

WWS 535: Planning Methods
Spring 2004

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Office Hours: **Tuesdays, before class, by appointment**

Course Requirements: Problem Sets (40%)
Midterm Exam (20%)
Final Exercise (40%)

Course Description: This course introduces a set of concepts and tools that are widely used in the practice of urban and regional planning. The focus is on developing an operational understanding of the models, techniques and data used in such applications as regional economic and demographic projections, cost-benefit analysis, and land use analysis. Major topics include:

1. Demography: Planners need to understand the characteristics of the population they serve. This requires learning how to describe the current size, age distribution, vital statistics, and composition of that population. It also means learning how to project the characteristics of the future population, using models of growth, migration, and interregional population dynamics.
2. Regional Economics: The open nature of most urban and regional economies has led to the development of special tools for studying their performance. Simple methods will be learned for evaluating regional industrial specialization and change. The more complex tools of regional, interregional, and multi-regional input-output analysis will be explored from the point of view of the informed consumer. Extensions of income accounting tables into social accounting matrices that capture distributional factors will also be examined.
3. Land Use: Urban and regional planners must be concerned with the spatial dimension of economic decisions. Neoclassical and structural approaches to industrial location, land markets, and agglomeration will be explored, as will simple models examining spatial interactions. We will also examine the literature on economic development policy and its impacts, which has become a crucial planning issue. An introduction to Geographic Information Systems will also be provided.

4. Project Evaluation and Welfare Analysis: Planners' decisions have real-world effects and thus must be informed by both the overall net benefits they create and the distribution of those benefits. In addition to studying the methods by which specific projects' desirability can be evaluated, we will examine methods for analyzing their implications for equity and welfare.

Problem sets will require use of computers, and will test students' ability to perform simple analyses using the methods developed in class. Students should be familiar with a spreadsheet program.

Understanding the tools utilized by planners and those who report to them requires proficiency in some mathematics. The necessary mathematical background for the methods examined will be covered in class and in the readings.

Book Notes:

Klosterman, R. (1990), *Community Analysis and Planning Techniques* (Savage, Maryland: Rowman & Littlefield), **K**, is a primary text for the first half of the semester. It is available at the Stokes library.

Krueckeberg, D. and A. Silvers (1974), *Urban Planning Analysis: Methods and Models*, serves as a supplementary text. This book is out of print, but copies are on reserve in the Stokes library. Read the assigned sections, but also use it as a reference on other topics.

Chiang, A. (1984), *Fundamental Methods of Mathematical Economics* is a basic reference text and is available in the Stokes library. Use it to clarify mathematical points that you don't fully understand.

I. Introduction and course overview

II. Demography

A. Introduction and Descriptive Demography of Static Populations

Haupt, A. and T. Kane (1998) *Population Reference Bureau's Population Handbook*. Online at http://www.prb.org/Content/NavigationMenu/PRB/PRB_Library/Population_Handbook/PopHandbook_Eng.pdf [H&K] Chapters 1-7 (pp. 1-34).

Recommended

Klosterman, R. 1990. *Community Analysis and Planning Techniques* (Savage, Maryland: Rowman & Littlefield), [K], Chapter 4.

Newell, C. 1988. *Methods and Models in Demography*, pp. 1-34 (Chapters 1, 2, and 3).

B. Population Projection Models

H&K, Chapters 8, 12 (pp. 35-36, 43-50).

K, Ch. 1-3, 5-7.

Newell, op. cit., pp. 180-189 (Chapter 15).

Recommended

Woods, R. and P. Rees (1986), *Population Structures and Models*, pp. 1-20, 95-125 (Chapters 1, 2, and 6).

C. Migration

K, Ch. 8.

Massey, D. et al. 2002. "Theories of International Migration: A Review and Appraisal," Chapter 23 of F. Trovato, ed., *Population and Society: Essential Readings*.

Todaro, M. (1969), "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," *American Economic Review*, Vol. 59, No. 1.

Recommended

Greenwood, M. (1975), "Research on Internal Migration in the United States: A Survey," *Journal of Economic Literature*, Vol. 13, No. 2. Woods and Rees, op. cit., pp. 160-244

(Chapters 8 and 9).

Newell, op. cit., pp. 82-89 (Chapter 7).

III. Regional Economic Systems

A. National and Regional Income Accounts

Bendavid-Val, A. (1991), *Regional and Local Economic Analysis for Practitioners*, 4th edition, pp. 41-65 (Chapters 5 and 6).

Richardson, H. (1978), "The State of Regional Economics: A Survey Article," *International Regional Science Review*, Vol. 3, No. 1, pp. 1-48.

B. Economic Base and Shift-Share Analyses

K, Ch. 9-13.

Stevens, B. and C. Moore (1980), "A Critical Review of the Literature on Shift-Share as a Forecasting Technique," *Journal of Regional Science*, Vol. 20, No. 4, pp. 419-437.

Isserman, A. (1977), "The Location Quotient Approach to Estimating Regional Economic Impacts," *American Institute of Planners Journal*, pp. 33-41.

Recommended

Pleeter, S. (1980), "Methodologies of Economic Impact Analysis: An Overview," in S. Pleeter, ed., *Economic Impact Analysis: Methodology and Applications*, pp. 7-31.

C. Regional Input-Output Analysis

Miller, R. and P. Blair (1985), *Input-Output Analysis: Foundations and Extensions*, pp. 1-31 (Chapters 1 and 2).

Recommended

Di Pasquale, D. and K. Polenske (1980), "Output, Income, and Employment Input-Output Multipliers," in S. Pleeter, ed., *Economic Impact Analysis: Methodology and Applications*, pp. 85-113.

Miller and Blair, op. cit., pp. 100-116 (Sections 4-1, 4-2).

