

- Faculté des sciences
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## Socio-ecological systems and interactions (3CB2010)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
<b>Master en conservation de la biodiversité</b>	<b>Cours: 28 pg</b>	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

### Période d'enseignement:

- Semestre Automne

### Equipe enseignante

Sébastien Boillat

### Contenu

Social-ecological systems (SES) is an emerging concept to understand and analyze the intertwined nature of human and natural systems. The SES approach builds on both natural and social sciences. It connects the systemic approach that focus on relationships between elements and their dynamics, with the economic, social, political and cultural drivers of ecological changes and their feedbacks into society. In this course, we will explore human-environment relationships through the SES perspective, using various tools from mathematical models to the analysis of artistic expression, from the local to the global and from theory to practice. Participants will understand the non-linear, turbulent and dynamic characteristic of systems and apply quantitative and qualitative methods to analyze them. They will also be able to think critically about political, economic, social and cultural aspects of human-environment relationships and their interpretation at different scales.

### Forme de l'évaluation

Graded group presentations; individual interpretations of articles and contexts; exercises

### Modalités de rattrapage

In case of failure registration in next session and re-submission of exercises and graded works

### Documentation

Documentation will be distributed during the course, including presentations and collection of readings.

Textbooks (optional complementary literature)

- Biggs R. et al. (2021). The Routledge Handbook of Research Methods for Social-Ecological Systems. Routledge.
- Berkes F. (2018). Sacred Ecology. 4th Edition. Routledge
- Ellis, Erle (2018). Anthropocene: A Very Short Introduction. Vol. 1. Oxford University
- Meadows, Donella (2008). Thinking in Systems: A primer. Chelsea Green Publishing

### Forme de l'enseignement

Lectures, group works, reading groups, exercises and serious games

### Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Use quantitative and qualitative tools for social-ecological research and action
- Compute tools to quantitatively analyse system dynamics
- Recognise the intertwined nature of human and natural systems, their interconnections and interdependence
- Identify the theoretical and practical challenges of coupled social-ecological research and action
- Describe the different schools of thought in social-ecological science and their strengths and weaknesses
- Develop critical and ethical thinking on how to study and transform human-environment interactions

### Compétences transférables

- Analyse the interactions between social and natural systems with quantitative and qualitative data
- Develop critical thinking on the study of human-environment relations
- Illustrate the intertwined nature of human and natural systems
- Apply a diversity of tools to understand human-environment relationships

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