Humphrey School of Public Affairs
University of Minnesota

PA 5043: Economic and Demographic Data Analysis

Tu/Th 1:00p-2:15p HHH 25 (3/19-5/4) (2 credits)

Lab Sessions:
Section 002: F 9:45-11:00, HHH 85
Section 003: F 11:15-12:30, HHH 85

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Course Description:
This course aims at developing quantitative data analysis skills in the areas of economic and demographic analysis of small geographic areas. The methods covered are used to analyze the structure of regional and local economies, such as location quotient analysis and the economic base model, and to analyze the structure of the population and project population change over time. Familiarity with Microsoft Excel is assumed.

Learning Objectives:
By the end of the course, students should have acquired the following competencies:

• Be familiar with, and able to search, the most important online public sources of quantitative economic and demographic data that provide information at the regional and local levels,
• Be able to effectively download data from these sources and put them in a suitable format for analysis,
• Become comfortable with models and mathematical representations of reality, and be able to competently move back and forth from verbal to mathematical formulations of economic and demographic concepts,
• Be able to effectively manipulate data and conduct quantitative analyses using a spreadsheet program such as Excel,
• Be able to accurately interpret quantitative results,
• Understand the economic and demographic factors that underlie the growth of urban and regional economies,
• Be able to evaluate the assumptions that underlie quantitative models and analyses and assess their limitations,
• Be able to prepare clear, accurate and compelling reports using text, tables and graphics,
• Become intelligent consumers and critical readers of work that uses quantitative methods, and
• Be aware of the ethical dimensions of quantitative data analysis and interpretation and the various ways in which data can be manipulated to come up with the “right answer.”

The lectures will focus on concepts, assumptions, and interpretation of results. The labs and assignments will provide an opportunity to apply the methods learned to regional and local data from Minnesota and the U.S.
**Texts:**

The textbook is available as an E-Book from the Moodle website. Other reading assignments are also available from the Moodle site.

**Assignments and Grading:**
Two 15-minute multiple choice quizzes will be administered during lab. The quizzes will be open book/open note and will be designed to test your understanding of the concepts covered in class. You will be assigned to a team for the purpose of completing two team projects. Your grade for the projects will be based on that of your team, but will include a component that depends on an evaluation of your contribution to the team process by your team members. The final exam is a take-home, open book, open notes exam to be carried out individually. Team projects and the final exam are due at 11:59pm via Moodle on the due date listed below. The final letter grade will be based on your performance relative to others in the class.

<table>
<thead>
<tr>
<th>Assignment Title</th>
<th>Due Dates</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>Two in-class quizzes (10 points each)</td>
<td>4/6, 4/20</td>
<td>20</td>
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<tr>
<td>Regional Economic Analysis Project</td>
<td>4/13</td>
<td>25</td>
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<tr>
<td>Regional Demographic Analysis Project</td>
<td>5/4</td>
<td>25</td>
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<tr>
<td>Take-home Final Exam</td>
<td>5/9</td>
<td>30</td>
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**Course Schedule**

Week 1 (3/20, 3/22)  
Introduction to Regional Economic Analysis, Regional Economic Data sources and Data Classifications Schemes & The Economic Base Model  
Lab 1 (3/23)  
Downloading County and Metropolitan Employment Data

Week 2 (3/27, 3/29)  
Estimating Basic Employment: Assumption & Location Quotient Approaches  
Lab 2 (3/31)  
Estimation of Basic Employment Using Location Quotient Method

Week 3 (4/3, 4/5)  
Projecting Employment and Economic Impact Analysis  
Lab 3 (4/6)  
Quiz #1 & Continuation of Basic Employment Estimation

Week 4 (4/10, 4/12)  
Introduction to Small Area Population Analysis and Demographics.  
Lab 4 (4/13)  
Downloading and Analyzing Regional Population Data

Week 5 (4/17, 4/19)  
Population Extrapolation Techniques  
Lab 5 (4/20)  
Quiz #2 & The Population Extrapolation Template

Week 6 (4/24, 4/26)  
The Cohort-Component Method: Overview and the Mortality Component
Assigned Readings:

Week 1 Introduction to Regional Economic Analysis, Regional Economic Data sources and Data Classification Schemes & The Economic Base Model
- Browse in http://www.census.gov/eos/www/naics/
- And https://www.census.gov/programs-surveys/cbp.html
- Klosterman Ch. 9

Week 2 Estimating Basic Employment: Assumptions and Location Quotient Approaches
- Klosterman Ch. 10, pp. 125-134.

Week 3 Projecting Employment and Economic Impact Analysis
- Klosterman Ch. 12, 169-175.
- Klosterman, Ch. 13, 189-193.

Week 4 Introduction to Small Area Population Analysis and Demographics
- Also check out “MOST RECENT POPULATION PROJECTIONS THROUGH 2045” http://mn.gov/admin/demography/data-by-topic/population-data/our-projections/index.jsp
  - Explore web site and check out different geographic areas for which projections are available from the State.

Week 5 Population Extrapolation Techniques
- Klosterman Ch. 1.
- Klosterman Ch. 2, pp. 9-19.
- Klosterman Ch. 3.

Week 6 The Cohort-Component Method: Overview and the Mortality Component
- Klosterman Ch. 4, pp. 51-64.

Week 7 The Cohort-Component Method: The Fertility and Migration Components
- Klosterman Ch. 6, pp. 81-86.
- Klosterman Ch. 7, pp. 89-95.
Student Conduct Code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: http://policy.umn.edu/education/studentresp.

Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: http://policy.umn.edu/education/instructorresp.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: http://www1.umn.edu/oscai/integrity/student/index.html. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class—e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: http://policy.umn.edu/education/makeupwork.

Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or
accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/education/studentresp.

**Sexual Harassment**

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf

**Equity, Diversity, Equal Opportunity, and Affirmative Action**

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf.

**Disability Accommodations**

The University of Minnesota views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Twin Cities - 612.626.1333) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, can often work with instructors to minimize classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact your access consultant/disability specialist.

Additional information is available on the DRC website: https://diversity.umn.edu/disability/ or e-mail: drc@umn.edu with questions.

**Mental Health and Stress Management**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: http://www.mentalhealth.umn.edu.
**Academic Freedom and Responsibility:**

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

*Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*