

Managing the Anthropocene, 7,5 hp

This course aims to explore the meaning and history of the Anthropocene Era, what makes it different from previous times, and what this new era means for how we deal with “wicked” problems in the Anthropocene.

The course will be organized into two parts, described in detail below. Part I explores what the Anthropocene is and how we got here. Part II exposes the limitations of “traditional” strategic planning and management techniques for addressing Anthropocene issues, and explores new techniques that may be more useful in the future.

The course is intentionally broad in scope. It covers topics such as elemental cycles and paleoclimatology, aspects of human history and anthropology, topics in behavioral science and economics, transdisciplinary approaches to research and planning, and ethical issues through a number of different lenses. It will incorporate examples from both academic research and from collaboration with private sector firms, agencies, the military and civil security sectors, faith communities and other stakeholder groups.

The goal of the course is to help prepare our graduate students to be able to contribute to finding solutions to the “wicked” problems faced by society today – problems in which leaders operate with incomplete or contradictory and rapidly-changing information, with a large number of stakeholders (often having competing agendas and ideologies) and with connections to many other problems. How to provide nutritious, satisfying and sufficient food for 9 billion people in a sustainable, affordable and equitable way in a rapidly-changing climate is an example of a wicked problem that links the SDGs and the Paris climate agreement – and would be a topic for this course.

Our traditional, disciplinary-oriented educational approaches do not adequately prepare our students for these challenges. This course will be a contribution to creating additional mechanisms to expose our graduate students to transdisciplinary, solutions-oriented approaches.

Course content

Part I **What is the Anthropocene?**

- A very short history of planet Earth
 - The formation of the sun and earth
 - The first appearance of life
 - Oxygen in the atmosphere
 - Life takes over the land

- Modern humans take the stage
 - What makes a modern human
 - Human migrations
 - Turning hunters and gatherers into farmers
- Elemental cycles and human perturbations
 - The cycles of carbon, nitrogen, sulfur, phosphorus
 - Human perturbations of these cycles
- The “Great Acceleration” and the end of the Holocene
 - What characterizes the new Anthropocene era, when did it start, and why is it different from the Holocene?

Part II Thriving in the Anthropocene

- The role of science and research in the Anthropocene
 - The origin of the “linear” model for science and its consequences
 - Other roles for scientists
 - A new contract between science and society?
- Transdisciplinary approaches
 - What does “transdisciplinary” mean?
 - What can you do with a transdisciplinary approach that is different from our traditional siloed structure?
 - How can transdisciplinary approaches be supported and rewarded?
 - Ethical aspects of transdisciplinary approaches
- Socioeconomic, socio-ecological and ethical aspects of the Anthropocene
 - Ecology, economy and politics
 - Ecosystems and biological diversity
 - Inequality, poverty and development
- Strategic planning in the Anthropocene
 - The Planetary Boundaries concept
 - Scenarios approaches – IPCC, Royal Dutch Shell, Military and Civil Security
 - Risk analysis and sustainability strategies in the private sector – DNV GL
 - Missing elements of strategic planning – what about ethics?
- Changing behavior
 - Rational actors and real humans
 - Beyond GDP - better metrics for wellbeing
 - Science and values
 - Puncturing some pre-Anthropocene myths
- Ways forward

Literature

Each block of the course will be built on selected papers from research literature. Each set of lectures will be based on a set of up to 4-5 reference papers. Each set of lectures will be concluded with a group discussion of the presentation and reference materials.

Examination

The course will be graded pass/fail. The final grade will be a combination of a) participation in the group discussions, and b) an individual written examination.