

Quantitative Methods II: Modeling
Urban and Regional Planning 204B
San Jose State University, Spring 2008

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Office Hours: Wednesdays: 1:00.-3:30 p.m.;
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Sec. 1: Tue. 7:15-10:00 p.m., WSQ 208

Sec. 2: Wed.4:00-6:45 p.m., WSQ 208

Home Phone: (530) 758-1602 8am-10pm Th-Mon.

COURSE OBJECTIVES

This course seeks to acquaint students with research tools for modeling social, economic, and physical data for urban and regional planning. A broad range of models is introduced, including statistical extrapolation, population, economic base, input-output, fiscal impact, gravity spatial-interaction, transportation land use, and neighborhood quality of life index models. While secondary course objectives include having students gain personal computer application and digital communication skills while learning to construct and/or use models, the primary objective is to provide an understanding of the operation and use of models in the urban and regional planning process.

METHOD

Class sessions will usually consist of lectures and discussions of assigned readings and discussion topics, along with demonstrations of personal computer based models. Problem set assignments, most to be worked using Excel 97 templates prepared for the SMURA text will be given, with homework due roughly every other week. Computer labs in WSQ 208 will be used for introductions to the spreadsheet templates.

Class Participation

Preparation for class attendance is an essential component of participation, since you must be prepared in order to contribute to the class. Students will have responsibility for two or three presentations to the class including the introduction of an urban modeling application and an overview of their neighborhood QOL search application. Participation also consists of reading the assigned material before class, contributing relevant comments to class discussions, engaging in constructive criticism, assisting other class members, and communicating with the instructor and with other class members.

PREREQUISITES

Students are expected to know how to run Excel on personal computers, as most assignments will entail working with spreadsheet templates. All students must provide email addresses, as assignments, class announcements, and notes will often be distributed by email. Email will often be the best way to contact the instructor between classes.

TEACHING ASSISTANT

Amy Fauria will be available to help students between 3 and 6 pm on Tuesday afternoons in WSQ. At other times, particularly weekends and Monday and Wednesday afternoons between 2:30 and 4:15 pm, she can be reached via email at: TA.URBP204B@gmail.com,

Quantitative Methods II: Modeling - Urban and Regional Planning 204B
San Jose State University, Spring 2008 (page 2of 3)

Dr. Earl G. Bossard

Course Outline	# of Sessions
I. Introduction, Digital Divides in a Wired World, Planning Support Systems (PPS), Modeling Concepts, John Kain’s Grand Implicit Model, and SimCity	1+
II. Measurement & Evaluation Statistical Concepts, Extrapolation Techniques	1+
III. Population Analysis	3
IV. The Metropolitan Economy	
A. Income & Product Accounts, Price Indices	1
B. Economic Base Analysis & Shift Share Analysis	2
C. Input-Output Analysis	1
D. Gravity Spatial Interaction Models	2
V. Urban Modeling, Smart Growth, Neighborhood Quality of Life Indices & Searches, and ABAG Projections	3

Comprehensive Final Examination

Sec.1 Tue. May 20, 7:30-9:30 p.m.; Sec. 2 Wed. May 21, 4:00 – 6:00 p.m.
in WSQ 208 unless announced otherwise.

Problem Sets, Assignments, Percentages of Final Grade, and Grading

- (1) 4% SimCity
- (2) 8% Curve Fitting & Extrapolation
- (3) 12% Cohort-Component Population Projection (has multiple parts)
- (4) 10% Economic Base
- (5) 8% Retail Market Share Gravity Spatial-Interaction Model Application
- (6) 18% Neighborhood Quality of Life Index Application (has multiple parts)
- (7) 5% Presentation to Class of a Modeling Application
- (8) 10% Class participation
- (9) 25% Final Examination

Late assignments submitted within one week after the due time will have their grade reduced by 10 points, late assignments submitted by the last class meeting will have a maximum possible grade of 83 (B). No assignments will be accepted after the last class meeting.

San Jose State University official concerns:

You are responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at http://sa.sjsu.edu/student_conduct.

If you would like to include in your paper any material you have submitted, or plan to submit, for another class, please note that SJSU’s Academic Integrity policy F06-1 requires approval by instructors.

The rules for plagiarism and cheating as set out in San Jose State University’s Academic Integrity Policy apply in this class (http://sa.sjsu.edu/student_conduct).

Quantitative Methods II: Modeling - Urban and Regional Planning 204B
San Jose State University, Spring 2008 (page 3 of 3)

Required Text:

Richard E. Klosterman, *Community Analysis and Planning Techniques*, Rowman & Littlefield Publishers, 1990. at Spartan Bookstore.

Optional Texts:

Earl Bossard, *Envisioning Neighborhoods*, selected draft chapters, (in press ESRI Press)

Richard Klosterman, Richard Brail, and Earl Bossard, ed. *Spreadsheet Models for Urban and Regional Analysis (SMURA)*, Center for Urban Policy Research, 1993.

David Maguire, Michael Batty, and Michael Goodchild, ed. *GIS, Spatial Analysis and Modeling*, ESRI Press, 2005.

Solutions to the problem sets will entail use of Excel97 based spreadsheet templates based on the SMURA text. Selected chapters from the SMURA text will be used in conjunction with the spreadsheet templates. EGB 1-19-08