

Draft syllabus for a course on climate change

<i>Theme</i>	<i>Content</i> <i>Students will learn...</i>	<i>Learning objectives (and limitations)</i> <i>Students will be able to...</i>	<i>References to the manual</i>	<i>8 key competences</i>	<i>Activities</i> <i>Students will have the opportunity to do..., to read...</i>
THE CONTRIBUTION OF SCIENCE	1. Contribution of scientific Panels	IPCC reports The work of IPBES and IUCN Collaborative and citizen science		1, 2, 3	Know the structuring of expert groups Engaging in participatory projects
	2. Fundamental concepts	The notion of tipping points Planetary boundaries The Carbon Budget and Markets (ETS), Carbon Offset Nature's contributions versus ecosystem services The need to reduce GHG emissions		1, 2, 3, 6,8	Cutx% app
	3. The science of complexity	Definition and limits Examples of complex systems Stability, Instability, resilience of systems Theory of Panarchy		1, 3, 4, 5	Study of D.Meadows' book "THinking in system"
	4. Climate change	Radiative forcing and warming The notion of albedo Greenhouse gas emissions IPCC climate trajectories Mitigation and adaptation		3, 4, 5	

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SUSTAINABLE DEVELOPMENT	1. Geopolitics of sustainable development	History of sustainable development. Founding Conferences and Summits Sustainable Development Goals of the UN 2030 Agenda.		6 & 8	Gain a global view of environmental diplomacy since 1972 Participate to the preparatory work of preCOP and COP
	2. Theories and economic models	Linear economy and circular economy Liberalism and socialism Capitalism Globalization		1 & 2	Enter in contact with companies, start-ups implementing a circular economy Invent experts / actors of the economic world.
	3. Social dimensions	Gross Domestic Product and Alternative Indexes Economic Growth and the Concept of Decoupling Social acceptability of environmental policies		6 & 7	Understand the notion of decoupling economic growth from environmental pressure. Meeting with politicians
	4. Ecological issues	Resource States Overshoot Day State of play of biodiversity		3 & 5	Study of IPBES reports. Interact with local environmental protection authorities.

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ANTHROPOCENE	1. Birth and definition of the concept	Geological eras Markers of epoques' transition Debates around the beginning of the Anthropocene		5, 6 & 7	Discuss other existing terminologies (capitalocen, Occidentalocen, etc...) Reading Crutzen's publication "Geology of Mankind"
	2. The Great Acceleration	Definition and dating Trends in the Earth system Socio-economic trends		7, 8, 3	Identify the socio-economic indicators involved.
	3. The notions of ecological and energy transitions	Criticism of the notion of transition The reality of energy consumption Sobriety and degrowth		3 & 4	"the Anthropocene event " Jean Baptiste Fressoz and Christophe Bonneuil.
	4. The political institutions of the Anthropocene	Overview of current climate policies The roles of the various international institutions (EC, UN, UNESCO, WHO, FAO, IMF) The European Green Deal		8	Meeting and visit of the European institutions

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THE IMPORTANCE OF SOCIAL SCIENCES AND HUMANITIES	1. Psychology of change	Climate actions and inactions Perception of imminent and distant danger Non-Governmental Organizations and Whistleblowers		5, 6, 8	Meet members of associations "The human bug", Sébastien Bohler
	2. Demographic upheavals	Evolution of the human population Population displacement – climate refugees Climate Justice Food issues and agroecology		2, 3, 6, 8	Discussing the urbanization of humanity "Geopolitics of climate", François Gemenne
	3. Techniques, technology and innovations	Green growth The digital world Bio and Geoengineering in the face of climate challenges The Low-tech current		3, 4, 5	Work with experts from the European Patent Office (EPO) and the Joint Research Centre (JRC)
	4. Ecological thinking	The founding fathers of Western conceptions of ecology. Non-Western conceptions Decentralization and decolonial ecology		1, 2, 8	Reading by Jacques Ellul, Ivan Illich and André Gorz, Amitav Ghosh