external stakeholders attend and (peer)assess	Hybrid class room VLE + Scorion (E-Portfolio)
	Project work	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	11:00h-12:00h*	Students Hub supervisors	**Physically in HUB or hybrid classroom**

	Workshop	Translational Medicine	*From bench to bedside.*	13:00h-15:00h (2h)	Trainer: Berent Prakken	MS Teams
Day 4: **Thu 7-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
Day 5: **Fri 8-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)*	Students Hub supervisors	**Physically in HUB**
	Work meeting		All subgroups come together and present their progress to peers, they provide feedback and discussion.	14:00h-16:00h (2h)	Students, supervisors, and other stakeholders	MS Teams
	Coaching + peer assessment		Hub supervisor(s). See explanation learning activities.	16:00h-17:00h (1h)	Hub supervisors	**Physically in HUB**

April 8-17: Holidays

Week 3: April 18-24: Reading week (students can do project work). Students can work on their personal BLOG (Deliverable 3)

- **20 April World café**

Week 4:

Hub supervisors can organize a local fieldtrip

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery/execution	Location
Day 1: **Mon 25-4-2022**	***Free day***					
Day 2: **Tue 26-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB**
	Lecture	How to give a good presentation?	Instruction on how students deliver a strong presentation	15:00h-16:00h (1h)	Jessica Breitenfeld	MS Teams
Day 3: **Wed 27-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
	Workshop	Transdisciplinary solutions	Building on the learned knowledge in Phase 1, students get a recap of what was offered in the Transdisciplinary research module and how to create transdisciplinary solutions.	14:00h-16:00h (2h)	Trainer: Jake Byrne	Hybrid classroom

Day 4: **Thu 28-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
	Work meeting		All subgroups come together and present their progress to peers, they provide feedback and discussion.	15:00h-17:00h (2h)	Students, supervisors, and other stakeholders	**Hybrid classroom**
Day 5: **Fri 29-4-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)*	Students Hub supervisors	**Physically in HUB**
	Coaching + peer assessment		Hub supervisor(s). See explanation learning activities.	16:00h-17:00h (1h)	Hub supervisors	**Physically in HUB**

Week 5:

Day	Activity	Name of the activity	Explanation	Time	Responsible for delivery/execution	Location
Day 1: **Mon 2-5-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
	Lecture	How to communicate with society?	A trainer provides some hands-on tips and tricks for good communication to society (e.g. patients, media, laymen). Science communication/ knowledge translation	14:00h-14:45h (45min)	Adelaida Sarukan (Barcelona Institute for Global health (ISGlobal))	Hybrid classroom (MS-TEAMS in TCD)
Day 2: **Tue 3-5-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB**
Day 3: **Wed 4-5-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**

	Workshop	Innovative solutions	A trainer provides hands-on tips and tricks how to add c*reativity* to the challenge solution	10:00h-12:00h (2h)	Quique Bassat	Hybrid classroom
Day 4: **Thu 5-5-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
	Work meeting		All subgroups come together and present their progress to peers, they provide feedback and discussion.	15:00h-17:00h (2h)	Students, supervisors, and other stakeholders	**Hybrid classroom**
Day 5: **Fri 6-5-2022**	**Project work**	research	Students perform hands-on research.	10-17h	students	**Physically in HUB**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	12:00h-13:00h (1h)	Students Hub supervisors	**Physically in HUB**
	Coaching + peer-assessment		Hub supervisor(s). See explanation learning activities.	16:00h-17:00h (1h)	Hub supervisors	**Physically in HUB**

PART 3: Report phase

Week 6:

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery/execution	Location
Day 1: **Mon 9-5-2022**	**Assessment**	Prepare report version 1 (hand-in)	Each hub creates their own end product. Feedback from supervisors feeds in portfolio	10-17h	Students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**
Day 2: **Tue 10-5-2022**	**Project work**	**Create and prepare presentation**	Subgroups prepare their presentations for the symposium. One presentation per hub or subgroup.	10-17h	Students	**Physically in HUB**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB**
Day 3: **Wed 11-5-2022**	**Project work**	**Create and prepare presentation**	Subgroups prepare their presentations for the symposium. One presentation per hub.	10-17h	Students	**Physically in HUB or in the hybrid classroom**
	Meet the Expert		Hub supervisor(s). See explanation learning activities.	14:00h-15:00h (1h)*	Students Hub supervisors	**Physically in HUB or in the hybrid classroom**

Day 4: **Thu 12-5-2022**	**Assessment**	**Symposium Presentations** **(Deliverable 4)**	All subgroups present their results. One presentation per hub. 20 min + 10 min discussion	14:00h-16:00h (2h)	All Students, supervisors, and other stakeholders. Open to all.	Hybrid classroom VLE + Scorion (E-Portfolio)
	Lecture	Closing remarks and wrap up		16:00h-16:30h	Quique Bassat (UB) / Niels Bovenschen (UU)	
Day 5: **Fri 13-5-2022**	**Assessment**	**Hand in final report** **(Deliverable 5)**	Final end-products are submitted by all students.	Deadline 23.59 h	Students	VLE + Scorion (E-Portfolio)
	Assessment	**Academic skills** **(Deliverable 6)**	Hub supervisors assess personal development and academic skills, including collaboration.	23.59 h	Hub Supervisors	VLE + Scorion (E-Portfolio)
	Assessment	**Collaboration** **(Deliverable 7)**	a number (min. 2) of peer-feedback forms and feedback from peers in your group should be uploaded to Scorion.	23.59 h		
	Evaluation	*Optional: Educational research*	*Written questionnaires*	*t.b.d.*	*t.b.d.*	*Optional*
	Evaluation	*Optional: educational research*	*Focus groups*	*t.b.d.*	*t.b.d.*	Optional

*Timeslot(s) up to hub supervisor

Workload/Staffing

Totals:

Work form	UB* (h)	ELTE* (h)	TCD* (h)	UM (h)	UU (h)	TOTAL
Lecture	5,25	0,5	0,5	0	2	**8,25**
Workshop	2	2	2	0	6	**12**
Workgroup	60***	60***	60***	0	12	**192**
Meet the expert	30	30	30	0	0	**90**
Coaching	4	4	4	0	0	**12**
Feedback/assessment	25	25	25	0	0	**75**
Coordination	50	20	20	0	100**	**190**
TOTAL	**176,25**	**141,5**	**141,5**	**0**	**120**	**579,25**

*Physical HUBs

**Co-coordinator will attend as much as possible + coordinate online and site-visits

***Assuming that 5 lecturers per hub will attend all work meetings

Assessment table

Deliverable	Student due date and time	Assessment title	Assessment description	Assessor	PLO Domains (assessed domains with rubrics are in bold)	Group or individual
Deliverable 1	April 4, 2022, 23.59 CET	Proposal	Subgroups deliver a proposal during the first week addressing the sub-question and challenge they will be focusing on.	• Feedback on preliminary draft by supervisor	**Sustainability** **Solving challenges** Collaboration **Written communication** **Scholarship** **Transdisciplinarity**	group
Deliverable 2	April 6, 2022, 9.00AM CET (send assessor Scorion form)	Pitch	Subgroup delivers a pitch, they can choose to nominate one student to present or present as a group (extra option: all students record individual pitch)	• Feedback on presenting skills by supervisor from another HUB (see Moodle)	**Transdisciplinarity** Solving challenges **Oral communication** Scholarship	group
Deliverable 3	April 18, 2022, 23.59CET	700 word BLOG	Reflect on things that went wrong or right during the COVID pandemic in your context (writing during reading week)	• Feedback by HUB supervisors (see Moodle)	**Written communication** **Transdisciplinarity** **Solving challenges**	individual
Deliverable 4	May 12, 2022, 13.00 CET (send assessor Scorion form)	Presentation	Students contribute to the final communal presentation with their part of the analysis.	• Feedback by supervisor	Transdisciplinarity **Oral communication** Scholarship **Digital Skills**	group

Deliverable 5	May 13, 2022, 23.59CET	Final report	Students contribute to the final communal report with their part of the analysis.	• Feedback on final draft by supervisor	**Transdisciplinarity** **Sustainability** **Solving challenges** Collaboration **Written communication** **Scholarship** Digital Skills	group
Deliverable 6	May 13, 2022, 23.59CET	Academic and reflective skills	Deliver a personal reflection on your progress in the module. Use feedback from peers.	• Self-reflection (personal and professional development). Local supervisor will review	Transdisciplinarity Solving challenges Collaboration **Personal & professional development** Scholarship	individual
Deliverable 7	May 13, 2022, 23.59CET	Collaboration	Weekly evaluation of the individual and group learning process (in the coaching sessions). Students fill in rubrics each occasion and upload these to Scorion at the end of the Phase (e.g. merge in a Word file)	• Peer feedback	**Collaboration**	

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognized, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to. Furthermore, all disciplinary backgrounds are welcome in the different Research HUBs.

Participants

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Literature/reading list

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2. PRAKASHINI BANKA. The role of ISPCC Social Support on Perceived Stress, Test Anxiety and Self Esteem among Post Primary School Students. Psychology & Society, 2016, Vol. 8 (1), 75-84. http://www.tara.tcd.ie/bitstream/handle/2262/76880/5_hyland.pdf?sequence=1
3. Prerna Tewari, Prakashini Banka, Niamh Kernan, Stephen Reynolds, Christine White, Loretto Pilkington, Sharon O'Toole, Linda Sharp, Tom D'Arcy, Cliona Murphy, Catherine Comiskey, Cara M. Martin, John J. O'Leary. Prevalence and concordance of oral HPV infections with cervical HPV infections in women referred to colposcopy with abnormal cytology. J Oral Pathol Med. 2021;50:692–699. https://onlinelibrary.wiley.com/doi/full/10.1111/jop.13172
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Budapest

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4. Paul Ratanasiripong, Orawan Kaewboonchoo, Nop Ratanasiripong, Suda Hanklang, and Pornlert Chumchai. Biofeedback Intervention for Stress, Anxiety, and Depression among Graduate Students in Public Health Nursing. Nurs Res Pract. 2015; 2015: 160746. doi: 10.1155/2015/160746. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4411437/
5. Joanneke Weerdmeester, Marieke M. J. W. van Rooij, Dominique F. Maciejewski, Rutger C. M. E. Engels, and Isabela Granic. A Randomized Controlled Trial Assessing the Efficacy of a Virtual Reality Biofeedback Video Game: Anxiety Outcomes and Appraisal Processes. Technology, Mind and Behavior. APA-OPEN. Volume 2, Issue 2. DOI: 10.1037/tmb0000028. https://tmb.apaopen.org/pub/8vcurp51/release/1?readingCollection=9c21dea4

Barcelona

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2. World bank: Preparing for the next pandemic: What will it take? Juan Pablo Uribe; Priya Basu; Magnus Lindelow November 15, 2021; https://blogs.worldbank.org/voices/preparing-next-pandemic-what-will-it-take
3. UNDP: Investing in pandemic preparedness for all; https://www.undp.org/blog/investing-pandemic-preparedness-all
4. IMF: Toward better pandemic preparedness. By Jay Patel and Devi Sridhar. https://www.imf.org/external/pubs/ft/fandd/2021/12/Pandemic-preparedness-Patel-Sridhar.htm
5. Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021. Lancet:February 01, 2022 DOI:https://doi.org/10.1016/S0140-6736(22)00172-6
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Student Module Descriptor (last updated: 05. 07. 2022.)

Module details

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Start date – end date: May 16th 2022 – June 22nd 2022
Assessments: 9

Module design and content

Module high-level learning aims:

•To enable students to develop and apply effective bespoke health system strategies and approaches in the context of diverse health and disease management requirements.

•Students acquire knowledge for analysing and assessing the functioning and performance of health systems and health policymaking.

•Students are equipped with a complex, problem-oriented approach and knowledge required for developing strategies and interventions towards people-centred sustainable, accessible and resilient health systems at international, national and local community levels.

Connection with other phases and modules:

The Life and Health theme builds on the knowledge gained in Phase 1, in particularly building on the theories of systems thinking, models of complexity and transdisciplinary research. Student will use this knowledge and apply it to the challenges they will be working on. Life and Health Modules are connected by the complex approach to health as well as methods of challenge-based learning. Module Health Systems and Policies follows a mainly macro-level approach, giving the students and insight into how the problems and issues they came across related to health in the previous two modules can be framed from a policy perspective, how appropriate frameworks, actions and policies can be formed in a wider policy arena, and how good ideas can be turned into policy interventions and be placed on the political agenda.

Mobility activity in the module

There is one short-term mobility activity during the module supporting the achievement of the module and program learning outcomes in a transnational and intercultural learning environment.

- Aim and form: to close Module 12, students in the Life and Health Theme meet in Budapest for 1 week
- Location: Eötvös Loránd University, Budapest
- Length: 5 days
- Detailed thematic foci and structure: Closure of Module 12 and the Life and Health Theme. Final presentations of the challenge project outputs in Module 12.

Module Learning Outcomes

- MLO3.1 Demonstrate an understanding of health outcomes and health system performance from multiple stakeholders' perspectives e.g. health service users (client outcomes) and providers e.g. knowledge users, researchers, policy makers.

- MLO3.2 Discuss principles of clinical governance and adherence to clinical guidelines for creating and maintaining quality and safer healthcare delivery.

- MLO 3.3 Recognise the social, economic and cultural context and requirements of health policy making processes as well as "health in all policies".

- MLO 3.4 Collaborate and work with diverse groups of stakeholders and organisations at local, national and international levels

- MLO 3.5 Explain the concept of *sustainability science* and its application for challenges in health systems, taking into account (the linkages between) the well-being of socio-economic and natural systems.

- MLO 3.6. Critically discuss and apply knowledge translation for bridging the gap between research developments, clinical practice and health policy.

- MLO 3.7 Demonstrate knowledge on the hierarchy of evidence and apply it in analysing health care, practice, and policy.

- MLO 3.8 Recognise and explain individual, community and societal level needs when analysing health services as well as health systems contributing to develop interventions and methods required for a well-functioning and resilient health systems (ensuring universal health coverage and equal access to quality healthcare)

- MLO 3.9. Design solutions for health system challenges in collaboration with individuals and groups from different domains, reconciling different views, values and interests

- MLO 3.10. Students will be able to discuss ethical considerations in health system challenges, taking into account (the quality of) human and non-human life from different cultural, religious, gender, economic and political perspectives.

- MLO.3.11. Recognize and explain the relationships between long-term economic development, well-being, health status and health systems.

- MLO 3.12 Understand how communication, including (mass) media, can play a role in addressing health system challenges and patient-public involvement)

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Interactive roundtable with external policy making stakeholders	Students participate in a roundtable with non-academic actors of policy making. These actors will take part at different stages of the whole Module.
Group work	Students work self-steering in subgroups, do hands-on research and work on their contribution to the final report.
In-class simulation games	Students simulate real life situations in workshops in smaller groups, based on pre-prepared roles and situation description

Study materials

These materials will be shared in the Virtual Learning Environment:

- hand-outs and reader;
- obligatory literature;
- links to self-study sources;
- links to relevant websites;
- recommended (optional) literature.

Assessment table

Number	Due week	Due date	Title	Assessors	Assessed PLO
1.	**Week 2**	**2022.05.23. Monday**	Presentation of proposals	Teachers; Self	Sustainability, Transdisciplinarity, Solving challenges, Scholarship.
2.	**Week 2**	**2022. 05. 27.**	Reflections of roundtable	Bernadette Somody, Zsófia Kollányi	Written communication, Professional and personal development.
3.	**Week 3**	**2022.06.02. Thursday**	Presentations on SDG3 (in pairs).	Catherine Comiskey	Sustainability, Transdisciplinarity, Oral communication, Scholarship.
4.	**Week 4**	**2022.06.08. Wednesday**	Draft CLD on a freely chosen (related) topic, then checking the results with peers. Record the suggested modifications.	Zsófia Kollányi	Sustainability, Transdisciplinarity, Solving challenges, Digital skills.
5.	**Week 4**	**2022. 06. 09. Thursday**	Interim research report presentation	Teachers; Self	Sustainability, Transdisciplinarity, Solving challenges, Oral communication, Scholarship, Digital skills.
6.	**Week 5**	**2022. 06. 14. Tuesday**	Video on “Health on the street”	Zsófia Kollányi	Oral communication, Digital skills.
7.	**Week 5**	**2022.06.16. Thursday**	Exam (assessing improvement in academic knowledge and problem solving skills)	Teachers	Solving challenges, Scholarship
8.	**Week 6**	**2022.06.22. Wednesday (Submission: 2022. 06. 17. Friday)**	Presentation and discussion of students' project results.	Teachers, Tutors, Reviewers, Self.	Sustainability, Transdisciplinarity, Solving challenges, Collaboration, Oral communication, Written Communication, Scholarship, Digital skills.

