

Course syllabus for PhD course

Course part of the research school: People, Society and Sustainability

Department of Economics/Department of Urban and Rural Development

The macroeconomics of sustainability

Makroekonomisk analys av hållbarhet

Higher education credits

7,5 HEC

Subject

Other social science

Course type

Subject course

Language

English

Prerequisites

Accepted as a PhD student in economics.

Objective (formulated as learning goals)

Upon completion of the course, the students will be able to:

- develop and use a generic macroeconomic model of natural resource use and pollution;
- analyze – with the help of the generic model – the evolution of the approach to the modelling of the extraction and use of non-renewable natural resources in a macroeconomic context with growth, starting with the Dasgupta-Heal-Solow-Stiglitz (or DHSS) model from the 1970s, and ending at the research frontier;
- analyze – with the help of the general model – models of how emissions of local, short-lived pollutants are expected to develop over time under optimal policy, related to the Environmental Kuznets Curve hypothesis;
- analyze – with the help of the generic model – the evolution of the approach to the modelling of emissions of global, long-lived pollutants such as CO₂, including the damages caused by such emissions and optimal policy, starting with Nordhaus' DICE model of 1993, and ending at the research frontier;
- analyze – with the help of the generic model – approaches to the modelling of land use and the exploitation of biological natural resources.

Furthermore, students will be able to analyze in depth – through one specific recent paper published in a leading journal (good general interest or top field) – an advanced topic such as discounting and climate damages, risk and climate damages, climate policy with multiple externalities (e.g. knowledge spillovers in addition to pollution damage), the costs and benefits of environmental policy, sustainability and inequality.

Content

After setting up our generic model (which is a simplified version of models in many recent papers) the content will be focused around a series of papers. The core papers will include some of the following.

- Topic 1: the original DHSS papers from 1974, and Hart (2016).
- Topic 2: Stokey (1998), Shapiro and Walker (2018), and Hart (2020).
- Topic 3: the DICE model and Golosov et al. (2014).
- Topic 4: To come.

The papers for the in-depth analysis will be chosen by the students themselves.

Examination

There will be a short written examination on the core topics, plus a written term paper containing the in-depth analysis. This paper must be submitted in advance of the final seminar, an all-day event at which students will discuss each other's work in depth.

Contact for application and further information

Rob Hart

Literature

Required reading will be assigned to students four weeks before the course starts.

As stated above. Details will be added later.

Additional Information

This course is part of the research school People, Society and Sustainability, a joined research school between the Department of Economics and the Department of Urban and Rural Development.

