



Faculty of Design

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## Virtual-Real MOOCS: Designing Resilient Regenerative Systems

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## RSD9 workshop proposal

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TITLE:

### VIRTUAL-REAL MOOCS: DESIGNING RESILIENT REGENERATIVE SYSTEMS

**Designing Resilient Regenerative Systems** is an innovative and timely **MOOC series** that builds capacity in tackling complex problems through a combination of holistic consciousness, systems thinking, and cooperative design doing in illustrative real-world cases. It provides nature-inspired creativity tools of systemic design as additional skillsets for students from technical and science programs to actively take responsibility in designing systems that are resilient and regenerative. The scales of regenerative design span from the level of green chemistry via materials, products, architecture, communities, to cities, to bio-regional landscapes, circular economies, to national and international cooperation.

The proposed MOOC series consists of two single self-assessed MOOCS that each can stand alone, but that are complementary:

MOOC 1. Conscious worldviews, systems thinking, and systemic design tools

MOOC 2. Real-world systemic design illustrations and transformative capacity

This ground-breaking proposed MOOC project builds upon the ETH Innovedum-financed teaching project “Systemic Design Labs” (<http://systemicdesignlabs.ethz.ch/>) and provides a timely learning experience on design tools and techniques to cope with complex situations and crises by co-creation on a systems level. It builds on established teaching in engineering, planning, architecture and different science disciplines while introducing systemic design thinking and doing as topical, didactic and collaborative spearhead in inter- and transdisciplinary, real-world education on a Master level.

Climate change and pandemics like Covid-19 are some of today’s most pressing complex challenges we as society have to address; much of our economies and societies prove to be not resilient and regenerative, but exhaustive, vulnerable, and unfair. Scientific knowledge and reasoning are the fundamental tools to base policy and management decisions on, in especial in times of crises. But we currently as well experience the limits of science alone when it comes to dealing with highly complex systems that are self-emergent, unpredictable, span across nested scales, depend on societal behavioral transitions, and lack data.

Most higher education programs are focused on training fragmentation of complex topics with disciplinary depth; hence, we currently don’t sufficiently equip students with the consciousness, self-esteem and methods to identify and analyze very complex systems on a relational level, neither to co-create effective solutions. Still, the increasingly fast changing world requires as well skillsets of relational holism and creative weaving of effective solutions in cooperation. Such solutions need to strengthen regional bio-economies and local communities, while increasing cooperation on a sub-national scale, across national boundaries, still making us less dependent on global supply chains. For ETH and Switzerland, this means a better European cooperation with a focus on strengthening regional resilience.

Together with partnering European Universities AHO Oslo, Delft University of Technology, and Politecnico Torino, who are leaders in the emerging inter- and transdisciplinary field of systemic design, this MOOC series equips students from many academic disciplines to become real-world change makers in co-designing local and regional creative solutions for resilient regenerative

systems. Such regional-local scales need to be understood in circularity, across scales from resource extraction to transnational cooperation, which is at the core principles of systemic regenerative design.

Transnational cooperation in Europe requires constant curation of bonding values and commonly shared visions, in especial coming out from the starting phase of the Covid-19 pandemic. These MOOCs contribute to empowering and motivating students as future weavers of European transnational solidarity through regional action as systemic designers across scales. The 1st MOOC provides the critical worldviews and the systemic design tools, the 2nd MOOC relates these to concrete regional European cases, where resilient regenerative design is illustrated: students learn to abstract systemic design principles and to transfer them to other and their own regional-local spheres of change making.

Such concrete action may well spur the forming of new visions for a regenerative Europe and co-create the next steps in evolving the European Green Deal (EGD).

This proposed MOOC series **objectives** are to:

- Develop and offer the first high-level MOOC on systemic design of resilient regenerative systems
- Stimulate and enable a new open discourse to familiarize different academic and design related disciplines with each other by language, value and impact – in order to cooperatively co-create systemic innovation to wicked problems:
- Build a new cohort and network of “weavers” n bio-regional real-world design labs with positive aspirations to regional and local activism embedded in and linked to a new European vision of a solidarity economy, shared values, and free borders
- Carve out motivational illustrations of regional-local solutions to global problems and link them as real-world laboratory teaching experiences to existing university programs, in order to become a constant project offer

In this **workshop**, we intent to share with participants the detailed topical and didactic setup of these MOOCs, and together explore additional topics, avenues, partners, synergies with existing programs, discover potential further speakers, new institutional partnerships, and discuss the didactic innovations we designed as the spine of this new program.

Key **take-aways** for participants will be to develop an overview on the online teaching landscape of systemic design, i.e. on regenerative design, as MOOC format, and the accompanied real-world case illustrations. They reflect on their own teaching while deep-diving into virtually nudged social outdoor experiences as innovative didactics. Non-teachers reflect on the practical usage of such new skillsets, and the illustrative design cases.

## **Plan**

00:00-00:05 Welcome and context of this workshop

00:05-00:15 Get to know each other in a MOOC-related speed-talk icebreaker round

00:15-00:45 Guiding through the planned MOOCs structure, content and didactics on a multi-media Miro board by the facilitators

00:45-01:00 Q&A and mini-break

01:00-01:30 Creative contribution with new ideas, reflections, feedback in break-out groups as joint mapping exercise on Miro

01:30-01:50 Break-out groups report back their results; Q&A

01:50-02:00 Wrap up by facilitators and final Q&A

Number of participants: maximum 30 over 6 break out rooms

Technical support: online meeting system with virtual break out rooms, virtual whiteboard Miro

Expected outcomes: an advanced MOOC concept and new pan-European collaboration options