Inclusiveness

Throughout our module, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to.

Recommended literature/reading list (preliminary – for precise readings see the class descriptions)

1. Figueras J and McKee M (eds.) (2012) Health Systems, Health, Wealth and Societal Well-being. Assessing the case for investing in health systems. *Open University Press* https://www.euro.who.int/en/about-us/partners/observatory/publications/studies/health-systems,-health,-wealth-and-societal-well-being.-assessing-the-case-for-investing-in-health-systems-2011

2. OECD (2019), Health for Everyone?: Social Inequalities in Health and Health Systems, OECD Health Policy Studies, *OECD Publishing*, Paris, https://doi.org/10.1787/3c8385d0-en

3. WHO (2015) People-centred and integrated health services: an overview of the evidence. Interim report. *WHO Press, Geneva*

   https://apps.who.int/iris/bitstream/handle/10665/155004/WHO_HIS_SDS_2015.7_eng.pdf?sequence=1

4. Kimmo Leppo, Eeva Ollila, Sebastián Peña, Matthias Wismar, Sarah Cook (eds.) (2013) Health in All Policies Seizing opportunities, implementing policies. *Ministry of Social Affairs and Health, Finland*
   https://www.euro.who.int/__data/assets/pdf_file/0007/188809/Health-in-All-Policies-final.pdf

5. Kutzin, J. (2010) Conceptual framework for analysing health financing systems and the effects of reforms. In: Kutzin, J., Cashin, C. and Jakab, M. (eds) Implementing HealthFinancing ReformLessons from countries in transition. (Chapter 1. pp.3-24) *European Observatory on Health Systems and Policies.* http://www.euro.who.int/en/about-us/partners/observatory/studies

6. Papanicolas I and Smith PC (eds) (2013) Health system performance comparison An agenda for policy, information and research. *Open University Press* https://www.euro.who.int/__data/assets/pdf_file/0009/244836/Health-System-Performance-Comparison.pdf

7. Deanne Gaskill & Fran Sanders, *The Encultured Body. Policy Implications for Healthy Body Image and Disordered Eating Behaviours*, Queensland U. of Technology, Brisbane 2000.

8. World Health Organisation, *Integrating Poverty and Gender into Health Programmes. A Sourcebook for Health Professionals*. 2006

9. Hurst, Jeremy (2010), Effective Ways to Realise Policy Reforms in Health Systems. OECD Health Working papers No. 51 https://doi.org/10.1787/5kmh377l4n9x-en

10. Roberts, Marc J. et al. (2008), The Health-Reform Cycle. In: Roberts, Marc J. et al. (eds), Getting Health Reform Right: A Guide to Improving Performance and Equity, Oxford ; New York : Oxford University Press.

11. United Nations Department of Economic and Social Affairs Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages. Available at https://sdgs.un.org/goals/goal3

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Flexible Phase (Semester 2)

Water Modules

Universitat de Barcelona · Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin · Utrecht University · Eötvös Loránd University | Budapest · Université de Montpellier

STUDENT MODULE DESCRIPTOR

Water theme

Flexible Phase (Semester 2)

Part 0
Technical information

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Part 0 – Technical information

Part I – Weeks 1–6

Part II – Weeks 7–14

Part III – Weeks 15–20

1. Module details

Module title:	**04. Extremes in the Water Cycle and Their Complex Consequences**
Module coordinator:	Valérie Borrell, valerie.borrell@umontpellier.fr University of Montpellier
Module title:	**05. Adaptation Measures and Strategies in Water Management**
Module coordinator:	Ádám Tóth, toth.adam@ttk.elte.hu ELTE Eötvös Loránd University
Module title:	**06. Resilient Cities: Water in Urban Environments**
Module coordinator:	András Vadas, vadas.andras@btk.elte.hu ELTE Eötvös Loránd University
Core Teachers	Valérie Borrell, valerie.borrell@umontpellier.fr University of Montpellier Jose Francisco Garcia Martinez, jfgarcia@ub.edu University of Barcelona Madhu Krishna Murali, muralim@tcd.ie Trinity College Dublin Patrice Ndiaye, patrice.ndiaye@umontpellier.fr University of Montpellier Mònica Serrano, monica.serrano@ub.edu University of Barcelona András Vadas, vadas.andras@btk.elte.hu ELTE Eötvös Loránd University Jasper van Vught, J.F.vanVught@uu.nl University of Utrecht Ádám Tóth, toth.adam@ttk.elte.hu ELTE Eötvös Loránd University Annisa Triyanti, a.triyanti@uu.nl University of Utrecht
Educationalists	Brigitte Lundin, brigitte.lundin@umontpellier.fr University of Montpellier Sanne van Vugt, s.j.h.vanvugt@uu.nl University of Utrecht
Start date – end date:	14 February 2022 – 1 July 2022
Assessments:	programmatic assessment, see assessment table in Parts I–III

2. Module design and content

Module high-level learning aims

04. Extremes in the Water Cycle and Their Complex Consequences

After this module, students will be able to identify, assess and analyse past and present extremes in the water cycle and interpret their evolution under global changes. They will be able to assess the social, political, economic, cultural, environmental and biophysical consequences of water hazards and identify the complex challenges that impacted communities and various stakeholders face. Students will also be able to collaboratively develop and apply strategies to debate with the public or imagine and construct playful forms of civic engagement.

05. Adaptation Measures and Strategies in Water Management

In this module, the student will learn about the global importance of water adaptation strategies and integrated management of water in a safe, sustainable and equal manner.
After this module, the student will be able to relate natural, social, economic and legal issues to water management and formulate their interdependence. Graduates can creatively think about and find potential interventions and measures to water quality and quantity challenges in a trans/interdisciplinary team.

06. Resilient Cities: Water in Urban Environments

At the conclusion of this module, students will be capable of recognizing the challenges of supplying urban centres with water in different geographical and social contexts. They will also be capable of identifying the main water needs of the urban populations and consider the technical, ecosystem, legal, social and historical aspects to provide present and future urban communities with sustainable and safe water resources.

Connection with other phases and modules

The Water theme builds on the knowledge gained in Phase 1, reflecting on the concepts of Transdisciplinary Research, Sustainability and Social Innovation particularly, building on systems thinking, transdisciplinary research, stakeholder mapping, communication and sustainability through various lenses. Students will use this knowledge and apply it to the challenges they will be working on and step-by-step guides from Phase 1.
The three modules of Water run parallel in an interrelated way building on a longitudinal challenge through the semester. Each group (3–5 students) should define their own challenge under the umbrella challenge of '*What sustainable solutions are serving communities' water resilience?*' and place it in a specific context (e.g. geographic location, stakeholders, environmental, social, legal, economic, technical aspects). Modules are connected by using similar approaches of challenge-based learning. Students will be assessed on integrating knowledge of the three modules.

Module Learning Outcomes

04. Extremes in the Water Cycle and Their Complex Consequences

- MLO 4.1: Recognise, describe, understand and analyse past and current extremes in the water cycle (water sciences basics, floods, droughts, trends); characterise global changes; assess its impact and interpret the associated uncertainties. [PLO 1]
- MLO 4.2: Identify both the impacted communities as well as various stakeholders and understand their social-cultural contexts, motivations, action capacities, goals, and their complex interrelationships. [PLO 1, 2]
- MLO 4.3: Know and understand both the impact of past surface water practices on nature and the international legislative and regulatory context. Analyse the effects on biology and ecology of the confrontation between this legacy and global changes. [PLO 4]
- MLO 4.4: Identify complex challenges in extremes or natural hazards from a combination of different disciplinary and global perspectives. [PLO 2, 5]
- MLO 4.5: Assess and critically discuss the effects of the global change and the vulnerability and resilience of complex socio-eco-hydro-systems. Evaluate the efficiency of hydrological infrastructures and nature restoration or preservation solutions and analyse their management principles in inter- and transdisciplinary ways. [PLO 5]
- MLO 4.6: Update their own knowledge: Review the state of the art on a social or scientific question related to changes in the water cycle and their impacts on Nature and human security (reports of international organizations, last operational solutions…), be aware of their own limits and know when and how to call on experts to improve analysis and assessment of complex situations. [PLO 3]
- MLO 4.7: Imagine, plan, model, build, play, present and debate complex scenarios for these complex socio-eco- hydro-systems, assess uncertainties in these systems, and identify the various (legal, political, social) frameworks within which interventions into these complex systems are and can be designed, integrating multiple points of view, in inter- and transdisciplinary (collaborative) ways. [PLO 5, 6]
- MLO 4.8: Communicate (orally and/or written) with different "social groups", professionals from different disciplines, stakeholders, kids and young people, with the goal of reaching the best achievable group result. [PLO 6]
- MLO 4.9: Develop a critical capacity that allows for a consideration of inclusivity and equality during every step of identifying, analysing and proposing a solution for extreme water challenges (specifically focused on marginalized communities, gender roles, sexual orientation, ethnicity, religion, income, education, among others). [PLO 2]

05. Adaptation Measures and Strategies in Water Management

- MLO 5.1: Understand the water cycle, the vital role played by water in the maintenance of ecosystem services, how it has changed over time, and particularly how climate, human and economic activities alter in the past and present the water cycle in a globalised context. [PLO 1, 3]
- MLO 5.2: Determine and analyse environmental indicators, such as physical, chemical and biological ones, and parameters of water supply for drinking and economic sectoral uses, as well as consider, assess and plan sustainable water treatment processes and re-use of water considering the natural water cycle. [PLO 2, 3, 4]
- MLO 5.3: Assess the implications of virtual water as a key concept for sustainable water management and implement techniques to calculate appropriate water footprints to provide policymakers, stakeholders and consumers with reliable information to make sustainable decisions in terms of equity, justice, culture, geopolitics and other social dimensions, as well as, environmental sustainability. [PLO 1, 2, 5]
- MLO 5.4: Integrate fundamental management and governance tools in the sustainable use of the world's water resources for various social groups, as well as aquatic and non-aquatic flora and fauna, and economic and commercial purposes. [PLO 3, 4, 5]
- MLO 5.5: Evaluate preliminary technical and economic feasibility, plan and design different management implementation projects for various purposes and use worldwide also considering their impacts on the multidimensional and interconnected nature of social categories and environment. [PLO 2, 3, 4, 6]
- MLO 5.6: Analyse all environmental, social and institutional aspects needed to be considered when implementing a water management project including legal and regulatory issues, water rights and ownership, the public/private and central/regional/local decision trade-off, geopolitical aspects as well as, all dimensions of a person's social and political identities (e.g. gender, ethnic group, religion, class). [PLO 2, 5]
- MLO 5.7: Demonstrate a critical capacity to distinguish Managed Aquifer Recharge (MAR) technique as a prospective and a higher priority solution that can increase groundwater storage, protect and improve water quality, and secure drought and emergency supplies for human, commercial and ecosystem use of water also considering their impacts on the multidimensional and interconnected nature of social categories, geopolitics and environment. [PLO 1, 4]
- MLO 5.8: Present and explain the benefits and limitations of different adaptation projects to a broad range of professionals and non-professionals in written documentation of project proposals, executive reports and town planning, as well as digital communication through media and social network platforms. [PLO 4, 5, 6]
- MLO 5.9: Communicate with scientists, policymakers, stakeholders (communities, town planners, developers, water utilities and regulators), and other agents of society (including younger generations) talking in a cross-language to promote acceptance and foster civic engagement in sustainable water management. [PLO 3, 5, 6]
- MLO 5.10: Recognise the water–food–life & health nexus and identify the role of water management strategies and measures in ecosystem sustainability, poverty reduction, gender equality, livelihood stability, agricultural systems, economic and health risk reduction, and thereby reaching equality in access to water. [PLO 1, 2, 3, 5, 6]

06. Resilient Cities: Water in Urban Environments

- MLO 6.1: Analyze how human interference in the natural water cycle transformed historical ecosystems (through damming, pollution, extinction of species), recognize the potential risks of intensive urbanisation on water-tables (causing public health hazards, building and infrastructure damages) and question the adaptation of cities to future available water resources distinguishing other alternatives. [PLO 1, 2, 3]
- MLO 6.2: Assess the multisectoral and ecosystem water needs in metropolitan areas taking into account the sources of urban water supply worldwide. [PLO 1, 2, 4, 6]
- MLO 6.3: Realize the complex system of material and energy flows to and from cities (urban metabolism) and the need for increasingly integrated supply systems to cover the freshwater, food and energy needs of urban populations considering all aspects of a person's social and political identities as well as environmental impacts and international geopolitics. [PLO 1, 3]
- MLO 6.4: Consider and apply smart innovative techniques and adaptive management approaches of water quality monitoring, water treatment and wastewater management in response to contaminant load from in-situ sanitation, sewer leakage, inadequate storage and handling of community and industrial chemicals, pharmaceutical and hormonal residues and disposal of liquid effluents and solid wastes. [PLO 1, 2, 5, 6]
- MLO 6.5: Analyze and critically adapt the ways past and present societies managed and manage complex water systems, design integrated surface and groundwater management strategies to improve the resilience to water hazards, reduce water stress and promote welfare. [PLO 2, 3, 5]
- MLO 6.6: Know the legal framework, the political and economic structure and the social organization related to complex water systems as well as integrate water in city development plans and national planning policy considering political and international relationships. [PLO 2, 3, 4]
- MLO 6.7: Design protocols for managing water systems in the urban environment while balancing population needs and available resources in a way that ensures adequate supply for the local ecosystems and social repercussions. [PLO 4, 5, 6]
- MLO 6.8: Consider and debate innovative and smart water management strategies in urban environments, including smart cities and homes, from local households to the scale of megacities and promote the involvement and empowerment of the actors in managing these systems. [PLO 4, 5, 6]
- MLO 6.9: Understand the different dimensions of water security and inequalities in access to water in urban environments with special regard to potential implications to migrations to and from towns and rural and agrarian areas as well as climate change. [PLO 1, 2]
- MLO 6.10: Effectively communicate with different actors and argue for or against water management of different scales including political actors, private investors, NGOs, and local societies and other social actors (younger generations, as well) and bridging the collaboration between society and researchers. [PLO 1, 3, 5, 6]

3. Types of learning activities

This table describes the type of learning activities you will be engaged in during this module.

Learning activity	Explanation
Lecture	Students follow online or hybrid lectures delivered by expert (guest) teachers introducing theories and concepts.
Workshop	Students work in groups to develop specific skills and competencies with the supervision of a teacher/facilitator.
Tutorial	Active learning activity focusing on a specific case study and supporting the students with the current assessments and tasks.
Book and film club	Specific discussion when students meet to discuss a book or a film that they have read and watched and express their opinions, likes, dislikes, scanning for real-life challenges.
Discussion	Active learning activity through debating with peers and experts.
Hackathon	A participatory activity of short duration, where people come together to solve some particular real-life problems (challenges), in a friendly and fairly competition.
Strategic game	A game in which players are required to make strategic decisions or plan an overall course of action. The players' decision-making skills have a high significance in determining the outcome.
Group work	Students work in (hybrid) subgroups, do hands-on research and work on their contribution to group assignments.
Meet the expert	Students engage with extra-academic actors to discuss sustainability challenges and include the perspectives of extra-academic actors within their assignments.
Field school	A short-term academic program that takes students out of the classroom and places them in the field, giving them the opportunity to learn first-hand how to apply theories and concepts from the classroom to practical problems in an authentic environment.
Flipped classroom	On the basis of the required readings for the week, students engage in a debate around catchy, controversial questions related to the different topics addressed.
International conference	A platform to share the latest and innovative ideas with peers and senior groups of people from different parts of the world with the help of an oral or poster presentation.
Sharing session	Students share with their peers and experts the findings of their assignments and reflect on their learning trajectory, with the facilitation of a teacher.

