

ENV-491 project: Interdisciplinary project in sustainability (10 ECTS): examples of past projects

	Title	Supervisor(s) EPFL
	<i>in labs</i>	
1	Analysis of the potential to reduce the air network from Geneva Airport	LASUR
2	Urban maps of the brain in the context of climate change - Association between cognitive performance and land surface temperature	GEOME
3	3D printed mycelium building materials	SML
4	Study of the variation of GHG emissions from soil saturation with reference to precipitation intensity	EML
5	Production measurement analysis of a PV installation on old wind turbine wings at the Lukmanier pass	CRYOS
6	Low-clinker low-binder content limestone calcined concrete	LMC
7	Glucose enrichment provides insights into the role of nitrogen cycling in aiptasia - symbiodiniaceae symbiosis challenging this emerging model for coral bleaching	LGB
8	Climate engineering in the Arctic	EERL
9	Carbon fiber netzero 2050 transition strategy modeling	LPAC
10	LCA estimation of perovskite solar cells deposition procedure	IPESE
11	Characterization of Ice-Nucleating Particles measurement installation	EERL
12	Measuring device for geometry of concrete rubbles from demolition	CRCL
13	Effect of hydrogen and carbon starvation on acetogenesis by T. kivui	MICROBE
14	LCA of renewable multi-generation systems using ammonia as an energy carrier	IPESE
15	Panel Lémanique project - Environmental impacts of monitored practices	HERUS
16	Rentrer dans la carte pour comprendre le territoire. L'enjeu de la gestion de l'eau	LASUR
17	Disulfide thiol-ene networks for sustainable coatings	LPAC
18	Ceilometer data analysis project	EERL
19	Modelling emergent thermal dynamics in a robot-bee biohybrid system	MOBOTS
20	Comparative analysis of snow transport and surface roughness	CRYOS
21	Socially acceptable ways to replace fossil fuels in Peru	LEURE
22	Revalorisation of residues from beer production	GR-LUD
23	Optimization of PID parameters	PV lab
24	Assessing ecosystem services in Fribourg with the use of the InVEST model	CHANGE
25	Identifying the main drivers of tree heat resistance	PERL
26	Developing a tool to monitor the ecophysiology of a mountain stream alga	RIVER
27	Comparative sustainable analysis of carbon capture technologies for decarbonization of the industry sector	IPESE
28	Identifying city climate solutions from the scientific literature	HERUS
29	Perceived insecurity as a factor in the exclusion from public space.	LASUR
30	Production of bacterial cellulose-gold nanoparticles composites via in-situ and ex-situ methodologies	SML
31	From Hydraulics to Fish: Calibrating and Validating a Brown Trout Metapopulation Model for the Aare Catchment	PL-LCH
32	Housing typology and embodied carbon: evaluating demand-side mitigation pathways in Swiss residential buildings	HERUS
33	Heat-resilient cities - "Strategies for demand side management based on insights from energy meter disaggregation"	ETHOS
34	Viral connectivity between glacial ice and glacier-fed stream ecosystems	RIVER
35	Analyse économétrique et par machine learning des initiatives sociales et environnementales en Suisse	PASU
	<i>in collaboration with centers and external partners</i>	
1	How can Switzerland become a leading hub for sustainable proteins? (with the Swiss Food and Nutrition Valley)	GR-LUD
2	Evaluation of tillage practices for climate change mitigation (with Agroscope and UNIL)	SOIL
3	Managing multi-energy microgrids in a hydrogen eco-system (with Maxton Society)	IPESE / LEURE
4	Multi-service battery planning (with GreedSteer)	DESL
5	Development and characterization of cellulose nano crystals (with Radiant Matter)	SML
6	Business and technical assessment for a bio-electrical system (with HEXEM)	GEM
7	Submerged and solid fermentation of soybean waste: Effects of growth conditions on biomass properties (with MIGROS)	SML
8	Towards a sustainable self-cleaning filtering system for oxygen concentrators (with Essential Tech center)	Essential Tech
9	Seismic earth masonry construction in the Moroccan Anti-Atlas region (with Experts Solidaires)	EESD
10	Dalle en béton de réemploi, études urbanistiques et logistiques, synergies, calculs carbone (with Itten + Brechbühl)	SXL
11	Assessing the environmental impacts of circular strategies: a LCA perspective (with E4S center)	E4S

	<i>in collaboration with MAKE projects</i>	
1	Social and technical analysis of a pre-constructed pavilion in Ecublens (Rebuilt)	IPESE
2	Sustainable energy generator for a building site (Rebuilt)	IPESE
3	Phytoepuration and water treatment system (Rebuilt)	LGB
4	Design of a sustainable battery for an electric race car (Racing team)	DESL
5	Scaling up graphene membrane manufacturing for carbon capture (Carbon team)	LAS
6	Citizen activation (Rebuilt)	HERUS
7	Multifunction pedal-powered appliance for an expedition boat : design and integration (SaiLowTech)	LGB
8	A low-cost Raman microscope for detecting microplastics in the ocean (SaiLowTech)	LNET
9	Continuous Water Sampler Integration (GenoRobotics)	HERUS
10	A open science weather station for marine sciences (SaiLowTech)	LAPI
11	Open-source energy-efficiency calculator for marine industry (Swiss Solar Boat)	GEM
12	Water resilience and management in Turkana (Urblands embryo project)	CEAT