

**UP 6120**  
**Planning Studies and Methods**  
Winter 2021

Class Time: Th 5:30 to 8:50  
Office hours: Wednesdays at 4:30 pm via zoom  
Computer Lab: See notes below

Rayman Mohamed  
Online  
Email: [rayman.mohamed@wayne.edu](mailto:rayman.mohamed@wayne.edu)

UP 6120 is the second-level core course in planning methods. (The first, an introductory course, was UP 5010). The course will cover analytic methods important to practicing planners, and is divided into four areas: an introduction to microeconomic analysis, understanding local population dynamics (building on materials covered in UP 5010), evaluating local economic conditions, and benefit-cost analysis. The materials are presented in this order.

The introduction to microeconomics and benefit-cost analysis in this class are odd. However, the Master of Urban Planning Program needs a place to teach these topics, and this is the only place to do so!

The meat of the course will be the two topics in the middle. These two areas are important to understanding places, and communicating that knowledge to clients, decision-makers, the public, and other planners.

Basic Excel competency is expected to be successful in the class.

Learning Outcomes are categorized following the four areas of the class. By the end the class, students will be able to:

**Part 1: Introduction to Microeconomics – Week 1-2**

- Introduction and ten principles of economics.
- Explain supply, demand, and market equilibrium using graphs and formulas.
- Elasticities of demand.

**Part 2: Household and Population Characteristics and Projections – Weeks 3 to 6 (note the missed class)**

- Identify a neighborhood's housing and population characteristics using American Community Survey and the Decennial Census (the first week is a recap of UP 5110).
- Determine whether changes in housing and population characteristics are statistically significant.
- Calculate measures of a population's concentrations in neighborhoods.
- Measures of inequity.
- Use advanced methods for projecting changes in population.

**Part 3: Economic Characteristics, Projections, and Benefit Cost Analysis**– Weeks 7 to 10  
(with midterm on week 9)

- Identify and describe a region’s economic base.
- Determine basic and non-basic jobs in the local economy
- Analyze labor force data to identify a region’s economic strengths using data such as the Quarterly Census of Employment and Wages and other BLS and BEA data
- Find and understand origin-destination data at the city level

**Part 4: Benefit-Cost Analysis** – Weeks 11 to 14

- Describe the equivalence of money over time
- Perform benefit-cost analysis.

**Course Materials**

There is one required texts for the course:

- Klosterman, Brooks, et al. 2018. *Planning Support Methods*, Rowman and Littlefield.

We will also use a few chapters from a manuscript for the book listed below, which I will either hand out or post on Canvas. These chapters provide additional examples of the kinds of work presented Klosterman et al. This is a very good book, but unfortunately it is very expensive!

- Xinhao Wang and Rainer vom Hofe. *Planning Methods Research Methods in Urban and Regional Planning*. Tsinghua University Press.

For the cost/benefit portion of the, we will use Chapters from the book below, which I will either hand out or post on Canvas:

- Eugene Grant, et al. (1994), *Principles of Engineering Economy*, 8<sup>th</sup> ed., Wiley.

We will not use any texts for the microeconomics section of the course. There are many good books and YouTube videos available for free.

I would also recommend a book on technical writing. There are many good books out there and anyone will work.

If you are not familiar with Excel, I urge you to obtain a user guide. Almost any user guide would be sufficient. You may also wish to use the Excel tutorial services provided by the library.

I will also provide occasional readings.

**Course Requirements**

You will be evaluated based on one mid-term exam, one final exam, one class project, three to four assignments, and class participation. The individual scores for these are:

Homework:	20 %
Midterm exam:	25 %
Final exam:	25%
Project:	20%
Class participation:	10 %

The only excuses I will accept for late projects or assignments are (a) serious illness; (b) religious observance; or (c) family emergency.

For all written submissions, I strongly advise you to **keep an additional copy**. This may be an electronic or hard copy. If it is an electronic copy, be sure that it contains all the graphics and tables such that it is easily reproducible. In the case of handwritten homework, keep a **photocopy**. (Not pertinent to a class taught purely online, but I will keep this text in case I need it in the future.)

### **Lab Requirements**

When we do labs, we will be doing so 6:45 and 8:50 pm; but this is subject to change as the semester proceeds. Midterm and final exams will require the use of your computers.