4. Study materials

Study materials will be shared in the Virtual Learning Environment:

- glossary (shared with teachers and students)
- hand-outs and reader
- obligatory literature
- links to self-study sources
- literature database
- links to relevant websites
- recommended (optional) literature.

5. Mobility activity in the module

There are two short-term mobility activities in this theme supporting the achievement of the module learning outcomes in a transnational and intercultural learning environment.

1. Field school: From the tap to the rain

- Aim and form: Identify real-life transdisciplinary challenges in the field related to selected targets of 2 SDGs with multiple stakeholders on the way. Desktop study in advance for preparation (virtual component), 5 days of physical mobility and a sharing-the-findings session afterwards (virtual component).
- Location: hosted and organised by Trinity College Dublin
- Length: 2.5 days for virtual preparation, 5 days of physical mobility (4–8 April 2022), 3 days for virtual reporting and sharing
- Detailed thematic foci and structure:
  Building on historical and current perspectives on the water to achieve the SDGs in the future.
  Two SDGs have been selected to focus on:
  - SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable
  - Selected individually

  Students will work individually and in small groups, as well.
  Detailed structure in the Student Module Descriptor – Part II.
- Notes: activities are accompanied by an online preparatory and a follow-up phase that supports the formulation of project teams, their structured work as well as the sustainability of the results of the teamwork. The teams will be asked to work together online and offline, before, during and after the physical mobility period.
- Number of ECTS credits to be awarded: 3 ECTS

2. International conference and & Field school: From the rain to the tap

- Aim and form: Attend an international conference on all aspects of water. Identify real-life transdisciplinary challenges on the field related to selected targets of 2 SDGs with multiple stakeholders on the way. Desktop study in advance for preparation (virtual component), 19 days of physical mobility and a sharing-the-findings session afterwards (virtual component).
- Location: organised and hosted by Montpellier; conference venue in Montpellier; short visits in and around Montpellier; field school following the Drac river starting from the mountains down to Grenoble
- Length: 3 days for virtual preparation, 19 days of physical mobility (30 May – 17 June 2022), 2 days for virtual reporting and sharing
- Detailed thematic foci and structure:

2/1. IAHS Conference Montpellier, 30 May – 3 June

XIth Scientific Assembly of the International Association of Hydrological Sciences (IAHS 2022)
http://www.iahs2022.org/?lang=en
Conference and optional workshops

2/2. Short visits & Preparation for the field school, 6–10 June

La Camargue National Park and Lez river

2/3. Field school, Drac river 13-17 June

Two SDGs have been selected to focus on:

- SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Selected individually

Students will work individually and in small groups, as well.
Detailed structure in the Student Module Descriptor – Part III.

- Notes: activities are accompanied by an online preparatory and a follow-up phase that supports the formulation of project teams, their structured work as well as the sustainability of the results of the teamwork. The teams will be asked to work together online and offline, before, during and after the physical mobility period.
- Number of ECTS credits to be awarded: 7 ECTS

6. Inclusiveness

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STUDENT MODULE DESCRIPTOR

Water theme

Flexible Phase (Semester 2)

Part I

Weeks 1–6

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7. Module timetable

Week 1 – Welcome & Introductory week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
14 Feb varies locally	**Local introduction**	Local welcome	Welcome, introduction, meet the university	local JVAO	local
15 Feb 10:00–12:00	**Lecture**	Theme welcome	Welcome, introduction, explanation of the theme (structure, assessments, mobility, longitudinal challenge etc.)	Ádám Tóth	online
15 Feb 14:00–17:00	**Workshop**	Getting know each other	Team building	Brigitte Lundin, core teachers	Hybrid classroom
15 Feb evening (1 hour)	**Self-study**	Film	Watch *One life on our planet* by David Attenborough locally together (if possible). Introduce the book and **#1** forum in Moodle and explain guidelines and assignment.	Students	At home
16 Feb	**Self-study**	Reading day	Read the book: James Powell: *The 2084 Report: An Oral History of the Great Warming*	Students	At home
17 Feb 10:00–13:00	**Self-study**	Prepare for the discussion	Submit and read questions in the **#1** forum. Students prepare guiding questions for the plenary discussion and reflection.	Students	At home/ Hybrid classroom
17 Feb 14:00–15:30	**Book and film club**	The 2084 book (Parts 1–8) + film discussion	Students facilitate discussions in small groups using the questions from the forum in Moodle.	András Vadas, Madhu Murali	Hybrid classroom
17 Feb 15:30–17:00	**W4F Hackathon**	Water for Future Hackathon Montpellier preparation	Prepare for the hackathon, define challenges. Introduction assignment **#2** self-reflection and **#3** peer-assessment	Valérie Borrell	Hybrid classroom
18 Feb 10:00–20:00	**W4F Hackathon**	Water for Future Hackathon Montpellier	Participate in the hackathon (together with other non-CHARM-EU students)	Valérie Borrell	Location t.b.a. for UM / online
!19 Feb! 8:30–17:30	**W4F Hackathon**	Water for Future Hackathon Montpellier	Participate in the hackathon (together with other non-CHARM-EU students)	Valérie Borrell	Location t.b.a. for UM / online

Week 2 – The Water Cycle

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
21 Feb morning	Self-study	Reading morning	Finish reading the book James Powell: *The 2084 Report: An Oral History of the Great Warming*	Students	At home
21 Feb 14:00–15:30	Book club	The 2084 book (Part 9: A way out) discussion	Students facilitate discussions in small groups using on the 'solution' chapters of the book	András Vadas, Madhu Murali	Online
21 Feb 15:30–17:00	Workshop	Formulate Big Idea	Identify knowledge gaps and synergies, discuss emerging issues in the field of Water. Formulate big ideas (brainstorm about future challenges).	Valérie Borrell, Ádám Tóth, Dimitra Mousa	Online
21 Feb 1 hour	Self-study	Water cycle 1: Humans and Water	For the next day based on Moodle learning units	Students	At home
22 Feb 10:00–11:30	Workshop	Water cycle 1: Humans and Water	Exploring students' ideas on humans and water	Madhu Murali	Hybrid classroom
22 Feb 11:30–13:00	Lecture	Water cycle 1: Humans and Water	Human perception of water through history	András Vadas	Hybrid classroom
22 Feb 14:00–16:00	Lecture	Water cycle 1: Humans and Water	Open economics to people and the Planet	Mònica Serrano	Hybrid classroom
22 Feb 1 hour	Self-study	Water cycle 2: Above ground	For the next day based on Moodle learning units	Students	At home

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
23 Feb 10:00–11:00	**Lecture**	Water cycle 2: Above ground	Microplastics in the oceans	Erik van Sebille	Hybrid classroom
23 Feb 11:00–13:00	**Workshop**	Water cycle 2: Above ground	Climate change and water cycle	András Vadas, Valérie Borrell	Hybrid classroom
23 Feb 14:00–16:00	**Workshop**	Water cycle 2: Above ground	How to prevent floods?	András Vadas, Valérie Borrell	Hybrid classroom
23 Feb 16:00–17:00	**Lecture**	Water cycle 2: Above ground	How the society reacts to global changes?	András Vadas, Valérie Borrell	Hybrid classroom
23 Feb 1 hour	**Self-study**	Water cycle 3: Below ground	For the next day based on Moodle learning units	Students	At home
24 Feb 10:00–11:00	**Workshop**	Water cycle 3: Below ground	Water under our feet	Ádám Tóth	Hybrid classroom
24 Feb 11:00–12:00	**Lecture**	Water cycle 3: Below ground	How to maintain our groundwater reserves?	Ádám Tóth, Niels Hartog	Hybrid classroom
24 Feb 12:00–13:00	**Lecture**	Water cycle 3: Below ground	Water supply system of Budapest	Ádám Tóth, Tamás Mireisz	Hybrid classroom
24 Feb 14:00–17:00	**Strategic Game**	Water cycle 3: Below ground	The Groundwater Game Introduction of **#4** assessment	Ádám Tóth, Stefan Siepman	Hybrid classroom
25 Feb	No learning activity (Compensation day for W4F) (hand in **#2** reflection hackathon and **#3** collaboration assessment by 23:59)				

Week 3 – Core concepts 1

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
28 Feb 10:00–11:00	**Workshop**	Week reflection	Reflection on the topics of the previous week	Valérie Borrell, Ádám Tóth, András Vadas	Online
28 Feb 11:00–12:00	**Workshop**	Q&A	Chairs of each student group collect questions from their group and lead the Q&A.	Valérie Borrell, Ádám Tóth, András Vadas	Online
28 Feb 12:00–13:00	**Group work**	Form groups and divide roles	Forming groups, "sign up" for a role in a team, meet the team, explore problem spaces and potential challenges, form groups of 3-5. Students can choose to form local or transnational groups.	Valerie Borrell, Ádám Tóth, Dimitra Mousa, Students	Online
28 Feb 14:00–17:00	**Group work**	Let's start!	Identifying a team challenge and desktop study. Students send problem space and challenge topics title, brief description (2-3 sentences) and team membership list to Ádám Tóth. Introduction of **#5** ENGAGE draft report and **#6** presentation	Students	Online/at home/on-campus
28 Feb 1 hour	**Self-study**	Water Needs & Stress	For the next day based on Moodle learning units	Students	At home

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
1 March 10:00–10:30	**Workshop, Case study introduction**	Water Needs & Stress	Water crisis in Cape Town	Jared van Rooyen, Ádám Tóth, András Vadas	Hybrid classroom
1 March 10:30–12:30	**Lecture**	Water Needs & Stress	Water stress evolution through history and in the future	András Vadas	Hybrid classroom
1 March 14:00–16:00	**Tutorial**	Water Needs & Stress	Exploring nexus and solutions	András Vadas	Hybrid classroom
1 March 1 hour	**Self-study**	Water Quality & Treatment	For the next day based on Moodle learning units	Students	At home
2 March 6 hours	**Group work**	Let's continue!	Students work on their longitudinal challenge. Meet the coaches.	Students + Coaches	Online/at home

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
3 March 10:00–10:30	**Discussion**	Water Quality & Treatment	Plenary discussion on water quality and treatment	Madhu Murali, José García	Hybrid classroom
3 March 10:30–11:00	**Workshop, Case study introduction**	Water Quality & Treatment	Case Study: Barcelona Water Quality in extreme rain episodes	Madhu Murali, José García, Montse Batlle	Hybrid classroom
3 March 11:00–13:00	**Lecture**	Water Quality & Treatment	Core Concepts on water quality, laboratory procedures and water treatment processes	Madhu Murali, José García, Mercè Gracenea, Cristina Garcia	Hybrid classroom
3 March 14:00–16:00	**Tutorial**	Water Quality & Treatment	Discuss case study and report findings	Madhu Murali, José García, Montse Batlle	Hybrid classroom
3 March 1 hour	**Self-study**	Water Regulation	For the next day based on Moodle learning units	Students	At home
4 March 10:00–10:30	**Workshop, Case study introduction**	Water Regulation	Case studies on transboundary pollution, shared use of aquifers, water rights and irrigation, and protecting freshwater resources in the EU	Katalin Sulyok	Hybrid classroom
4 March 10:30–12:30	**Lecture**	Water Regulation	Transboundary pollution, shared use of aquifers, water rights and irrigation, and protecting freshwater resources in the EU	Katalin Sulyok	Hybrid classroom
4 March 14:00–16:00	**Tutorial**	Water Regulation	Discuss case study and report findings	Katalin Sulyok	Hybrid classroom
4 March	**Assessment**	Hand in **#4** Groundwater game assignment (by 23:59)			

Week 4 – Core concepts 2

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
7 March 10:00–11:00	**Workshop**	Week reflection	Reflection on the topics of the previous week	José García, Patrice Ndiaye, András Vadas	Online
7 March 11:00–12:00	**Workshop**	Q&A	Chairs of each student group collect questions from their group and lead the Q&A.	José García, Patrice Ndiaye, András Vadas	Online
7 March 4 hours	**Group work**	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home/on-campus
7 March 1 hour	**Self-study**	Water Management	For the next day based on Moodle learning units	Students	At home
8 March 10:00–10:30	**Workshop, Case study introduction**	Water Management	Sustainable groundwater development for improved livelihoods in Sub-Saharan Africa	Ádám Tóth	Hybrid classroom
8 March 10:30–13:00	**Lecture**	Water Management	The role of women in water management	Alexis Tchiapké, Ádám Tóth	Hybrid classroom
8 March 14:00–16:00	**Tutorial**	Water Management	Designing groundwater management	Ádám Tóth	Hybrid classroom
8 March 1 hour	**Self-study**	Water Security	For the next day based on Moodle learning units	Students	At home
9 March 6 hours	**Group work**	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home/on-campus

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
10 March 10:00–10:30	**Workshop, Case study introduction**	Water Security	Case study of Flood and Drought Governance in European and Asian Regions	Annisa Triyanti, Dries Hegger, Carel Dieperink	Hybrid classroom
10 March 10:30–12:30	**Lecture**	Water Security	Water-related disaster risk governance	Annisa Triyanti, Dries Hegger, Carel Dieperink	Hybrid classroom
10 March 14:00–16:00	**Tutorial**	Water Security	Discuss case study and report findings	Annisa Triyanti	Hybrid classroom
10 March 1 hour	**Self-study**	Water Footprint	For the next day based on Moodle learning units	Students	At home
11 March 10:00–10:30	**Workshop, Case study introduction**	Water Footprint	What is the colour of water?	Mònica Serrano	Hybrid classroom
11 March 10:30–12:30	**Lecture**	Water Footprint	Water use: go beyond the water needs	Mònica Serrano	Hybrid classroom
11 March 14:00–16:00	**Tutorial**	Water Footprint	Linking water needs, use and challenges	Mònica Serrano	Hybrid classroom

Week 5 – ENGAGE week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
14 March 10:00–11:00	**Workshop**	Week reflection	Reflection on the topics of the previous week	Mònica Serrano, Annisa Triyanti, Ádám Tóth	Online
14 March 11:00–12:00	**Workshop**	Q&A	Chairs of each student group collect questions from their group and lead the Q&A.	Mònica Serrano, Annisa Triyanti, Ádám Tóth	Online
14 March 4 hours	**Group work**	Let's finalise!	Students work on their longitudinal challenge and the pitch	Students + Coaches	Online
14 March by 23:59	**Assessment**	Draft report	Students hand in a **#5** draft report of the engagement phase of the CBL framework and a plan for the investigate phase		
15 March 10:00–13:00	**Group work**	Let's finalise!	Finalising the presentation	Students	Hybrid classroom
15 March 14:00–17:00	**Group discussion**	Let's share & Draft reports discussion	Students pitch their draft report so far to their peers and the coaches. Students **#6** present their challenges followed by a Q&A	Students + Coaches	Hybrid classroom
16 March	**Self-study**		Preparation for the readiness test	Students	At home
17 March	**Self-study**		Preparation for the readiness test	Students	At home
18 March 10:00–11:30	**Assessment**	Readiness Test Core Concepts	**#7** Test on core concepts to get an idea of where the students are	Self-assessment	Online
18 March 11:30–13:00	**Discussion**	Debrief Readiness Test	Peer-activity to discuss the answers	Teaching assistants	Online
18 March 14:00–15:00	**Lecture**	Debrief Readiness Test	Discuss future steps or remedial actions	Coaches	Online

