

**LEHRSTUHL FÜR STEUERUNG INNOVATIVER
UND KOMPLEXER TECHNISCHER SYSTEME
PROF. DR. LASSE GERRITS**



Education Program SS 2016

Seminar: Computer-aided Social Inquiry: System Dynamics Modeling

Room: F21/03.79 and RZ/00.06 (1st Course F21/03.79)

Time: Tuesday, 12-14 h

Start: 12th of April 2016

Seminar series

Instructor: Prof. dr. Lasse Gerrits

Test and grading: paper

Minimum – maximum number of participants: 3 - 15

Overview

Actors operating in complex governance systems deal with a multitude of interlocking variables. That generates considerable uncertainty regarding the possible outcomes of certain decisions. It is therefore pivotal to obtain a better understanding of the systemic properties of certain political and policy issues. One way of achieving this is by combining empirical research with software to model such issues.

In this course, we will focus on Soft Systems Methodology and will learn how to use these tools as a means of knowledge creation, organizational learning and strategic positioning within complex systems. It offers a mixture of research methods, modeling and simulation, and interpretative analysis. The students will work on a small research project (individually). The research project encompasses: (a) identification and articulation of a governance issue, (b) data collection, (c) modeling, and (d) simulations of certain scenarios. Along the research process, we will discuss persistent issues such as causality in complex systems, subjectivism vs. objectivism, factors that influence organizational learning and issues related to strategy. Note that modeling is an iterative process so we will move back and forth in the research cycle.

Learning goals:

- To identify causes and consequences in complex governance issues
- To collect data and model data influencing such issues
- To simulate various scenarios in order to explore possible consequences of decisions
- To develop strategic proposals.

Test:

Students will be required to carry out a small research project and to report on this project. The research project encompasses defining a research question, the selection of a case, the collection of data, the identification of the main factors, the modeling of the system and the simulation of outcomes. The results of this will have to be written up in a report. This report will be graded.

Literature (mandatory):

E-reader, available online through Virtual Campus.

Notes:

The seminar will be taught in English.

The students will have to work with Vensim simulation software. The software can be downloaded for free from www.vensim.com, make sure you select the Personal Learning Edition (PLE). A detailed user guide and good tutorials can be found at <http://www.vensim.com/documentation/>

Registration:

Registration will be done during the first session.

Speaking hours:

Wednesday, 12:00 - 13:00

Mail: lasse.gerrits@uni-bamberg.de