Human Complex Systems 100 / Anthropology M186 / Honors 150: Models and Modeling in the Social Sciences
Winter 2006

Lecture: Monday/Wednesday 3:00 - 4:15, Dodd 146
Instructor: Dario Nardi (dnardi@math.ucla.edu)
Office: Haines A04. He could also do a video conference teacher-training short-course for the other campuses. And we could have some of his key sessions taught in video conference format for inclusion in course sessions for courses at the other campuses.

Text: You purchase the course booklet online. **ANTHROPOLOGY M186** - DARIO NARDI MODELING AND SIMULATION IN THE SOCIAL SCIENCES UC LOS ANGELES Code: **30706** To buy the text go to: www.universityreaders.com/students Create a new account. You will be asked for a log-in ID and password. You make these up to access your account in the future. Then indicate UCLA and so on. Shipping is free, and you have access to a PDF of the first 2 chapters of the text until it arrives. A CD comes with the text. You can also access the first two chapters here:

Description: How do people make choices? Exchange goods, services and ideas? Or learn about and adapt to their environments? And how do individual choices, exchanges, and adaptations diffuse into the larger society and feed back again to the individual? We explore ways to model these and related phenomena, with an emphasis on the value of scientific speculation, computer simulation, and experiential observation. In addition to the traditional methods, we will explore using software tools like genetic algorithms, iterative networks and multi-agent systems. We will also cover holistic frameworks like Cultural Theory and Temperament Theory.

Grading:
4 Quizzes: 25%
4 Homework Exercises: 25%
In-class activities and participation: 15%
Final Project Paper: 35%

Topics: Each week we explore different ways to model social systems. The details of this outline are subject to change.

1. modeling and simulation - what is it?!
2. hypothesis testing and policy making
3. decision making

4. learning models
5. fuzzy cognitive maps
6. temperament theory
7. cultural theory
8. memes and human development within culture
9. the multi-agent systems approach
10. using a multiple models research method

The Sims® is a sophisticated, colorful and interactive multi-agent system. Computer simulations like these help us explore and test models against the complexity of real world social and cultural life.

Quizzes: Quizzes will be given every 2 weeks on the most recent material. Quiz dates will be announced in lectures ahead of time. They are tentatively scheduled for Wednesdays in weeks 4, 6, 8 and 10. Typical quiz questions ask you to write a definition, evaluate a case study, or apply a model. Quizzes are 50 percent multiple choice.

Homework Exercises: We will use Excel to implement the several homeworks. Also, I will provide you with software to explore various topics. Always have your name, student id, and the homework number included on what you turn in! Late homework will only be accepted under special circumstances.

Live Simulations: Besides lecture, class time includes live group simulations, and participatory and observational exercises using real world data. Every system needs careful observers just as it needs active participants. Your grade here is based on a reflective 2-page paper you turnin after each exercise. Weather permitting, some simulations will be held outside (so if you arrive to class late you may find the room empty! Look on the board for directions if needed.)

Virtual World Participation: You can download software that is a portal to a virtual community called "There" at www.there.com. What you do in that world is up to you. Your "avatar" will be able to communicate with others and use tools (the basics of culture!)

Final Research Paper: The suggested topic is to apply and compare two different models to a phenomenon or system of you choice. Past research papers explored how toddlers are treated in a daycare center; how transnational migrants adapt to American culture; the relationship between employeers, owners and managers in a small business; how a unique culture is observed to develop in a virtual online world; and so on. It's your choice!

Note: The purpose of this course is for you to learn and practice analytical thinking skills applied to social science problems and cultural questions, and to learn research methods

and interviewing and observational skills. There is some mathematics in the course in weeks 3 and 4 but these mostly involve drawing graphs and calculating percentages.