Week 6 – Meet the expert

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
21 March 10:00–11:00	Lecture	Meet the expert introduction	Introduce the Meet the Expert sessions	Ádám Tóth	Online
21 March 11:00–13:00	Self-study	Meet the expert preparation	Preparation for the meetings based on abstracts, profile, LinkedIn, synopsis	Students	At home
21 March 3 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students	At home
22 March 10:00–17:00	Lecture + Workshop	World Water Day	Joining the activities of the UN, exploring the current state of SDG6	Ádám Tóth	Hybrid classroom
23 March 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge, stakeholder mapping	Students + Coaches	At home/on-campus
24 March 10:00–11:30	Meet the expert	Morning talk 1	The role of the cluster Catalan Water Partnership in managing water-related social challenges	Sergi Compte (Catalan Water Partnership), José García	Hybrid classroom
24 March 11:30–13:00	Meet the expert	Morning talk 2	Nature-based solutions in water and ecology restoration	Cécile Llovel (Philia Ingénierie), Valérie Borrell	Hybrid classroom
24 March 14:00–15:30	Meet the expert	Afternoon talk	Schoonschip – A sustainable floating community	Aga Biedalak (Space&Matter), András Vadas	Hybrid classroom
24 March 15:30–17:00	Discussion		Students discuss the meet the expert sessions	Students	Hybrid classroom

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
25 March 10:00–11:30	Meet the expert	Morning talk 1	Water management in Jakarta: challenges and opportunities	Gusti Ayu Ketut Surtiari (Indonesian National Research and Innovation Agency), Erni Pelita Fitratunnisa, (Environmental management and sanitation, Indonesia), Annisa Triyanti	Hybrid classroom
25 March 11:30–13:00	Meet the expert	Morning talk 2	Driving innovation in the municipal water industry with new technologies	Ceris Van de Vyver (Isle Utilities, UK), Madhu Murali	Hybrid classroom
25 March 14:00–16:00	Meet the expert	Meet the expert	Students discuss the meet the expert sessions and explore new perspectives of their team challenge	Students	Hybrid classroom

Note this is subject to change

8. Assessment table

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
1	17 February 2022, 13:00 CET	Book club forum (individual)	Students submit questions to the forum and answer questions from peers in Moodle.	Teacher (András, Madhu, Ádám)	Written communication
2	25 February 2022, 23:59 CET	Reflection on the hackathon Water for future (individual)	Students upload an individual reflection on their learning experiences at the hackathon (e.g. written report, vlog, video, mind map, mini-podcast). They reflect on both the content of the hackathon as well as personal development and transversal skills. Use the collaboration rubric and the feedback you received in the process.	Teacher (Valérie, Mònica, Ádám, Patrice)	Personal and professional development
3	25 February 2022, 23:59 CET	Peer-assessment collaboration	Students ask two peers to fill out the rubric on collaboration based on their experiences in the hackathon.	Peer multi-source	Collaboration
4	4 March 2022, 23:59 CET	Groundwater Game (individual)	Students choose an appropriate way of presenting recommendations in a report to farmers/households based on their experiences in the Groundwater game.	Teacher (Ádám)	Written/Oral communication, Sustainability, Digital skills, Transdisciplinarity
5	14 March 2022, 23:59 CET	Draft Report Longitudinal Challenge (ENGAGE) (group)	Students hand in a draft report of the engagement phase of the CBL framework and a plan for the Investigate phase.	Teacher, coaches (Madhu, Ádám, András, Patrice, Mònica, Valérie, José, Annisa)	Scholarship, Written communication, Transdisciplinarity, Solving challenges
6	15 March 2022	Presentation Sharing Session (group)	Students present their challenges followed by a Q&A	Teacher, different coach! (Madhu, Ádám, András, Patrice, Mònica, Valérie, José, Annisa)	Oral communication, Transdisciplinarity, Digital skills
7	18 March 2022	Readiness Test (individual)	Individual tests on core concepts to get an idea of where students are. Remedial actions are discussed afterwards and teacher feedback is summarised and uploaded to the ePortfolio. Students upload a screenshot of their results on the test (score X = intermediate) leave a comment to PAC	Self-assessment based on the outcome of the test	Sustainability

9. Literature/reading list

This is a preliminary list of readings, further materials will be provided week by week.

- James L. Powell: The 2084 Report: An Oral History of the Great Warming
- David Attenborough: A Life on Our Planet – movie
- Alfieri, L., Cohen, S., Galantowicz, J., Schumann, G. J-P., Trigg, M. A., Zsoter, E., Prudhomme, C., Kruczkiewicz, A., Perez, E. C., Flamig, Z., Rudari, R., Wu, H., Adler, R. F., Brakenridge, R. G., Kettner, A., Weerts, A., Matgen, P., Islam, S. A. K. M., Groeve, T., Salamon, P. (2018) A global network for operational flood risk reduction. Environmental science & policy 84, 149–158
- The Intergovernmental Panel on Climate Change (IPCC) reports, https://www.ipcc.ch/
- Bodnar, R., Azbej, T., Becker, S. P., Cannatelli, C., Fall, A., Severs, M. J. (2013): Whole Earth geohydrologic cycle, from the clouds to the core: The distribution of water in the dynamic Earth system. The Geological Society of America, Special Paper 500
- Aeschbach-Hertig, W., Gleeson, T. (2012): Regional strategies for the accelerating global problem of groundwater depletion. Nature Geoscience 5, 853–861
- Burke, J. J., Moench, M. H. (2000): Groundwater and society: resources, tensions and opportunities. Themes in groundwater management for the twenty-first century. UN
- Conca, K., Weinthal, E. (ed) (2018): The Oxford Handbook of Water Politics and Policy. Oxford University Press
- Gale, I. (2005): Strategies for Managed Aquifer Recharge (MAR) in semi-arid areas. UNESCO IHP
- Garrick, D. E., Hanemann, M., Hepburn, C. (2020): Rethinking the economics of water: an assessment. Oxford Review of Economic Policy, Volume 36(1): 1–23
- Mekonnen, M.M., Hoekstra, A.Y. (2011): National Water Footprint Accounts: The green, blue and grey water footprint of production and consumption. UNESCO IHP
- Orlove, B., Caton, S. C. (2010): Water sustainability: Anthropological Approaches and Prospects. Annual Review of Anthropology, 39(1): 401–415
- Castonguay, S., Evenden, M. (ed) (2012): Urban Rivers: Re-making Rivers, Cities and Space in Europe and North America. Pittsburgh, PA: University of Pittsburgh Press
- Domènech, L., March H., Surí, D. (2013): Degrowth initiatives in the urban water sector? A social multi-criteria evaluation of non-conventional water alternatives in Metropolitan Barcelona. Journal of Cleaner Production 8: 44–55
- Heynen, N. C., Kaika, M., Swyngedouw, E., (ed) (2005): In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism. Abingdon: Routledge.
- Karar, E., (ed) (2017): Freshwater Governance for the 21st Century. Cham Springer International Publishing
- Paterson, W., Rushforth, R., Ruddell, B. L., Konar, M., Ahams, I., C., Gironás, J., Mijic, A., Mejia, A. (2015): Water footprint of Cities: A Review and Suggestions for Future research. Sustainability 7: 8461–8490
- International Association of Hydrogeologists: Strategic Overview Series https://iah.org/education/professionals/strategic-overview-series

Suggested journals for current research papers:

- Sustainability https://www.mdpi.com/journal/sustainability
- Discover Water https://www.springer.com/journal/43832
- Water Research https://www.journals.elsevier.com/water-research
- Water Resources Management: https://www.springer.com/journal/11269
- Water MDPI https://www.mdpi.com/journal/water
- Water History https://www.springer.com/journal/12685

STUDENT MODULE DESCRIPTOR

Water theme

Flexible Phase (Semester 2)

Part II

Weeks 7–14

CHARM-EU

CHallenge-driven
Accessible
Research-based
Mobile
European
University

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7. Module timetable

Week 7 – Field school preparation

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
28 March 10:00–13:00	**Self-study**	Field school preparation	Preparation for the field trip: reading materials, choosing SDG targets	Students	At home
28 March 14:00–16:00	**Workshop**	Field school discussion	Students share their initial ideas for SDGs and targets	Madhu Murali, José García	Online
29 March 10:00–11:00	**Lecture**	Field school overview	Background on the field trip and the importance of our case study	Madhu Murali, José García	Hybrid classroom
29 March 11:00–13:00	**Workshop**	SDG confirmation and group formation	Students confirm the SDG that they have selected and form groups for the field school based on this selection	Madhu Murali, José García	Hybrid classroom
29 March 14:00–17:00	**Group work**	Group discussion and presentation	Students discuss why they selected their SDGs and choose specific targets within that they would like to address in their field school groups. Present back on their selection, motivation, and goals to the group using a CBL canvas	Madhu Murali, José García	Hybrid classroom
30 March 6 hours	**Self-study**	Self-preparation	Preparation for the field trip	Students	At home

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
31 March 10:00–11:00	Lecture	Developing an effective survey	Lecture to understand how to develop an effective survey	David McDonagh	Hybrid classroom
31 March 11:00–13:00	Workshop	Survey development	Develop a survey for recreational sea-swimmers in Dublin Bay in your field school groups leaning towards selected SDG.	Madhu Murali, José García, David McDonagh, Students	Hybrid classroom
31 March 14:00–16:00	Workshop	Present your surveys	Present your survey to the groups along with your rationale for selection. Discussion on the best aspects of each other's surveys	Madhu Murali, José García, David McDonagh, Students	Hybrid classroom
1 April 11:00–13:00	Workshop	Feedback session	A feedback session for your thoughts on Phase 2 Water so far	Sanne van Vugt	Hybrid classroom
1 April 14:00–16:00	Lecture/ workshop	Bathing Water Project	From Barcelona to Berlin, results on the LIFE iBathWater project	Montse Battle, Madhu Murali, José García	Hybrid classroom
1 April 16:00–16:30	Lecture	Q&A and field school practicalities	A quick discussion on some practical arrangements for the field trip	Madhu Murali	Hybrid classroom

Week 8 – Dublin Field School

Building on historical and current perspectives on the water to achieve the SDGs in the future – Understanding a human-impacted water cycle

"From the tap to the rain" is the conceptual framework for this field school. We will aim to understand how water moves within and interacts with human settlements, particularly cities, using Dublin as our case study. We will gain an understanding of the city's current water infrastructure as well as some historical perspectives on its development. Building on this foundation, a relevant water issue will be outlined for each group to analyse in detail and determine potential solutions to. In Dublin, the water quality in Dublin Bay is something that has come under increasing scrutiny in the last few years. We will explore this issue in detail by trying to holistically understand the challenges in maintaining water quality in urban waters and the impacts of degraded urban water quality. Activities will include water quality data analysis, stakeholder engagement, and biodiversity assessment. Solutions to this issue should be aimed at achieving selected targets within two SDGs, SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable and another SDG of your choosing. You will work in groups through this field school and the groups will be created based on your choice of SDGs. The main assessment for the field school will involve a proposal from your group in the form of a pitch or presentation to achieve your selected SDGs in relation to the case study area, Dublin Bay. Further, you will all individually reflect on your main learnings from the field trip and its impacts on your longitudinal assessment. Lastly, you will also be assessed on your collaboration by your peers.

Note that times are reported in IST (Irish Standard Time) local time zone for week 8.

Date and time (IST!)	Activity	Name of the activity	Explanation	Responsible for delivery	Location
4 April 9:00–13:00	**Walking tour**	A historical perspective of water in Dublin	Tour of the city looking at a number of sights to gain a historical perspective on how Dublin developed as a city and its water infrastructure changed alongside. • Old Harbour • River cruise/canoe • Holy Wells • Water Supply in Balrothery Weir • Irish Parliament and political history of water	Madhu Murali	Dublin
4 April 14:00–16:00	**Workshop**	Where do you see the city going?	Group discussion on Water Sensitive Cities continuum. What is the future vision for the city related to your selected SDGs?	Madhu Murali, Core teachers	Hybrid classroom
4 April	**Assessment**	Daily personal reflection	A **#8** short reflection of your thoughts on the day in the medium you prefer (blog, vlog, podcast etc.)	Students	At home
5 April 9:00–12:00	**Site visit**	Water Supply Dam visit	Tour to water supply dam in the Wicklow Mountains	Madhu Murali, Core teachers	Wicklow Mountains
5 April 13:00–16:00	**Site visit**	Storm and wastewater visit	Understand the city as a catchment, look at stormwater and wastewater infrastructure around the city	Madhu Murali, Core teachers	Dublin
5 April	**Assessment**	Daily personal reflection	A **#8** short reflection of your thoughts on the day in the medium you prefer (blog, vlog, podcast etc.)	Students	At home

Date and time (IST!)	Activity	Name of the activity	Explanation	Responsible for delivery	Location
6 April 9:00–13:00	Site visit	Biodiversity and water quality	Start looking into the water quality in Dublin Bay and understand the impacts on local biodiversity	Karin Dubsky, Madhu Murali, Core teachers	Dublin
6 April 14:00–16:00	Workshop	Understanding water quality	Relate measured quality to European frameworks and present back on findings	Madhu Murali, José García	Hybrid classroom
6 April	Assessment	Daily personal reflection	A #8 short reflection of your thoughts on the day in the medium you prefer (blog, vlog, podcast etc.)	Students	At home
7 April 9:00–13:00	Site visit	Stakeholder perspectives	Interact with local swimming group/s to understand their concerns about water quality	Madhu Murali, Jenny Kirkwood, Core teachers	Dublin
7 April 14:00–15:00	Workshop	Changing it up	Group reflection on changing survey based on stakeholder interactions	Madhu Murali, Core teachers	(Hybrid) Classroom
7 April 15:00–16:00	Lecture	Water quality on a catchment-scale	Presentation by Local Authority Waters Programme on water quality issues and the future	Donal O'Keeffe	(Hybrid) Classroom
7 April	Assessment	Daily personal reflection	A #8 short reflection of your thoughts on the day in the medium you prefer (blog, vlog, podcast etc.)	Students	At home
8 April 9:00–12:00	Site visit	Blue-Green and grey solutions	Introduction to Nature-Based Solutions at Rediscovery Centre and comparison with traditional grey infrastructure	Madhu Murali, Core teachers	Dublin
8 April 13:00–16:00	Workshop	Bring it all together	Group discussion focused on outlining the problems they foresee for their selected SDGs and initial solutions on overcoming them	Madhu Murali, Core teachers	(Hybrid) Classroom
8 April	Assessment	Daily personal reflection	A #8 short reflection of your thoughts on the day in the medium you prefer (blog, vlog, podcast etc.)	Students	At home

Week 9 – Holiday week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
11 April	**Holiday** – no learning activities				
12 April	**Holiday** – no learning activities				
13 April	**Holiday** – no learning activities				
14 April	**Holiday** – no learning activities				
15 April	**Holiday** – no learning activities				

Week 10 – Reading week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
18 April	**Self-study**	Self-preparation	Preparation for the assessments	Students	At home
19 April	**Self-study**	Self-preparation	Preparation for the assessments	Students	At home
20 April	**Self-study**	Self-preparation	Preparation for the assessments	Students	At home
21 April	**Self-study**	Self-preparation	Preparation for the assessments	Students	At home
22 April	**Self-study**	Self-preparation	Preparation for the assessments **#8** submit field trip self-reflection **#9** submit Pitch your solutions videos **#10** Group collaboration assessment	Students	At home

