TEP4222 Input-Output Analysis, Trade and Environment

Responsible subject teacher: Professor Edgar Hertwich
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Credits: 7.5
Grade: By letter
Aim of the course: An understanding of production systems and international value chains is increasingly important for industry and policy makers alike. This course covers national economic and environmental accounts, economic input-output analysis, the economic modeling of production technologies and the development of scenarios using dynamic input-output models, as well as trade.
Recommended grounding: Linear algebra A basic understanding of economics An introductory course in environmental science or environmental economics
Subject matter: Input-output modeling is increasingly important in environmental analysis. The course addresses the use of input-output models in national energy policy modeling, in product life-cycle assessment, and in material flow analysis. Three cutting-edge applications are the determination of household environmental profiles for sustainable consumption, the combination of monetary input-output data and physical process models in hybrid life-cycle assessment, and the development of a generalized trade model (multi-regional input-output model) based on comparative advantage. Comparative advantage is determined by relative factor prices and by the technology and structure of national industries. The course addresses the use of existing economic and environmental data and the application of different modeling techniques in industry, public policy and for consumer information.
Activities: The course consists of lectures and problem sets. The course reading is mandatory. The lectures are in English. For continuation exam, the exam may be changed to an oral exam.
List of set readings: To be determined later.