## Class and Assignment Schedule

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### PART ONE

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#### Week 1 Jan 14

Class introduction and introduction to microeconomics:

- The 10 principles of economics
- Supply and Demand
  
- This [website](#) and look at all the videos under item number 2. Each bullet point below should also take you directly to the appropriate video. If it does not, just start from Number 2 and work your way through the list.
  - [The Demand Curve](#)
  - [The Supply Curve](#)
  - [The Equilibrium Price](#)
  - [A Deeper Look at the Demand Curve](#)
  - [The Demand Curve Shifts](#)
  - [A Deeper Look at the Supply Curve](#)
  - [The Supply Curve Shifts](#)
  - [Supply and Demand Terminology](#)

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#### Week 2 Jan 21

Introduction to microeconomics continued

- Equilibrium and Elasticity and Its Applications
  - [Exploring Equilibrium](#)
  - [Does the Equilibrium Model Work?](#)
  - [Elasticity of Demand](#)
  - [Calculating Elasticity of Demand](#)

*HW 1 handed out*

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### PART TWO

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#### Week 3 Jan 28

Recap: The U.S. Census

- [The Decennial Census](#)
- [The Long Form Census](#)
- [The American Community Survey](#)
- Klosterman et al. Appendix A
- Klosterman et al. Appendix B pages 265 up 267 (up to and including “Reference Period Differences”)
- Klosterman et al. Chapter 2, pages 13 to 17; 22-31.

- Wolfers, J. 2015. [Census Bureau's Plan to Cut Marriage and Divorce Questions Has Academics Up in Arms](#), New York Times, January 1, 2015

Lab session: data.census.gov

*HW 1 due*

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## **Week 4 Feb 4**

The census and sampling errors

Measures of Sampling Error

Standard errors

Margins of error

Confidence intervals

Coefficients of variation

- Klosterman et al. Appendix B, pages 267 (starting from Measures of Sampling Error) to 269
- <https://www.census.gov/content/dam/Census/library/publications/2009/acs/ACSResearch.pdf> (Appendices 3 and 4; also on Canvas).
- Niles, R. (2013) "Statistics Every Writer Should Know," Available online, <http://www.robertniles.com/stats/>
- Washington Census Errors Calculation Example.pdf (Canvas)
- Michigan Census Errors Calculation Example.pdf (Canvas)

Lab session: Statistically significant changes

*HW 2 handed out*

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## **Week 5 Feb 11**

Measuring concentrations, Lorenz Curve, and Gini Coefficients

- Handout on Canvas
- Klosterman et al. pages 31 to 34.

Consumer Price Indices

- <https://www.minneapolisfed.org/community/teaching-aids/cpi-calculator-information/consumer-price-index-and-inflation-rates-1913>
- [Historical Consumer Price Index \(1982 = 100\)](#)
- Math Calculations to understand CPI data (Canvas)

Lab session: Measuring concentrations  
Gini coefficient  
Inflation

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## **Week 6 Feb 18**

Housing data (note that we are not doing much on this)

- [American Housing Survey](#)

Collecting your own housing data (*Note again that we will not be doing much of this. I would just like to introduce the topic.*)

- Crump, J. A Guide to Neighborhood Housing Assessment: A Student Workbook, University of Minnesota Housing and Community Development Course, Available online, <http://faculty.design.umn.edu/jrcrump/pdf/assessment.pdf>, No date. (Read Appendix 3: Housing Conditions Survey Form)

Trend population projection methods (this you know already: this is a recap)

- Klosterman, et al. Chapter 3

Cohort component population method

- Klosterman et al. Chapter 5

Shift share projection methods

- Klosterman et al. Chapter 4

Lab session: Cohort component projection methods

*HW 2 due*

*HW 3 handed out*

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## PART THREE

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### Week 7 Feb 25

Introduction to economic data concepts and data sources

Economic base theory

Location quotients

- Wang and vom Hofe, Sections from Chapter 4 (Canvas)
- Klosterman, et al. Chapter 6, pages 125 to 138 (up to the heading Location Quotients)

Lab session: Economic data, location quotients, basic jobs, and BLS data

*HW 3 due*

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### Week 8 Mar 4

Employment multipliers

More economic data

Lab session: QCEW data.

*HW 4 handed out*

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## **Week 9 Mar 11**

### **MID-TERM ON YOUR COMPUTER**

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**\*\*\* NO CLASS ON MAR 18—SPRING BREAK \*\*\***

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## **Week 10 Mar 25**

Constant Share and Shift-Share Approaches

- Wang and vom Hofe, Chapter 4

Longitudinal Employment Household Dynamics (LEHD)

LEHD on the Map

- US Department of Commerce. 014. US Census Bureau. Longitudinal Employer-Household Dynamics (LEHD), Available online, <http://lehd.ces.census.gov/>

Lab session: Shift share analysis and LEHD (only occupation-residence data)

*HW 5 handed out*

*HW 4 due*

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## **Week 11 Apr 1**

Catch up week

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### **PART 4**

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## **Week 12 Apr 8**

Cost-benefit analysis 1

- Grant et al., Chapters 1 through 3
- Note that we start from Chapter 3; you must read 1 and 2 yourself.

*HW 5 due*

*HW 6 handed out*

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## **Week 13 Apr 15**

Cost-benefit analysis 2

- Grant et al., Chapters 4 through 5

Cost-benefit analysis 3

- More examples

Lab session: Cost-benefit analysis in spreadsheets

*HW 6 due*

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**Week 14 Apr 22**

Cost-benefit analysis 3

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**Week 15 Apr 29**

**FINAL EXAM OPEN BOOK OPEN NOTES**