Ecological challenges : Planetary Boundaries

ECTS : 2

Volume horaire : 18

Description du contenu de l'enseignement :

The first-year (L1) course unit provides an understanding of the environmental and systemic challenges posed by the three major ecological crises: climate, biodiversity, and the over exploitation of natural resources in a finite world. It presents the nature and anthropogenic causes of these global and systemic issues, as well as the connections between them.

Course themes will be allocated over 9 sessions:

Climate and energy:

- Climate change.
- Water cycle
- Fundamentals of energy
- The Kaya equation and critiques of technologies

Biodiversity and ecosystems:

- Biodiversity and ecosystem services
- Climate change and biodiversity collapse: what do we know and how do we know it?

Resources and society:

- Natural resources and their geopolitical implications
- Environmental justice
- Ecological economics

Human–nature relations:

- History of human–nature interactions

Action levers: climate, biodiversity, and resources

Compétence à acquérir :

Adopt a systemic approach:

- Develop a systemic understanding of sustainability challenges through a multi- and transdisciplinary perspective.
- Be able to critique the human–nature divide and reflect on the fact that humans are part of nature, not separate from it.
- Know how to identify and categorise the services provided by ecosystems.
- Identify and analyse the various causes of social and environmental inequalities.

Project oneself into the future:

- Become aware of what is at stake: what crossing planetary boundaries implies.
- Situate current Earth-system trends and future projections in relation to past developments.
- Understand how models and scenarios are constructed.

Mode de contrôle des connaissances :

Ma Petite Planète Challenge, group presentations, final MCQ

Bibliographie, lectures recommandées :

Figueres, C & Rivett-Carnac T. “The Future we Choose.” Manilla Press, 2020

Robinson, M. “Climate Justice.” Bloomsbury Publishing, 2018.

Thunberg, G. “The Climate Book.” Penguin Books, 2022