

**POSC 330: The Complexity of Politics**  
Monday & Wednesday: 1:50 to 3:35  
Weitz Center 235  
Instructor: Greg Marfleet  
Office: Weitz Center 239b  
Office hours: Tuesday and Thursday 2:00 to 4:30  
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Theories of complexity and emergence relate to how large-scale collective properties and characteristics of a system can arise from the behavior and attributes of component parts. This course explores the relevance of these concepts, studied mainly in physics and biology, for the social sciences. Readings and seminar discussion topics may include conflict and cooperation in international and sub-national environments, electoral competition, cross-cultural contact and the transmission of cultural traits, models of group interactions and decision making and social networks.  

Over the term we will experientially explore agent-based modeling to discover emergent properties of social systems through computer simulations created using NetLogo software. A series of workshops will build the requisite skills to complete the programming project which constitutes the main graded assignment for the class. This course is organized in a combination seminar/workshop format. Monday meetings will begin with a discussion of the listed readings. Students will be assigned roles as discussants and will be asked to generate 3 or 4 discussion questions per reading. For the second day of the week we will shift our focus to NetLogo programming and we will discuss assignments that are ‘in progress’ and you can raise any questions or problems you are having. 

Our class will take place in the new Weitz Center for Creativity. Incorporated into this new building is an innovative new classroom facility modeled after the "SCALE - UP" classroom pioneered at NC State University [http://scaleup.ncsu.edu/](http://scaleup.ncsu.edu/)

**Books**

**Readings**
All Readings are available via links on this page or in pdf, doc, or html format in the COURSES/Course Materials folder

**Netlogo Modelling Software**:
Find it Here

**Grading Scheme**

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<thead>
<tr>
<th>Component</th>
<th>Pts</th>
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<tbody>
<tr>
<td>Participation in Seminar (includes discussion question prep)</td>
<td>20</td>
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<tr>
<td>Workshop Assignments</td>
<td>25</td>
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<td>Model Proposal Paper</td>
<td>25</td>
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<td>Final Project</td>
<td>30</td>
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<td><strong>TOTAL</strong></td>
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WEEKLY TOPIC AND READING OUTLINE

September 11 - September 17
Complexity; An IR centered Introduction
Monday
Miller and Page, CAS Chapter 1
Axelrod TCoF Introduction
SCALEUP Activity: NetLogo Tutorials #1 and #2
Wednesday
SCALE-UP Activity: NetLogo Tutorial #3 begin WS1
Workshop #1 Assignment

September 18 - September 24
Monday - Agent Based Models, Complex Adaptive Systems and Emergence
Miller and Page, CAS, Chapter 3 & 4 (see the Game of Life Link)
Joshua M. Epstein. 2008. Why Model? Journal of Artificial Societies and Social Simulation vol. 11, no. 4 1
SCALEUP Activity: Explore the Social Segregation and Sugar Scape Models models in the models library.
Make a simple flowchart.
Wednesday - Self-Organization and Co-Evolution
Game of Life file
Workshop #2 Assignment

September 25 - October 1
Monday - Fitness, Selection and Adaptation
Miller and Page Chapter 5 & 6
SCALEUP Activity : Explore the El Farol bar model
Wednesday -- Games Agents Play
Miller and Page Chapter 7 & 10
Bednar, Jenna and Scott Page, “Game(s) Theory and Culture.” see Jenna Bednar’s web site http://www-personal.umich.edu/~jbednar
SCALEUP Activity:Explore the spatial PD Moore Machine Model begin WS #3

October 2 - October 8
Monday - Early Computer Simulations of World Politics


Axelrod, Robert. 1997. The Complexity of Cooperation. New York: Ch. 6 (empires)

SCALEUP Activity: Explore NetLogo Landscape model begin WS#4

Wednesday - IR models continued


Miller and Page Chapter 2 & 8

SCALEUP Activity: Continue WS#4

Workshop #4 Assignment

October 9 - October 15

Monday - Modeling Societies in Conflict


SCALEUP Activity: Explore Genocide Model, Major Project Group Brainstorming

Wednesday

SCALEUP Activity: Proposal Workshop -- Bring to class a short Power Point of not more than 6 slides that outlines up to 3 possible model ideas you have. Describe each model (keep it brief -- no more than a few bullet points) and identify: a) what question you are interested in exploring, b)what type of model this is (heuristic? etc.), c) who the agents are and how might they behave, d) who or what might they interact with and e) what outcomes you could look for. Don’t worry excessively about codeability (yet). Definietly consider diagraming your ideas!

This PPT should accompany you to class AND be uploaded to the link below as Workshop 5. You will be expected to discuss your model ideas with your group and the a few of you with the class as a whole. Your preparedness for this exercise will be noted and reflected in your participation grade.

Workshop #5 Assignment

October 16 - October 22

Monday - Mid Term Break

Wednesday - Emergent Norms and Social Movements


Miller and Page Chapter 9
SCALEUP Activity: Explore the Multi-state Metanorm and guess a number game
NOTE: Your Model Proposal Paper is due Today before class.
Model Proposal Paper Assignment

October 23 - October 29
Monday -- Guerrillas and Insurgency
D. Scott Bennett. 2008. Governments, Civilians, and the Evolution of Insurgency: Modeling the Early Dynamics of Insurgencies. Journal of Artificial Societies and Social Simulation vol. 11, no. 4
SCALEUP Activity: Exploring an Insurgency models, gathering data from a model

Wednesday -- Social Networks and Terrorism
SCALEUP Activity: Modifying a Model
Bennet Insurgency Model (my version) file
Three Types of Attachment Model file

October 30 - November 5
Monday -- Political Institutions and Elections
SCALEUP Activity: Exploring Model Sensitivity

Wednesday -- Identities and Nationalism
SCALEUP Activity: Considering Model Validation

November 6 - November 12
Model Presentation Schedule Resource
Monday Group and Organizational Decision Making
Miller and Page Chapter 11 and 12

Wednesday
Project Presentations (group A)

November 13 - November 19
Monday
Project Presentations (group B)
Wednesday
Project Presentations (group C)

November 20 - November 26
FINAL PROJECT DUE - 5PM LAST DAY OF EXAMS Assignment