Week 11 – Global South week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
25 April 6 hours	Group/ individual work	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
26 April 10:00–11:30	Lecture	Global South case studies	Permafrost thaw in the Andes	Balázs Nagy	Hybrid classroom
26 April 11:30–13:00	Lecture	Global South case studies	Increasing water demand and pollution in Asia	Saroj Chapagain	Hybrid classroom
26 April 14:00–16:00	Discussion	Global South case studies	Water and migration	András Vadas	Hybrid classroom
27 April 6 hours	Group/ individual work	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
28 April 10:00–12:00	Lecture	Global South case studies	Floating Rice: an agricultural production, a cultural heritage and a climate resilience practice	Malyne Neang	Hybrid classroom
28 April 12:00–13:00	Workshop	Building a game	Preparation for the Building a game session	Valérie Borrell	Hybrid classroom
28 April 14:00–17:00	Workshop	Building a game	How do the women (rural, young) see their place in African water management in the future?	Valérie Borrell, Alexis Tchiakpé, Brigitte Lundin	Hybrid classroom
29 April 10:00–12:00	Lecture	Global South case studies	The role of gender in water management and the agroecological transition	Malyne Neang	Hybrid classroom
29 April 12:00–13:00	Discussion	Global South case studies	Water Resource and Floods in changing South cities	Roger Moussa, Valérie Borrell	Hybrid classroom
29 April 14:00–16:00	Lecture/ Discussion	Global South case studies	Water access & Water Management in Global South cities and the role of UNESCO	Eric Servat	Hybrid classroom
29 April 16:00–17:00	Workshop	Global South perspective	Reflecting on the connection of the longitudinal challenge with the South Global Challenges	Valérie Borrell, Malyne Neang	Hybrid classroom

Week 12 – Transdisciplinary Research & Water

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
2 May 6 hours	Group/ individual work	Let's finalise!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
3 May 10:00–13:00	Sharing session	Let's share!	Watching the submitted videos related to the field school. Group discussion on identifying solutions to achieve one/or multiple selected SDG targets	Students	Hybrid classroom
3 May 14:00–17:00	Group/ individual work	Let's continue!	Students work on their longitudinal challenge Submit **#11** longitudinal challenge INVESTIGATE+ACT I draft report	Students + Coaches	Hybrid classroom
4 May 10:00–13:00	Strategic game	Shaun the Sheep game	Social and regulatory challenges in implementing sustainable water infrastructure (online city building game as individuals and a group)	Madhu Murali, Students	Online
4 May 14:00–14:30	Lecture	Transdisciplinary Research	Transdisciplinary Research refresh memory on concepts Phase 1	Jake Byrne	Hybrid classroom
4 May 14:30–16:30	Workshop	Transdisciplinary Research	Discussion on the connection between Transdisciplinary Research and Water. Water experts will provide some case studies	Jake Byrne, Nils Ferrand	Hybrid classroom
5 May 6 hours	Group/ individual work	Let's continue!	Reflecting on the connection of the longitudinal challenge with transdisciplinary research	Students + Coaches	Online/at home
6 May 10:00–13:00	Group discussion	Let's share & Draft reports discussion	Students pitch their draft report so far to their peers and the coaches. Students present their challenges followed by a Q&A.	Students + Coaches	Hybrid classroom
6 May 14:00–17:00	Group discussion	Let's share & Draft reports discussion	Students pitch their draft report so far to their peers and the coaches. Students present their challenges followed by a Q&A.	Students + Coaches	Hybrid classroom

Week 13 – Sustainability & Water

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
9 May 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
10 May 10:00–13:00	Group work	Let's continue!	Students work on their longitudinal challenge	Students	Online/hybrid classroom
10 May 14:00–14:30	Lecture	Sustainability	Sustainability refresh memory on concepts Phase 1	Carole-Anne Sénit	Hybrid classroom
10 May 14:30–16:30	Workshop	Sustainability	Discussion on the connection between Sustainability and Water. Water experts will provide some case studies	Carole-Anne Sénit, Annisa Triyanti	Hybrid classroom
11 May 6 hours	Group work	Let's continue!	Reflecting on the connection of the longitudinal challenge with sustainability	Students + Coaches	Online/at home
12 May 10:00–11:30	Lecture	Nature-based solutions	Concepts of Nature-based Solutions	Annisa Triyanti, Trang Vu	Hybrid classroom
12 May 11:30–12:00	Discussion	Nature-based solutions	Brainstorming on general challenges and opportunities of Nature-based Solutions	Annisa Triyanti, Trang Vu	Hybrid classroom
12 May 13:30–15:00	Case study	Nature-based solutions	Group of Students identify and present case studies in different contexts (regarding challenges, geographical and socio-cultural contexts; their challenges and opportunities)	Annisa Triyanti, Valérie Borrell	Hybrid classroom
13 May 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students	Online/hybrid classroom

Week 14 – Social Innovation & Water

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
16 May 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
17 May 10:00–10:30	Lecture	Social Innovation	Social Innovation refresh memory on concepts Phase 1	Ágnes Sarolta Fazekas, Jasper van Vught	Hybrid classroom
17 May 10:30–12:30	Workshop	Social Innovation	Discussion on the connection between Social Innovation and Water. Water experts will provide some case studies	Jasper van Vught	Hybrid classroom
17 May 14:00–17:00	Group work	Let's continue!	Reflecting on the connection of the longitudinal challenge with social innovation	Students + Coaches	Online/hybrid classroom
18 May 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students + Coaches	Online/at home
19 May 10:00–17:00	Workshop	Building a game	How do the women (rural, young) see their place in African water management in the future?	Valérie Borrell, Alexis Tchiakpé, Brigitte Lundin, Malyne Neang	Hybrid classroom
20 May 6 hours	Group work	Let's continue!	Students work on their longitudinal challenge	Students	Online/hybrid classroom

Note this is subject to change

8. Assessment table

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
8	18 April 2022, 23:59 CET	Field Trip Self-Reflection (individual)	Bring together your daily reflections from the field trip with a particular emphasis on your learnings and the impact of the field trip on your longitudinal challenge	Teacher (Patrice, José, András, Ádám)	Professional and personal development
9	22 April 2022, 23:59 CET	Pitch your solutions (group)	Present your findings from the field trip and through your own research on addressing the issue of urban water quality, particularly with an emphasis on addressing your selected SDGs in a form of a video	Teacher (Madhu, José)	Sustainability, Solving challenges, Digital skills, Oral communication
10	22 April 2022, 23:59 CET	Group collaboration	Assess min. 2 peers within your group on their collaboration during the field trip and while developing your pitch	Peer multi-source	Collaboration
11	3 May 2022, 23:59 CET	Draft Report Longitudinal Challenge (INVESTIGATE+ACT I) (individual)	Students hand in a draft report of the investigate+act phase of the CBL framework	Teacher, coaches (Madhu, Ádám, András, Mònica, Valérie, José, Sanne, Annisa)	Sustainability, Solving challenges, Scholarship, Written communication, Transdisciplinarity

9. Literature/reading list

This is a preliminary list of readings, further materials will be provided week by week.

For the Dublin field school:

- https://iwaponline.com/wst/article-abstract/60/3/673/15637/The-water-sensitive-city-principles-for-practice
- https://www.irishtimes.com/news/politics/irish-water-our-favourite-disasters-and-u-turns-1.2299975
- https://www.independent.ie/regionals/dublin/why-is-dublin-bay-making-so-many-swimmers-turn-green-40345017.html
- https://www.dublininquirer.com/2022/01/12/dog-owners-don-t-understand-the-damage-a-single-poo-can-do-to-a-bathing-beach-researcher-says
- https://www.dublinlive.ie/news/dublin-news/portrane-emergency-works-carried-out-19589792
- https://www.water.ie/projects/local-projects/ringsend/
- https://www.acclimatize.eu/publications/

Suggested journals for current research papers:

- Sustainability https://www.mdpi.com/journal/sustainability
- Discover Water https://www.springer.com/journal/43832
- Water Research https://www.journals.elsevier.com/water-research
- Water Resources Management: https://www.springer.com/journal/11269
- Water MDPI https://www.mdpi.com/journal/water
- Water History https://www.springer.com/journal/12685

STUDENT MODULE DESCRIPTOR

Water theme

Flexible Phase (Semester 2)

Part III

Weeks 15–20

CHARM-EU

CHallenge-driven
Accessible
Research-based
Mobile
European
University

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7. Module timetable

Week 15 – INVESTIGATE + Conference preparation

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
23 May 10:00–16:00	Workshop	Poster preparation	Students prepare a poster for the IAHS2022 conference in the topic of their longitudinal challenges.	Ádám Tóth, Valérie Borrell, Students	Hybrid classroom
24 May 10:00–16:00	Workshop	Poster preparation	Students prepare a poster for the IAHS2022 conference in the topic of their longitudinal challenges. Submit **#12** IAHS2022 poster + short explanation	Ádám Tóth, Valérie Borrell, Students	Hybrid classroom
25 May 10:00–16:00	Workshop	Pitch design	Students prepare their pitch for the poster	Ádám Tóth, Valérie Borrell, Students	Hybrid classroom
26 May 6 hours	Group/ individual work	Let's continue!	Students work on their longitudinal challenge	Students	Online/at home
27 May 6 hours	Group/ individual work	Let's finalise!	Students work on their longitudinal challenge Submit **#13** longitudinal challenge INVESTIGATE+ACT II draft report	Students	Online/at home

Week 16 – The XIth Scientific Assembly of the International Association of Hydrological Sciences (IAHS 2022)

http://www.iahs2022.org/?lang=en

Scientific programme: http://www.iahs2022.org/program.asp

Students will present their **poster** at a dedicated session and attend at least **five scientific sessions** on their choice plus take part in the organisation and social events.

A **#14** daily short reflection of your thoughts and experience on the days in the medium you prefer (blog, vlog, podcast, etc.).

Week 17 – Field school preparation

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
6 June 6 hours	**Self-study**	Field school preparation	Preparation for the field school Submit **#14** Conference self-reflection	Students	At home
7 June 6 hours	**Field trip**	Short field trip around Montpellier	Short visit to Maguelonne: salt water and birds	Valérie Borrell, Olivier Duriez	Around Montpellier
8 June 6 hours	**Field trip**	Short field trip around Montpellier	Short visit on the Lez river: from the karst to the seaside	Valérie Borrell, Linda Lucquot	Around Montpellier
9 June 10:00–12:00	**Self-study**	Field school preparation	Preparation for the field school	Students	Hybrid classroom
9 June 13:00–17:00	**Workshop**	Field school preparation	Preparation for the field trip: learning on participative games	Valérie Borrell, Nils Ferrand	Hybrid classroom
10 June 10:00–17:00	**Workshop**	Field school preparation	Preparation for the field trip: reading materials, choosing SDG targets	Valérie Borrell, Nils Ferrand	Hybrid classroom

Week 18 – Field school, Drac River

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss has been selected to focus on. **#15** conceptual model (group assessment)

12 June: leaving by bus around 14:00 CEST, meeting point: University of Montpellier, Faculty of Sciences, Rue du Truel. Bring your dinner!
12 June evening: Welcome

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
13 June 9:00–13:00	**Site visit**	Studying biodiversity and mountains	Visiting a national park, meeting the stakeholders	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
13 June 14:00–17:00	**Workshop**	Studying biodiversity and mountains	Visiting a national park, building a model/game, discussing opportunities	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
14 June 9:00–13:00	**Site visit**	Studying tourism and institutions	Visiting a ski and mountain resort, meeting the stakeholders	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
14 June 14:00–17:00	**Workshop**	Studying tourism and institutions	Visiting a ski and mountain resort, building a model/game, discussing opportunities	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
15 June 9:00–13:00	**Site visit**	Studying agriculture and restoration	Looking into irrigation and river restoration, meeting the stakeholders	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
15 June 14:00–17:00	**Workshop**	Studying agriculture and restoration	Looking into irrigation and river restoration, building a model/game, discussing opportunities	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
16 June 9:00–13:00	**Site visit**	Studying hydroelectricity and hazards	Looking into energy generation, meeting the stakeholders	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
16 June 14:00–17:00	**Workshop**	Studying hydroelectricity and hazards	Looking into energy generation, building a model/game, discussing opportunities	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river
17 June 9:00–13:00	**Site visit**	Studying pollution and urban environment	Looking into industrial activities and pollution, meeting the stakeholders	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river, Grenoble
17 June 14:00–17:00	**Workshop**	Studying pollution and urban environment	Looking into industrial activities and pollution, building a model/game, discussing opportunities	Nils Ferrand, Valérie Borrell, Eva Perrier	Drac river, Grenoble

Week 19 – ACT week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
20 June 10:00–12:00	**Workshop**	Summarising the field school	Wrap-up of the conceptual model of the Drac river	Students	Online
20 June 14:00–17:00	**Group/ individual work**	Coach meeting	Students meet their coaches to discuss their longitudinal challenge	Students + Coaches	Hybrid classroom/ At home
21 June	**Group/ individual work**	Coach meeting	Students meet all the coaches to discuss their longitudinal challenge	Students + Coaches	Hybrid classroom/At home
22 June	**Group/ individual work**	Let's continue!	Students work on their longitudinal challenge	Students	At home
23 June	**Group/ individual work**	Let's continue!	Students work on their longitudinal challenge	Students	Hybrid classroom/ At home
24 June	**Group/ individual work**	Let's finalise!	Students work on their longitudinal challenge Submit **#16** Final report Longitudinal challenge	Students	At home

Week 20 – Cross-thematic week

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
27 June 2 hours	**Self-study**	Self-preparation	Preparation for the feedback session **#17** group collaboration	Students	At home
28 June 10:00–13:00	**Workshop**	Feedback session & closing event	Reflection on the progress during the semester, collecting feedback	Sanne van Vugt, Core teachers	Hybrid classroom
29 June 10:00–11:00	**Workshop**	Welcome address, Introduction of the programme	Welcome Address Introduction of the programme: Present outline of the days, organizational issues, and assessment methods. Play Phase 2 video edited by WP9. Icebreaking activity (KCT quiz) Answering questions of students. Breaking up students into their original long-term assessment groups (total of around 12-15 groups)	Madhu Murali	Hybrid Classroom/Online
29 June 11:00–13:00	**Workshop**	Matchmaking Session 1	Project groups meet each other in channels and discuss their work. Each group to collate other potential groups to work with and why.	Students & invited Phase 1/2 teachers	Hybrid Classroom/Online
29 June 14:00–16:00	**Workshop**	Masterchef contest	Students choose the lowest impact, most sustainable and healthiest ingredients to make a meal from some pre-organized groceries. They explain their reasoning for selecting their ingredients in a short pitch and cook the meal at home in groups. Students to send photos and tasting to judging panel.	Madhu Murali, Josefina Martínez Soler	Student kitchen + Hybrid Classroom

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
30 June 10:00–11:00	Workshop	Groupwork	Present a Case Study on the theme of 'Sustainable Seafood' for students to analyse in cross-thematic groups. Students develop solutions to the challenge. 15 minutes for presentation of the case study and rest for discussion within groups.	Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz	Hybrid Classroom and local discussion
30 June 11:00–12:00	Workshop	Case study discussion	Students present their analysis of the Case Study and discussion on their solutions	Students, Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz, Judging panel	Hybrid Classroom and local discussion
30 June 12:00–13:00	Workshop	Matchmaking Session 2	Reduction of the 12-15 groups to a consortia of 3/4 groups with other groups having similar challenges but possibly offering other perspectives. Start discussions on broadening your challenges to incorporate the new perspectives.	Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz	Hybrid Classroom or online
30 June 14:00–17:00	Workshop	Redefine your challenge	Continue to broaden up the perspectives of your challenge with the newly formed partners. Create either a video or podcast incorporating the newly integrated challenges & recommendations on how to tackle them.	Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz	Hybrid Classroom or online

Date and time	Activity	Name of the activity	Explanation	Responsible for delivery	Location
1 July 10:00–12:00	Workshop	Moving to Phase 3 Session	Brief introduction on Phase 3	Tahmer Sharkawi	Hybrid classroom/online
1 July 12:00–13:00	Workshop	Evaluation	Teacher & student evaluation of Phase 2 of the master	Students and teachers	Hybrid classroom/online
1 July 14:00–15:00	Workshop	And now, act!	Dramatic scenario 1 - Short dramatic play: Students to act out what they have learned, their biggest challenge, or any feedback they have on the Master's. Preparation time 1 hours. Local Teams.	Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz	Hybrid classroom
1 July 15:15–16:30	Workshop	And now, act! 2	Act the play and feedback. 15 minutes to present final results	Students & invited core teachers	Hybrid classroom
1 July 16:30–17:15	Workshop	Awards, Thanks and Closure	Closing event	Students, Josefina Martínez Soler, Madhu Murali, Viktor G. Mihucz & invited Phase 1/2 teachers	Hybrid classroom

Note this is subject to change

8. Assessment table

Nr.	Student due date and time	Assessment Title	Assessment description	Assessor	PLO Domains assessed
12	24 May 2022, 23:59 CET	IAHS2022 poster (individual)	Students prepare a poster for the IAHS2022 conference in the topic of their longitudinal challenges	Teacher, coaches (Madhu, Adam, Andras, Patrice, Monica, Valerie, Jose, Annisa, Sanne)	Written communication, Scholarship, Digital skills
13	27 May 2022, 23:59 CET	Draft Report Longitudinal Challenge (INVESTIGATE+ACT II) (individual)	Students hand in a draft report of the investigate+act phase of the CBL framework	Teacher, coaches (Madhu, Adam, Andras, Patrice, Monica, Valerie, Jose, Annisa, Sanne)	Sustainability, Solving challenges, Scholarship, Written communication, Transdisciplinarity
14	6 June 2022, 23:59 CET	Conference Self-Reflection (individual)	Bring together your daily reflections from the conference with a particular emphasis on your learnings and the impact of the conference on your longitudinal challenge	Teacher (Andras, Adam)	Professional and personal development
15	17 June 2022, 23:59 CET	Conceptual model building (group)	Building a transdisciplinary conceptual model of the Drac river (continuous assessment during the week)	Teacher (Valérie)	Sustainability, Transdisciplinarity
16	24 June 2022, 23:59 CET	Final Report Longitudinal Challenge (individual)	Students hand in the final report of their longitudinal challenge	Teacher, coaches (Madhu, Adam, Andras, Patrice, Monica, Valerie, Jose, Annisa, Sanne)	Sustainability, Solving challenges, Scholarship, Written communication, Transdisciplinarity
17	27 June 2022, 23:59 CET	Longituninal group collaboration	Assess min. 2 peers within your group on their collaboration during the longitudinal challenge	Peer multi-source	Collaboration

9. Literature/reading list

This is a preliminary list of readings, further materials will be provided week by week.

