



College of Information Studies
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Course: **INFM 718V - Organizational and Business Process Modeling (3 cr.)**
Section: **0101; Wed. 1:00-3:45 PM; Hornbake Bldg. Room 2119**
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Description of Sustainability Integration

Many sustainability-related problems are systemic problems that are caused by an interplay between various elements that make up the system at hand. The last 2/3 of this course will deal with Systems Thinking and System Dynamics modeling and simulation, which can be used to understand and address sustainability-related problem in a effective way. Students will learn to approach real world problems from a systems perspective, identifying the interconnectedness and interaction between the system elements that cause the problem behavior. Students will also learn to identify leverage points for change, and apply strategies that will bring about solutions that do not cause more harm than good.

The course will make use of a sustainability-related case, the rise and decline of the deer population in the Kaibab Plateau during the first half of the 20th century, to introduce key systems thinking/system dynamics tools, such as causal loop diagrams, stock-flow diagrams, and simulation-based strategy testing. The Kaibab Plateau case will be analyzed from different angles over a five-week period. Other sustainability-related cases, such as the impact of cloud computing on overall energy consumption in the IT sector, and the impact of rapid economic and urban growth on vehicular traffic in a city will be presented and discussed by making use of simulation models.

Furthermore, students will work throughout the semester in two-person teams to analyze a systemic problem of their choice, and build a simulation model to test solution strategies. The teams will be encouraged to choose sustainability-related problems as the topic of their project, and the instructor will guide and help the teams to refine their models and reports, so that they can be submitted to on- or off-campus events and competitions, such as the UMD Graduate Research Interaction Day, and the International System Dynamics Conference, which will be held in D.C. in Summer 2011.

Finally, selected sustainability-related readings from Dana Meadows' "The Global Citizen" website will be assigned throughout the semester. The readings will be discussed in class.