CMPT 394 – Term 2, 2012-2013

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Lecture 1
Class Objectives: To Help Students

- Learn to appreciate and critique existing simulation models
- Understand the proper limitations and limitations of such models
- Gain familiarity with modeling software
- Learn how to conceptualize, formulate, and analyze simulation models (regardless of application area)
- Understand some open areas of modeling research
Anticipated Class Coverage

- Motivations
- System science concepts
- Qualitative sketching
- Specifying Agent, System Dynamics & Discrete dynamics
- Inter-agent interaction
- Hybrid modeling
- Dynamic Decision Problems & Simul.

- Agent environments
  - Irregular topologies (networks)
  - Regular (e.g. CA)
  - Irregular geometries

- Debugging
- Calibration & Parameterization
- Dimensional analysis
- Best practices in model building
- Individual-based vs. aggregate
What is Expected of You

• Attendance & Participation
• Viewing of online material to supplement in-class lectures
• Assignments
• Pop Quizzes
• Final Exam
• Willingness to use computational tools (simulation) to model situations lying outside of CS (particularly in health)
Classroom Exercises

• Interactive modeling exercises on laptops will be a key component of the course

• We will have (pre-installed) laptops delivered to the classroom for students who need them
  • Please speak with the instructor if you’d like to use such a laptop
Administrative Info

- **Office Hours:** Tuesday 3-4pm (Thorv 280.6) & by appointment
  - Especially important b/c of diversity of backgrounds & limited time
- **Course website at** moodle.cs.usask.ca
Resources

• AnyLogic Download
  • (Due to intellectual property concerns, this information is provided elsewhere)

• Vensim Download
  • http://www.vensim.com/freedownload.html

• Moodle: http://moodle.cs.usask.ca