Suggested journals for current research papers:

- Sustainability https://www.mdpi.com/journal/sustainability
- Discover Water https://www.springer.com/journal/43832
- Water Research https://www.journals.elsevier.com/water-research
- Water Resources Management: https://www.springer.com/journal/11269
- Water MDPI https://www.mdpi.com/journal/water
- Water History https://www.springer.com/journal/12685

CHARM-EU

CHallenge-driven Accessible Research-based Mobile European University

Co-funded by the Erasmus+ Programme of the European Union

Student Module Descriptor

Capstone Phase (Semester 3)

Capstone

Universitat de Barcelona
Trinity College Dublin, Coláiste na Tríonóide, Baile Átha Cliath, The University of Dublin
Utrecht University
Eötvös Loránd University | Budapest
Université de Montpellier

Student Module Descriptor:
The Capstone

Who is this resource for?
This resource is written for students from the CHARM-EU Master's programme 'Global Challenges for Sustainability' and other interested professionals to learn more about the content and delivery of the Capstone. It will be shared with students at least one month before the start of the module via e-mail and in MS Teams.

What is the aim of this resource?
The Student Module Descriptor provides information for students and other interested professionals to learn more about the content and delivery of the Capstone. The content of this resource should provide the information needed for students to prepare for the Capstone and provide practical information. It will also provide a clear overview of activities and expectations. Please note that (minor) changes can still occur in the schedule, which will be communicated via e-mail and/or MS Teams.

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NB: This module descriptor is a working document. For the latest information, please refer to the schedule and documents shared in MS Teams.

Module details

Module title: Capstone
Academic year: 2022-2023
Phase of the Master's: 3rd and final phase
Number of ECs: 30ECs, ca. 750 hrs
Mode of delivery: combination of hybrid classrooms and (asynchronous & synchronous) online activities. For the educational activities (contact hours, see module timetable below), students are expected to come to the hybrid classrooms. Team and individual work can be done online or in one of the university rooms. Students will be given information on how they can book these rooms.

Module coordinators: Marjanneke Vijge (UU m.j.vijge@uu.nl), Julia Tschersich (UU j.tschersich@uu.nl)
Capstone team: Avelina Tortosa Moreno (UB), Núria Casamitjana (UB), Jake Byrne (TCD), Michelle Share (TCD), Dimitra Mousa (UU), Carole-Anne Sénit (UU), Jesus Reyes (ELTE), Tahmer Sharkwai (UM), Marie Helene Murillo (UM), Alèxia Torner Crespo (student representative), Emma Swift (student representative).
Educationalists/experts: Vanessa Vigano (UM), Isaac Calduch (UB), Sanne van Vugt (UU), Lubberta de Jong (UU)
Local Capstone facilitators: Marjanneke Vijge/Julia Tschersich (UU), Núria Casamitjana (UB), Jake Byrne (TCD), Jesús Reyes (ELTE), Tahmer Sharkwai (UM)
Teachers: see module timetable below
Start date – end date: 5 September 2022 – 3 February 2023 (19 teaching weeks)
Assessments: see assessment table (below) and assessment descriptions (separate document)

Module design and content

The Capstone

A capstone is defined as a lengthy (in this case 19 weeks) project functioning as a culminating academic and intellectual experience for students in the final stage of their master's programme. During this phase, students, academic and extra-academic actors come together and identify, investigate and address authentic, real-world and inter- and transdisciplinary challenges. Students take their knowledge and skills gained during the rest of the programme a step further by applying these in a more practical manner, which is supported by experiential, challenge-based and situated learning.

Module high-level learning aims:

In the Capstone, students in collaboration with fellow students, academic and extra-academic actors, investigate and evaluate complex sustainability challenges from a variety of intercultural and transdisciplinary perspectives. They will creatively devise, implement and evaluate robust, adaptable, ethical and sustainable solutions for complex societal challenges. While doing so, the Capstone prepares students for their future careers by building relevant skills and networks with academics and extra-academic actors. Overall, the objectives of the Capstone include synthesis of prior learning, refinement of skills, development of personal attributes, preparation of students for future careers, facilitation of academic and extra-academic linkages, supporting of staff research activities, and quality assurance of graduates.

Connection with other phases and modules:

Before finalising and passing the Capstone, students should have also passed phase 1 and 2 of the Master. The Capstone takes place in the final, third phase of the Master's programme. It provides proof of students' capability to carry out independent as well as transdisciplinary research and to analyse, evaluate and address sustainability challenges. It serves as the final test of students' achievement of all the Programme Learning Outcomes (see appendix 1).

Module Learning Outcomes

The Capstone Module Learning Outcomes in relation to the Programme Learning Outcomes (PLOs) are as follows (see appendix I for an overview of the PLO domains):

1. Further develop communication skills and demonstrate those skills sensitively and professionally in teamwork, presentation, pitching, negotiation and coordination. [PLO.5, 6]
2. Develop and demonstrate self-awareness of personal leadership style in the collaboration within an inter/transdisciplinary team. [PLO.5, 6]
3. Demonstrate a creative mindset by designing new concepts / solutions for sustainability challenges. [PLO.2, 6]
4. Demonstrate expertise in the identification and application of the latest technological tools to source, analyse, handle, use and communicate complex bodies of data ethically. [PLO.4]
5. Reflect on how the challenge can have a personal impact on the student. [PLO.6]
6. Analyse individual, societal and ecological needs and explore opportunities for solutions within a societal, scientific, economic context. [PLO.1, 2, 3]
7. Describe and critically appraise a real-world sustainability challenge from various disciplinary perspectives to determine and frame the challenge. [PLO.2, 3, 5]
8. Outline different disciplinary approaches, intercultural perspectives, and their interrelationships to identify (e.g. social, cultural, political, economic) actors involved in and affected by the challenge. [PLO.1, 2, 3, 5]
9. Identify and execute methodologies, analyse data and synthesize information to understand the challenge and areas for innovation, relevant for addressing the challenge. [PLO.1, 2, 3, 4, 5]
10. Articulate and develop sustainable and ethical solution prototypes to a complex societal challenge, as part of a transdisciplinary team, while considering the needs and perspectives of multiple stakeholders and disciplines [PLO.1, 2, 3, 5, 6]
11. Implement and monitor sustainable and ethical solution prototypes and validate in collaboration with extra-academic actors the solution based on its value for the planet and different groups of people. [PLO.1, 3, 4, 5, 6]
12. Critically reflect on one solution from the validated prototypes and design it. [PLO.3, 4, 5]
13. Formulate a systematic and holistic implementation plan for the sustainable and ethical solution within the environment of the extra-academic actors. [PLO.4, 5, 6]
14. Implement, monitor and critically evaluate the solution for the identified challenge, using appropriate (technological) tools and combining various disciplinary perspectives. [PLO.3, 4, 6]
15. Effectively communicate the inter- and transdisciplinary research results and developed solution to a diverse (academic and non-academic) audience through identification and use of the most appropriate media/technological tools/resources. [PLO.4, 5, 6]
16. Critically reflect on the individual and collaborative learning process, personal and professional developments and results of implementation. [PLO.5, 6]

Capstone challenges

The Capstone challenges have been pre-defined with external stakeholders, sometimes in collaboration with students and/or academic staff. For more information about the (criteria for) Capstone challenges, see https://www.charm-eu.eu/become-part-capstone.

Roles and responsibilities

Student teams

During the Capstone, students work together in teams of 4-6 students, with in total 13 teams across five universities. Each student has a team role crucial for the support of the project and the delivery of the team assessments and final Capstone report and product. Team roles can be linked to the different analyses or sub research questions that students would like to work on, depending on students' disciplinary backgrounds and intended career paths. Students can define the team roles themselves, which can be part of the team agreement (see annex I in the assessment descriptions). Examples of

team roles include: project manager; extra-academic collaboration manager; visual communications manager; external communications manager; research manager.

Because the Capstone relies on group work, fellow students are partly responsible for their team members' grade. Students who cannot attend an educational activity or team meeting (for a serious reason only) must immediately notify and motivate this to the module coordinator or their team members, as per the procedures for students' absence. Students within teams exchange e-mail addresses, and channels within MS Teams have been generated for ease of communication.

Special attention is needed with respect to comparable workload among team members. Again, the team agreement formulated at the start of the Capstone phase can help in this regard (see annex I in the assessment description). The team should notify members who do not actively contribute to the team of their responsibilities. If this does not lead to improvements, the academic supervisor should be informed as soon as possible. Complaints about free riders at a later stage, e.g. when a dissatisfactory grade is obtained for the final Capstone report, will not be taken into consideration. In order to reflect on both the individual and team progress, individual and team reflections on the group process form part of the Capstone proposal and the draft/final Capstone report and product assessments (see annex II and III in the assessment descriptions). The individual and group reflections are specifically designed as a milestone to decide whether everyone in the team is performing at their best and how to further improve individual and team progress.

External stakeholders

External stakeholders (extra-academic actors) who are involved in the Capstone can include government agencies, intergovernmental organisations, NGOs, grassroots, social movements, businesses, etc. Each student team engages with a number of different stakeholders, though there is always one main stakeholder with a special interest in addressing the Capstone challenge, the so-called client. The clients are most often the ones who submitted the Capstone challenge. The client dedicates time to the Capstone to participate in monthly meetings with the students (if relevant joined by the academic supervisor), as well as 1 round of feedback/assessment of the Capstone proposal, presentation and final Capstone product. Students are kindly asked to communicate effectively and as a group with their main client and prevent over-asking/burdening the stakeholder. In their Capstone challenge, student teams carry out stakeholder analyses and engage with at least 3 different types of stakeholders from both the public (government agencies, intergovernmental organisations) and the private sector (NGOs, grassroots, social movements, businesses).

Extra-academic actors can take up the following tasks during the Capstone:

- Co-define the challenge together with students and academic supervisors;
- Collaborate with students and academic supervisors in analysing, evaluating and addressing the Capstone challenge;
- Provide one-off or longer-term expertise, technology, tools, methods, guidelines, etc.;
- Grant students access to data in the form of interviews, databases, facilitation of field work, etc.;
- Assist students in the communication and outreach of the final Capstone product;
- Assess students based on their Capstone proposal, presentations and final outputs;
- Give lectures or workshops for skill development, or (co-)organise training;
- Invite students for their events, workshops, webinars, etc.

Academic supervisors

Academic supervisors guide students in defining, analysing and addressing the Capstone challenge, and are also the ones who assess the team assessments (see assessment table below). Supervisors help students in: managing their relation with external stakeholders; developing theoretical frameworks, (research) methods and overall design of the Capstone; finding appropriate (academic) resources; and

reflecting on the group process. Supervisors are based at the university where the challenge is mainly taking place, but can also go on mobility if needed. Supervisors have time available, have a PhD degree, are employed by a CHARM-EU university (or if external are guided by a university employee), have experience in Master and/or Bachelor thesis supervision, are able to connect to extra-academic actors, and are experts in the field of the challenge. Supervisors are given a supervisor guide with information on the CHARM-EU educational principles, assessment criteria, milestones and key deliverables of the Capstone.

The module timetable below provides suggestions for the number of supervision meetings that student teams have with their supervisor. Students and supervisors are kindly asked to stick (close) to these suggested meeting times in order to prevent over- or under reliance on the supervisor. In case student teams experience challenges with their supervisor, they can contact the Capstone coordinators.

Teachers / assessors

Teachers, including KCT members, will be responsible for giving workshops or working sessions. These can be focused on empirical themes, theoretical/conceptual frameworks, or research methods. Assessors will be responsible for assessing the individual assessments, i.e. the individual data analysis chapter. Finally, teachers and KCT members can be approached by student teams for advice/expertise on specific empirical, theoretical or practical topics.

Mentors

Throughout the entire CHARM-EU Master's programme, mentors guide students in their reflection on personal development, career perspectives, (transdisciplinary) challenges that students encounter and their role in student teams. During the Capstone, like in phase 1 and 2, three hours are allocated for individual mentor meetings. The Capstone phase assessment includes one individual Personal Development Plan that is assessed by the mentor.

The tasks of the mentors are the following:

- Guide a student throughout the whole Master's programme;
- Guide and coach students in their learning journey through student-mentor meetings;
- Assist students in formulating (personal) learning goals, documented in the e-portfolio;
- Monitor progress in relation to Programme Learning Outcome competencies and provide a mentor advice;
- Contact the Portfolio Assessment Committee if needed (in case students have performance concerns).

Assessment

An overview of the assessments can be found in the assessment table at the end of this document. More details of the assessments can be found in the assessment descriptions.

Ethics

Ethical considerations need to be part of the transdisciplinary research methodology in the Capstone proposal and draft/final Capstone report and product. The academic supervisor can advise on the need/procedures for obtaining ethical clearance. Since CHARM-EU is not a legal entity, ethical clearance cannot be arranged at a central level, and so ethical procedures vary across (departments/faculties of) the partner universities where the team and supervisor are based.

Inclusivity

In CHARM-EU, we believe in fostering an open, welcoming atmosphere where diversity is recognised, respected, and seen as a source of strength and benefit to the CHARM-EU community and beyond. We

are committed to creating an inclusive teaching and learning environment where barriers to success are removed, and individuals' access and participation needs are addressed and catered to. In case of special needs, please contact the Capstone coordinator.

Study materials

The following materials will be shared in MS Teams:

- Useful materials related to the workshops or working sessions;
- Guidelines on how to execute Capstone challenges;
- The rest of the literature will need to be gathered by the teams and individual students, depending on the challenge and conceptual framework used. The academic supervisor, stakeholders and other staff can provide suggestions.