Bendavid-Val, A. (1991), op. cit., pp. 95-125 (Chapter 7).

D. Interregional and Multiregional Input-Output Analysis

Miller and Blair, op. cit., pp. 45-90 (Chapter 3).

Danziger, S. and R. Haveman (1977), "Tax and Welfare: An Analysis of Regional and Distributional Impacts," *National Tax Journal*, Vol. 30, No. 3, pp. 269-283.

Recommended

Miller and Blair, op. cit., pp. 116-140 (Sections 4-3, 4-4, and 4-5).

E. Social Accounting

Bendavid-Val, op. cit., pp. 115-122 (Chapter 10).

Pyatt, G. and J. Round (1985), "Social Accounting Matrices for Development Planning," in Pyatt, G. and J. Round, eds., *Social Accounting Matrices: A Basis for Planning*, pp. 52-69.

MIDTERM REVIEW

MIDTERM EXAM

SPRING BREAK

IV. Land Use and Spatial Analysis

A. Travel Behavior, Land Use

Haynes, K. and A. S. Fotheringham (1984), *Gravity and Spatial Interaction Models*, pp. 9-40 (Chapters 1-3).

Krueckeberg, D. and A. Silvers (1974), *Urban Planning Analysis: Methods and Models*, pp. 284-314 (Chapter 9).

Alonso, W. (1970) "A Theory of the Urban Land Market," Chapter 4 in W. Leahy, et. al., *Urban Economics*, pp. 55-63.

Recommended

Isard, W. (1960) *Methods of Regional Analysis: An Introduction to Regional Science*, pp. 423-488 (Chapter 11).

DiPasquale, D. and W. Wheaton (1996) *Urban Economics and Real Estate Markets*, Chapter 3.

B. Industrial Location and Economic Development

Alonso, W. (1952), "Location Theory," in Edel and Rothenberg, eds., *Readings in Urban Economics*, pp. 16-37

Moses, L. (1958), "Location and the Theory of Production," *Quarterly Journal of Economics*, May, pp. 259-272.

Herzog, W. and A. Schlottmann, eds., (1991) *Industry Location and Public Policy*, Chapters 2 and 4 (Wasylenko and Bartik papers).

C. Urban Agglomeration

Quigley, J. (1998), "Urban Diversity and Economic Growth," *Journal of Economic Perspectives*, Vol. 12, No. 2, pp. 127-138

Glaeser, E. et al. (1992), "Growth in Cities," *Journal of Political Economy*, Vol. 100, No. 6, pp. 1126-1152.

Rosenthal, S. and W. Strange (2001), "Geography, Industrial Organization and Agglomeration," forthcoming, *Review of Economics and Statistics*, to be distributed in class.

Recommended

Carlino, G. (1979), "Increasing Returns to Scale in Metropolitan Manufacturing," *Journal of Regional Science*, Vol. 19, No. 3, pp. 363-374.

Henderson, J.V., A. Kuncoro and M. Turner, (1995), "Industrial Development in Cities," *Journal of Political Economy*, Vol. 103, No. 5, pp. 1067-1090.

D. Geographic Information Systems¹

O'Looney, J. 2000. *Beyond Maps: GIS and Decision Making in Local Government*, Redlands, California: ESRI Press. Read part 1 (pp. 3-84) and chapter 8 (pp. 133-153). Skim the rest of the book; read those parts that interest you.

ARCVIEW documentation (skim).

Recommended

Levine, J. and J. Landis (1989), "Geographic Information Systems for Local Planning," *Journal of the American Planning Association*, Spring, pp. 209-220.

Star, J. and J. Estes (1990), *Geographic Information Systems: An Introduction*, pp. 24-75, 143-173 (Chapters 3,4,5, and 8).

V. Decision and Benefit-Cost Analysis

A. Optimization Techniques

Miller, R. (2000), *Optimization: Foundations and Applications*, pp. 383-411 (Chapter 7), New York: John Wiley & Sons.

Nicholson, W. (1985), *Microeconomic Theory, Basic Principles and Extensions*, pp. 25-72 (Chapter 2).

B. Benefit-Cost Analysis

Gramlich, E. 1990. *A Guide to Benefit-Cost Analysis*, pp. 92-114 (Chapter 6).

Schofield, J. (1987), *Cost-Benefit Analysis in Urban and Regional Planning*, pp. 11-52 (Chapters 2-4), pp. 99-131 (Chapters 9, 10).

Recommended

Gramlich, E. 1990. *A Guide to Benefit-Cost Analysis*, pp. 1-91, 134-149 (Chapters 1-5, 8).

C. Welfare and Inequality Analyses

Cowell, F. (1977) *Measuring Inequality: Techniques for the Social Sciences*, pp. 17-39.

Coulter, P. (1989), *Measuring Inequality: A Methodological Handbook*, pp. 11-62 (Chapters 2, 3).

Roback, J. (1982), "Wages, Rents, and the Quality of Life," *Journal of Political Economy*, Vol. 90, No. 6, pp. 1257-1277.

Recommended

Gramlich, E. 1990. *A Guide to Benefit-Cost Analysis*, pp. 115-133 (Chapter 7).

VI. Course Review

Schedule of Topics

February 3	Introduction and Descriptive Demography of Static Populations
February 10	Population Projection Models and Migration
February 17	National and Regional Income Accounts; Economic Base and Shift-Share Analyses
February 24	Input-output Analysis 1
March 2	Input-output Analysis 2; Social Accounting, Midterm Review
March 9	Midterm Exam
March 16	Spring Break
March 23	Travel Behavior and Land Use
March 30	Industrial Location; Agglomeration
April 6	Optimization
April 13	Benefit-Cost Analysis
April 20	Welfare and Inequality Analysis
April 27	Loose ends; Course Review

¹ Geographic Information Systems session TBA