Types of learning activities

This table describes the type of learning activities you will be engaged in during this module:

Learning activity	Explanation
Lecture (2h)	Lecture to explain content, objectives, process and schedule of the Capstone
Workshop for skill development (2h)	Workshop by expert (teacher and/or external stakeholder) to build skills necessary for the execution of the Capstone
Working session (3h)	Team and/or individual working session, guided by local facilitators and/or experts on specific topics
Optional working session (3h)	Experts/teachers/Capstone team members are available online to answer questions and discuss the Capstone with student teams (max. 20 min. each)
Catch up session (student-led sharing session) (1h)	Each time, students from another university are responsible to organise and host a sharing session. They share their Capstone challenges, get input from their peers, share struggles and create assignment for all students (e.g. memes, share tips, share movies). Teachers can take part in these sessions as well
Supervisor/assessor meeting: team (30 min-1h) and individual (30 min)	Self-organised by students and supervisors. Suggested number of meetings and topics to be covered are indicated in the timetable below
Meeting with external stakeholder (team)	Self-organised by students. Suggested number of meetings and topics to be covered are indicated in the timetable below
Team and Individual Work	Self-organised by students. Topics and milestones are indicated in the timetable below

Mobility

1. **Phase mobility:** All students who go on phase mobility and are eligible for Erasmus+ can apply for a grant. Information has been shared in the CHARM-EU newsletter.
2. **Short-term mobility:** Students from the global teams who are not located in TCD can apply for short-term mobility to travel to TCD. Information will be made available to these teams in due course, but please note that no short-term mobility is possible before mid-October 2022.

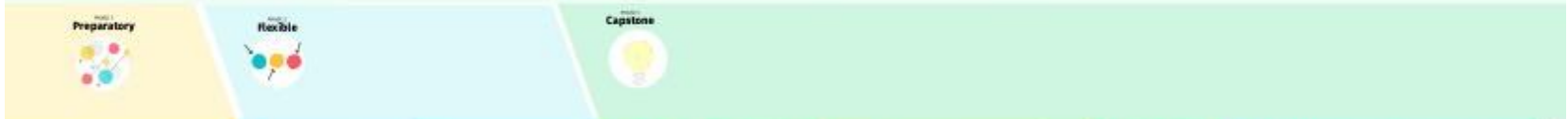
Final multi-day Grand Finale: a physical conference is foreseen in the last week of the Capstone (week 19). More information will follow in due course.

Module timetable

The Capstone takes place in phase 3 for a period of 19 weeks, though students start thinking about the problem spaces to be selected for the Capstone in phase 1 and 2. The Capstone has the following stages:

1. Empathise and identify the big idea (phase 1), the problem space (phase 2) & forming student teams (end of phase 2)
2. Define the sustainability challenge & develop a Capstone proposal (week 1-5 of phase 3)
3. Address the sustainability challenge (week 5-15 of phase 3)
4. Draft and verify results (week 15-17 of phase 3)
5. Publish, communicate and outreach of final results and reflections (week 18-19 of phase 3)

The Capstone timeline



Empathise and identify the big idea

September 2021
First World Café

Identify the problem space

March 2022
- Call for Challenge: All external stakeholders and CHARM-EU academic staff are invited to submit a challenge. This does not guarantee or necessitate stakeholders, staff or students to work on the Capstone challenge.
- Informative session for students on the Capstone
- Polling of students' interests: Students are invited to express their interests for the focus of their Capstone challenge and their preferred final product

April 2022
- Capstone team checks all challenges against eligibility and feasibility criteria
- Publication of challenges: Capstone team makes challenges available to all students
- Second World Café (20 April): This World Café is designed as a matching event to gather students, external stakeholders, and academic staff around challenges.

Forming student teams

28 June-1 July
Cross-thematic conference with some sessions on the Capstone

May 2022
- Challenge selection: Students submit their top 3 preferences for challenges
- Team formation: Teachers form student teams based on students' preferences for challenges, motivation, preferences for final Capstone products, inclusivity, language requirements (if any), and the university that students are based in (or will go to if they go on mobility)
- Final decision on student teams, challenges, and location

Define the challenge & develop proposal *(w1-5)*

September 2022
- Re-connect to external stakeholders
- Further define sustainability challenge
- Develop & finalise research proposal through exchanges with external stakeholders, supervisors and students

Address the sustainability challenge *(w5-15)*

October-November 2022
Work on Capstone challenge

December 2022 to Mid-January 2023
- Submit draft project design
- Receive feedback from supervisors and external stakeholders
- Present Capstone output to external stakeholders, supervisors and students

Draft and verify results *(w15-17)*

Publish, communicate and outreach of final results and reflections *(w18-19)*

Second half of January to 6 February 2023
- Revise and finalise Capstone output
- Personal reflection
- Hand in individual assessments

Week 1: Team building & getting to know the challenge

Milestone:

- Team agreement (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Thu 1 & Fri 2 Sept	Induction	Induction days together with 2nd cohort (phase 1)			JVAO	
Mo 5 Sept or Tue 6 Sept (time tbc)	Keynote from the European Commission		Opening speeches from Catherine Comiskey and member(s) of the European Commission on the New European Bauhaus	2h	Moderated by Marjanneke Vijge (UU)	Online
Mo 5 Sept & Tue 6 Sept	Self-study	Students meet their team and familiarise with Capstone materials	Students review information and provided resources by Capstone team. Students review phase 1/2 materials. Students start exploring and discussing their Capstone challenge		Students	
Wed 7 Sept 10-12 CET	Lecture	Presentation of the Capstone	Explanation of expectations, assessments, milestones, supervision structures, contact hours, schedule and study materials	2h	Capstone coordinators Marjanneke Vijge, Julia Tschersich (UU), rest of the Capstone team	Hybrid classroom
13-16 CET	Skill development workshop	Team building	Conflict management/resolution, negotiation. Transnational/ intercultural learning. Students work on team agreement	3h	Daniel Griffin (lead, TCD)	Hybrid classroom
	Team and Individual Work	Milestone: team agreement (not assessed in Scorion but part of Capstone proposal)	Team agreement: roles, responsibilities and establish procedures, communication, conflict resolution. This should be included		Students	

			in the Capstone proposal but can be treated as a living document			
Date tbc by students/ supervisor	**Supervisor meeting**		Get to know each other, discuss expectations and team agreement	1h	Supervisor & students	
Thu 8 Sept & Fri 9 Sept	**Team and Individual Work**		Formulate & identify Capstone challenge		Students	

<u>Week 2: Exploring the challenge</u>

Milestone:

- Stakeholder and system mapping (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Date tbc by students/ stakeholder	**Meeting with external stakeholders/ self-organised field trip**	Meet the stakeholders	Students engage with the external stakeholder(s) (self-organised)		Students	
Tue 13 Sept	**Team and Individual Work**		Exploratory research on big idea and essential questions. Explore stakeholder mapping and stakeholder engagement		Students	
Wed 14 Sept 10-13 CET	**Working/ review session**	System & stakeholder mapping	Design thinking recap: what does design thinking mean for the Capstone challenge. Transdisciplinary design, planning and engagement: what does transdisciplinarity mean for Capstone challenge. Stakeholder	3h	Jake Byrne (lead TCD), Sonam Banka (TCD) (tbc), Julia Tschersich (UU), External stakeholders (tbc)	Hybrid classroom

			mapping, stakeholder engagement plan			
Thu 15 Sept	**Team and Individual Work**	Milestone: Stakeholder and system mapping (not assessed in Scorion but part of Capstone proposal and report)	Students deliver a stakeholders and system mapping. This should be included in the Capstone proposal and report		Students	
Date tbc by students/ supervisor	**Supervisor meeting**		Identify scope of challenge and discuss possible research questions, based on stakeholder and system mapping	30 min-1h	Supervisor & students	

Week 3: Project Management

Milestone:

- Project management plan (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 19 Sept & Tue 20 Sept	**Team and Individual Work**	Work on project management plan & research questions	Refinement of challenge and research questions, project management plan, integrate feedback from supervisor, further literature review		Students	
Wed 21 Sept 10-13 CET	**Working session with local facilitation**	Working session on refining research questions	Local facilitators/experts guide students in refining their research questions. Scoping literature review	3h	Julia Tschersich (lead, UU), Marjanneke Vijge (UU), Michelle Share (TCD) (tbc), local facilitators	Hybrid classroom
14-16 CET	**Skill Development Workshop**	Project management	Project management: tools for project management, time management, resource	2h	Dimitra Mousa (lead, UU), Daniel Griffin (TCD), CHARM-EU project manager (tbc)	Hybrid classroom

			management, finance. Students work on project management plan			
	Team and Individual Work	Milestone: Project management plan (not assessed in Scorion but part of Capstone proposal and report)	Students deliver a project management plan for their challenge, including stakeholder engagement plan. This should be included in the Capstone proposal and report			
Date tbc by students/ supervisor	Supervisor meeting		Refine research questions, Capstone proposal, project management plan	30 min-1h	Supervisor & students	
Thu 22 Sept	Team and individual work	Work on project management plan & research questions	Refinement of challenge and research questions, project management plan, integrate feedback from supervisor, further literature review		Students	

Week 4: Capstone proposal

Milestone:

- Literature review and proposed research questions (team and individual)

Date and time	Activity	Name of the activity	Explanation	Time	Responsible for delivery	Location
Mo 26 Sept & Tue 27 Sept	Team and Individual Work	Work on Capstone proposal	Literature review: identify research gaps		Students	
Wed 28 Sept 10-13 CET	Skill Development Workshop	Engaging and facilitating stakeholders / Creating impact	Just Transition Arenas: Creating collaborative space for just sustainability transitions – interactive workshop with application to challenges	3h	Julia Tschersich (lead, UU), Flor Avelino (tbc, UU/DRIFT) external stakeholders	Hybrid classroom

	Team and individual work	Milestone: Literature review and proposed research questions (not assessed in Scorion but part of Capstone proposal)	Literature review & proposed research question and sub questions		Students	
Date tbc by students/ supervisor	Supervisor meeting		Refine research questions, Capstone proposal, literature review	30 min-1h	Supervisor & students	
Thu 29 Sept	Team and Individual Work	Work on Capstone proposal			Students	
Fri 30 Sept 10-13 CET	Working session	Ethics & overview of research methods, avoiding biases in data analysis, etc.		3h	Dimitra Mousa (lead, UU), Michelle Share (TCD), librarians, local facilitators	Hybrid classroom

Week 5: Capstone proposal

Assessment:

- Deliverable #1a,b: Pitches of draft Capstone proposal (team)
- Deliverable #2a,b: Capstone proposal (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Date tbc by students/ stakeholder	Consultation with stakeholders				Students	

	(self-organised)					
Mon 3 Oct	Team and Individual Work	Work on Capstone proposal & consultation with stakeholders	Integrate feedback from stakeholders		Students	
Tue 4 Oct	Team and Individual Work		Work on Capstone proposal and presentation		Students	
Wed 5 Oct 10-12 CET	Student presentations	Assessment Deliverable #1 (team)	Pitches of draft Capstone proposal in parallel sessions, sharing Capstone challenges with stakeholders and peers	2h	Academic supervisor and peers to formally assess and give feedback. External stakeholder to give feedback during the session	Hybrid classroom
Thu 6 Oct	Team and Individual Work		Incorporate feedback in Capstone proposal			
Fri 7 Oct	Team and Individual Work	Assessment Deliverable #2 (team)	Capstone proposal		Supervisor and 2nd reader to assess and give feedback	

Week 6: Implementation plan for Capstone & team gap analysis

Milestone:

- Team gap analysis (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 10 Oct & Tue 11 Oct	Team and individual work		Work on team gap analysis & implementation of Capstone		Students	

			proposal (e.g. planning of field work)			
Wed 12 Oct 10-12 CET	**Catch up session**		Progress update: Students update each other on the progress of their challenge	2h	Sanne van Vugt (educationalist, UU) to introduce innovative ways to exchange. Explanation of team gap analysis. Students in one university (rotating)	Online (hybrid classroom not available)
	Team and individual work	Milestone: team gap analysis (not assessed in Scorion)	Creating the team gap analysis. What knowledge resources, new skills or financial resources does the team need in order to execute the research plan. This should be included in the Capstone report. Students are encouraged to also discuss the gap analysis with their mentors.		In addition to the team gap analysis to be included in the Capstone report, students fill out an online survey with their skill gaps. Based on this, skill development workshops will be fine-tuned	
Thu 13 Oct	**Team and individual work**		Integrate feedback on Capstone proposal and start planning Capstone		Students	
Fri 14 Oct 10-12 CET	**Skill development workshop**	Recap academic writing	Workshop on referencing, style, plagiarism, structure. How to academically write about data collection and analysis	2h	Dimitra Mousa (lead, UU), Skills lab UU, Silvia Gallagher (TCD)	Hybrid classroom

<u>Week 7: Research methods & data generation</u>

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 17 Oct & Tue 18 Oct	**Team and Individual work**	Research methods and data generation			Students	

Wed 19 Oct 10-13 CET	**Workshing session**	Parallel sessions on different types of data collection/generation	Tailor-made sessions on the basis of student needs regarding data generation (based on team gap analysis)	3h	Marjanneke Vijge (UU), experts on qualitative and quantitative methods	Hybrid classroom
Date tbc by students/ supervisor	**Supervisor meeting**		Discuss data generation plans	30 min-1h	Supervisor & students	
Thu 20 Oct	**Team and Individual work**	Research methods and data generation			Students	
Fri 21 Oct 10-11 CET	**Catch up session**	Progress update	Students update each other on the progress of their challenge	1h	Students in one university (rotating)	Hybrid classroom
	Team and Individual work	Research methods and data generation			Students	

Week 8: Data generation

No workshops/working sessions, field work can be planned

Milestone:

- Stakeholder engagement diary (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Date tbc by students/ stakeholder	**Meeting with external stakeholders / self-organised fieldtrip**		At the end of this week the team has to have an external stakeholder visit to discuss data generation		Students	
Mo 24 Oct & Tue 25 Oct	**Team and Individual work**		Data generation		Students	
Wed 26 Oct	**Catch up session**	Progress update	Students update each other on the progress of their challenge	1h	Students in one university (rotating)	Hybrid classroom

10-11 CET						
Date tbc by students/ supervisor	**Supervisor meeting**		Discuss data generation	30 min-1h	Supervisor & students	
Thu 27 Oct	**Team and Individual work**		Data generation		Students	
Fri 28 Oct	**Team and Individual work**	Milestone: Stakeholder engagement diary (not assessed in Scorion)	Engagement plan/diary: reflection on feedback received and actions taken from stakeholder meetings so far. Stakeholder management plan and engagement diary are included in the Capstone report.			

Week 9: Data generation

Reading week: no contact hours, field work can be planned

Week 10: Individual & team data analysis

Milestone:

- Draft individual data analysis chapter (individual)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 7 Nov & Tue 8 Nov	**Individual work**		Work on individual data analysis chapter. Students exchange chapters for peer review (self-organised)		Students, informal peer feedback	
Tue 8 Nov	**Individual work**	Milestone: Draft individual data	Individual data analysis chapter, including methods, data generation		Assessor to give feedback during individual meeting & peer assessment (within team)	

		analysis chapter (not assessed in Scorion)	and data analysis plan for individual research component			
Wed 9 Nov 10-13 CET	**Working session**	Parallel sessions on different types of data analysis	Tailor-made session on the basis of student needs regarding data analysis (based on team gap analysis)	3h	Julia Tschersich (UU), Marjanneke Vijge (UU), experts on qualitative and quantitative methods	Hybrid classroom
Date tbc by students/ supervisor/ assessors	**Individual supervisor/ assessor meeting**		INDIVIDUAL meeting with assessor and/or supervisor on individual data analysis chapter	30 min per student	Supervisor and/or assessor & students	
Thu 10 Nov & Fri 11 Nov	**Individual work**		Incorporate feedback in individual data analysis chapter		Students	

<u>Week 11: Individual data analysis</u>

Assessment:

- Deliverable #3a,b: Individual data analysis chapter (individual) (final deadline Nov 25)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 14 & Tue 15 Nov	**Individual work**		Work on individual data analysis chapter			
Date tbc by students/ supervisor/ assessor	**Individual supervisor/ assessor meeting**		INDIVIDUAL meeting with assessor and/or supervisor on individual research component	30 min per student	Supervisor and/or assessor & students	
Wed 16 Nov 10-12 CET	**Skill development workshop**	Data visualisation	How to present and structure data and analyses?	2h	Jesús Reyes (lead, ELTE), expert on data visualisation (tbd)	Hybrid classroom
12-15 CET	**Working session**	Data visualisation	Individual and team work on data analysis and visualisation	3h	Jesús Reyes (lead, ELTE), local facilitators, experts	Hybrid classroom

Fri 18 Nov	**Team and Individual work**		Individual and team work on data analysis		Students	

Week 12: Group synthesis on data analysis

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 21 Nov & Tue 22 Nov	**Team and Individual work**		Bringing together individual reports into a synthesis that answers overarching research question – to present to supervisor on Wednesday			
Wed 23 Nov 10-11 CET	**Skill development workshop**		Teasers of the different Capstone products and solution types	1h	Dimitra Mousa (lead, UU)	Hybrid classroom
Wed 23 Nov 11-13 CET	**Working session**	Transfer from data analysis to solution prototyping	Brainstorming exercise: teams swap challenges and ideate for each other's challenge. Define 'how-might-we' questions	2h	Jake Byrne (lead, TCD), Alvaro Lopez Navarro (UU) (tbc)	Hybrid classroom
Date tbc by students/ supervisor	**Supervisor meeting**		Present group synthesis to supervisor, oral feedback	30 min-1h	Supervisor & students	
Thu 24 Nov	**Team and individual work**		Incorporate supervisor feedback & Prepare pitch for stakeholder about group project			
Date tbc by students/ stakeholder	**Meeting with stakeholder (self-organised)**		Present pitch and start ideation (brainstorming solutions)		Students organise oral feedback from stakeholder	
Fri 25 Nov 23:59 CET	**Individual work**	Assessment Deliverable #3 (individual)	Individual data analysis chapter		Assessor to assess & students informally share with team members	

Week 13: Solution prototyping

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 28 Nov & Tue 29 Nov	Team and individual work		Start solution prototyping (preparation for supervision meeting)		Students	
Wed 30 Nov 10-12 CET	Skill development workshop	Possible Capstone products: business model, policy recommendations, academic article, etc.	Students choose from parallel sessions on different types of Capstone products, short pitches of guest lecturers	2h	Dimitra Mousa (lead, UU), Centre for Entrepreneurship UU, external stakeholders (tbc)	Hybrid classroom
Date tbc by students/ supervisor	Supervisor meeting		Select and discuss 3 potential solutions (=Capstone products) and conduct SWOT analysis	30 min-1h	Supervisor & students	
Thu 1 Dec	Team and individual work		Select 1 solution to develop & test		Students	
Fri 2 Dec 10-11 CET	Catch up session	Progress update	Students update each other on the progress of their challenge	1h	Students in one university (rotating)	Hybrid classroom
Fri 2 Dec	Team and individual work		Select 1 solution to develop & test		Students	

Week 14: Solution development: the Capstone product

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 5 Dec & Tue 6 Dec	Team and individual work		Develop Capstone product (=solution)		Students	

Wed 7 Dec 10-13 CET	**Skill development workshop & working session**	Societal impact in addressing the challenges Multimedia and targeting non-academic audiences	Making societal impact from different sectors: civil society, business, government, intergovernmental organizations How to follow-up and take the Capstone further into the future How to tune to different audiences? How to pitch your idea?	3h	Julia Tschersich (moderator, UU), Utrecht University Centre for Entrepreneurship (tbc), academic & external stakeholders, Charlotte Ballard (confirmed, UU)	Online (hybrid classroom not available)
Date tbc by students/ supervisor	**Supervisor meeting**		Discuss and further develop Capstone product (=solution)	30 min-1h	Supervisor & students	
	Team and individual work		Develop Capstone product (=solution) & Work on draft of Capstone report			
Fri 9 Dec 10-11 CET	**Catch up session**		Students update each other on the progress of their challenge	1h	Students in one location (rotating)	Online (hybrid classroom not available)
	Team and individual work		Develop Capstone product (=solution) & Work on draft Capstone report			

Week 15: Testing the Capstone product & Draft Capstone report

Assessment:

- Deliverable #4: Draft Capstone report and product (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Date tbc by students/ stakeholder	Check in with stakeholder (self-organised)		Testing solution prototype with stakeholders		Students	
Mo 12 Dec & Tue 13 Dec	Team and individual work		Work on draft Capstone report		Students	
Wed 14 Dec 10-13 CET	Optional working session		Meet experts/Capstone team for any questions, short consultation meetings	3h	Capstone team, experts (tbc)	
Date tbc by students/ supervisor	Supervisor meeting		Discuss draft Capstone report	30 min-1h	Supervisor & students	
Fri 16 Dec	Team and individual work	Assessment Deliverable #4 (team)	Draft Capstone report and product		Academic supervisor, external stakeholder and peers to give feedback	
	Christmas party		Fun!		Students/JVAO	

Week 16: Inspirational Communication & Integrating feedback

Assessment:

- Deliverable #5a,b: TED talk (presentation of the draft Capstone report) (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 9 Jan & Tue 10 Jan	Team and Individual Work					
Wed 11 Jan 10-12 CET	Student presentations	Assessment Deliverable #5a,b (team)	TED talk: Group presentation of draft Capstone report/product in parallel sessions	2h	Students. Supervisors and peers to assess and give feedback. External stakeholders to give informal feedback during the session	Hybrid classroom
Thu 12 Jan	Team and Individual Work		Integrate feedback from presentations		Students	
Fri 13 Jan 10-11 CET	Skill development workshop	How to deal with (critical) feedback?	Inspirational & motivating talk from a high-level academic and external stakeholder	1h	Experts, editor from academic journal (tbd)	Hybrid classroom
Date tbc by students/ supervisor	Supervisor meeting	Making sense of and integrating feedback	Guidance from supervisor on integrating feedback	30 min-1h	Supervisor & students	
	Team and individual work				Students	

Week 17: Finalising Capstone report

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 16 Jan & Tue 17 Jan	Team and Individual Work		Finalising Capstone report			

Wed 18 Jan 10-11 CET	**Catch up session**		Students update each other on the progress of their challenge	1h	Students in one location (rotating)	Hybrid classroom
11-15 CET	**Optional working session**		Meet experts/Capstone team for any questions, short consultation meetings	3h	Capstone team, experts (tbc)	Hybrid classroom
Date tbc by students/ supervisor	**Supervisor meeting**		Discuss Capstone report	30 min-1h	Supervisor & students	
	Team and Individual Work		Finalising Capstone report		Students	
Fri 20 Jan	**Team and Individual Work**		Finalising Capstone report		Students	

<u>Week 18: Finalising Capstone report & preparing for Grand Finale</u>

Assessment:

- Deliverable #6a,b: Final Capstone report and product (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 23 Jan & Tue 24 Jan	**Team and Individual Work**		Finalising Capstone report			
Wed 25 Jan, 23:59 CET	**Team and Individual Work**	Assessment Deliverable #6 (team)	Final Capstone report and product		Supervisor, 2nd reader and peer to assess and give feedback	
Thu 26 Jan & Fri 27 Jan	**Team and Individual Work**		Preparing for Grand Finale		Students	
Date tbc by students/ supervisor	**Supervisor meeting**		Preparing for Grand Finale	30 min-1h	Supervisor & students	

Week 19: Grand finale

Assessment:

- Deliverable #7a,b: Grand Finale Presentation (team)

Date and time	Activity	Name of the activity	Explanation	Contact hours	Responsible for delivery	Location
Mo 30 Jan & Tue 31 Jan	Team and Individual Work		Preparing for Grand Finale		Students	
Wed 1 Feb – Fri 3 Feb (tbc)	Grand Finale	Assessment Deliverable #7 (team)	Keynotes, networking event, career counselling, Defence session (mini-TED talks: "Sell your solution"), social activity, CHARM-EU alumni network, etc.		All Academic supervisor and external stakeholder to assess and give feedback	Hybrid or physical classroom, location tbc

Assessment table

Assessors include academic supervisors (for most team assessments), stakeholders, peers and assessors (for the individual assessments).

- High impact team assessments (=Capstone proposal and final Capstone report/product) are assessed by the academic supervisor and co-assessed by a 2nd reader who is also a supervisor on another team.
- High impact individual assessments (=Individual data analysis chapter) are assessed by an assessor (not the supervisor) and co-assessed by a 2nd reader who is also assessor.

Nr.	Deadline	Assessment title	Assessment description	Low/high impact	Assessor	PLO Domains assessed
1a	Wed 5 Oct	Capstone proposal pitch (team/individual)	Sharing session of Capstone proposals to stakeholders, supervisors and peers, including project management plan, stakeholder collaboration plan, research questions, research methods, etc.	Low	Academic supervisor	Collaboration (4.1, 4.2) Oral communication (5.1, 5.2, 5.3)
1b					Peer	
2a	Fri 7 Oct, 23:59 CET	Capstone proposal (team/individual)	Students deliver a written proposal for their Capstone challenge	High	Academic supervisor to assess and give written and oral feedback. Proposal is shared with external stakeholder for informal feedback.	Sustainability (1.2) Transdisciplinarity (2.1, 2.2, 2.3) Collaboration (4.1, 4.2, 4.3) Written communication (5.1, 5.3) Scholarship (6.1, 6.2)
2b					Second reader (1 other team supervisor) to assess and give written and oral feedback	
3a	Fri 25 Nov, 23:59 CET	Individual data analysis chapter (individual)	Individual data analysis chapter, whereby each student performs an individual analysis on a sub research question related to the Capstone challenge	High	Assessor	Sustainability (1.2) Transdisciplinarity (2.1, 2.2) Solving challenges (3.1, 3.3) Written Communication (5.1, 5.2, 5.3) Professional and personal development (7.1, 7.2) Digital skills (8.1, 8.2, 8.3, 8.4)
3b					Second reader	
4	Fri 16 Dec, 23:59 CET	Draft Capstone report (team/individual)	Draft Capstone report: Prototype needs to be developed, part of this should have a digital component	Low	Academic supervisor to assess. Draft Capstone report is shared with external	Sustainability (1.1, 1.2) Transdisciplinarity (2.1, 2.2, 2.3)

			Sustainability and testing plan for prototype Bringing together individual reports into a synthesis that answers overarching research questions Team and individual reflection Stakeholder management plan/diary		stakeholder and peers for informal feedback.	Solving challenges (3.1, 3.2, 3.3, 3.4, 3.5) Collaboration (4.1, 4.3) Written communication (5.1, 5.2, 5.3) Scholarship (6.1, 6.2, 6.3) Digital skills (8.1, 8.2, 8.3, 8.5)
5a	Wed 11 Jan	Mini TED talks (team/individual)	Group presentation of draft Capstone report/product in parallel sessions (mini-TED talks) with 3 challenge teams per session	Low	Academic supervisor	Sustainability (1.1) Solving challenges (3.1, 3.2, 3.3, 3.4, 3.5) Oral communication (5.1, 5.2) Scholarship (6.3) Digital skills (8.4, 8.5)
5b					Peer	
6a	Wed 25 Jan, 23:59 CET	Final Capstone report and product (team/individual)	Final submission of the capstone report and product (part of the solution should have a digital component)	High	Supervisor to assess and give feedback	Sustainability (1.1, 1.2) Transdisciplinarity (2.1, 2.2, 2.3) Solving challenges (3.1, 3.2, 3.3, 3.4, 3.5) Collaboration (4.1, 4.3) Written communication (5.1, 5.2, 5.3) Scholarship (6.1, 6.2, 6.3) Digital skills (8.1, 8.2, 8.3, 8.5)
6b					Second reader (1 other team supervisor) to assess and give feedback	
7a	Wed 1 Feb	Grand Finale (team/individual)	Final presentations of Capstone product (in creative form)	Low	Academic supervisor	Oral communication (5.1, 5.2, 5.3) Digital skills (8.1, 8.2, 8.3, 8.4, 8.5)
7b					External stakeholder	

Appendix I: Programme Learning Outcomes (PLOs)

1. Sustainability (PLO1)

The graduate:

1.1 Critically analyses and evaluates the concept of sustainability as it is constructed and represented within multiple disciplines and by extra-academic actors (PLO1)

1.2 Demonstrates sufficient and solid knowledge (conceptual, theoretical and empirical) on sustainability issues and their interlinkages.

2. Transdisciplinarity (PLO1, PLO3, PLO5)

The graduate:

2.1 Formulates an advanced understanding of transdisciplinary practice, knowledge and epistemologies (PLO5)

2.2 Reflects upon and integrates multiple disciplinary and transdisciplinary perspectives, to understand the relevant ethical issues and the role of active citizenship, in particular within a European context (PLO1, PLO3)

2.3 Prepares, executes and evaluates a transdisciplinary (research) project (PLO3)

3. Solving challenges (PLO1, PLO2, PLO6, PLO7)

The graduate:

2.1 Analyses, investigates and evaluates complex societal challenges (PLO2)

2.2 Explains how sustainability challenges are caused, dealt with and addressed by various stakeholders (PLO1)

3.3. Uses a range of methodologies and theoretical frameworks to appraise the complexity of and solve societal challenges (PLO2)

3.4 Interprets and connects complex challenges to diverse stakeholder, disciplinary and intercultural perspectives that encompass global and European citizenship (PLO6)

3.5 Identifies, selects and devises robust, adaptable, ethical solutions, using intercultural perspectives (including gender) (PLO2)

3.6 Acquires advanced competency of problem solving, creative thinking, entrepreneurialism and innovation (PLO7)

4. Collaboration (PLO2, PLO5, PLO6, PLO7)

The graduate:

4.1 Demonstrates expertise in the collaborative and facilitative skills to support their practice as a transdisciplinary team member (team work) (PLO5, PLO7)

4.2 Collaborates with relevant stakeholders e.g., colleagues, peers, experts, professionals, clients and other external stakeholders (PLO2, PLO5)

4.3 Demonstrates inclusivity and (inter)cultural competence in teamwork (PLO2, PLO6)

5. Communication (PLO5, PLO6, PLO7) (oral communication)

The graduate:

5.1 Demonstrates expertise in the communicative skills to support their practice (PLO5) (organisation of presentation / supporting materials and references)

5.2 Communicates effectively with diverse stakeholders, e.g., clients, colleagues, peers, other relevant stakeholders and the public (PLO5, PLO6, PLO7) (presentation techniques)

5.3 Communicates effectively on complex issues that aim for behavioural change (PLO6) (central message and content)

5. Communication (PLO5, PLO6, PLO7) (written communication)

The graduate:

5.1 Demonstrates expertise in the communicative skills to support their practice (PLO5) (sources, references and evidence)
5.2 Communicates effectively with diverse stakeholders, e.g., clients, colleagues, peers, other relevant stakeholders and the public (PLO5, PLO6, PLO7) (purpose and audience for writing)
5.3 Communicates effectively on complex issues that aim for behavioural change (PLO6) (content)

6. Scholarship (PLO3)

The graduate:
6.1 Understands and critically evaluates research and literature and other data sources[2]
6.2 Rigorously assesses, designs and integrates different disciplinary and transdisciplinary research methodologies (PLO3)
6.2 Connects research questions, data and findings to their challenges (PLO3)

7. Professional and personal development (PLO5, PLO7)

The graduate:
7.1 Demonstrates reflexive skills (PLO5)
7.2 Shows skills fostering lifelong learning (PLO7) (e.g., career development, self-management, feedback literacy)

8. Digital skills (PLO4, PLO6, PLO7)

The graduate:
8.1 Demonstrates expertise in the identification and application of the latest technological tools (PLO4)
8.2 Analyses, handles, uses and communicates complex bodies of data ethically (data management, modelling and visualization) (PLO4)
8.3 Demonstrates digital skills (PLO7)
8.4 Identifies and critically interprets different types of media and information (media and information literacy)[3]
8.5 Utilises a broad range of appropriate communication tools and digital technologies to create materials for dissemination and communication (PLO4, PLO6)