1. **Course description.** This course will analyze issues of spatial economics, including why cities are formed, patterns of residential and business location, models of housing market segregation, business location, and urban population "explosions" in developing countries. The course begins with an overview of the monocentric city model, explaining patterns of population density, commuting, and housing values. This course is the paired with Econ 146/246, a follow-on course that explores social issues and agglomeration economies in more detail. In contrast, this course will emphasize real estate and financial aspects of the housing market. A second major theme of this course will be the economy of Durham, and the underlying residential and commercial patterns.

2. **Prerequisites:** Econ 55. Introductory econometrics (Econ 139) will be extremely useful. Working knowledge of differential and integral calculus, econometrics, and Excel is necessary.

3. **Texts.** There is one required text. Copies of required journal articles and other readings, if not available through the library or Internet, will be kept on file in the EcoTeach Center. Most articles can be obtained online through Duke’s electronic journal collection, and also by downloading from various websites. My class notes will be posted on Blackboard. These are intended to be supplemental, and are neither a perfect substitute for class or for the readings.


The following are four books that together would serve as the base for graduate students wanting to do a field in urban economics. These are:


Two more books you can download (we get them electronically at the library) are

4. **Honor code and course policies.** Failure to acknowledge assistance on an assignment, or to cite a source of information used in an assignment, or to represent the work of others as your own, violates the University's honor code. Any violations may result in failure of the assignment or the course, or expulsion from the University.

Any exam missed for a non-legitimate reason will be accorded the grade of 0. Any exam missed for a legitimate reason will be made up with an oral exam as soon as EcoTeach can schedule it.

Late work will be penalized by 1/3 grade point per day late (excluding Sundays).

Assignments must be submitted via Blackboard. An electronic and a hard copy of the term paper must be submitted to the instructor.

Standard formatting for regular text material shall be as follows: 1-inch margins top/bottom/left/right; 1.5 line spacing; extra space between paragraphs; Garamond 12 font; right hand justification for main text. References and footnotes should be single space (with space between individual citations) and Garamond 11 font.

Assignments and term papers that have not gone through a basic spell and grammar check will not be accepted. Files attached with viruses will be deleted and not regarded as submitted; if for some reason the virus gets through and infects one of my computers, you will receive a grade of 0 for the assignment.

5. **Grading and assignments.** The grades will be determined as weighted averages of exam and homework performances:

- Durham overview: 5% Sept 10
- Literature survey and technical presentation (10% each): 20% Sept 17, Oct 15
- Durham paper: 20% Nov 5
- Research project/term paper: 35% Dec 3
- Final examination: 20% Dec 14

The essays/presentations include (1) an untrained overview of Durham, (2) a brief literature survey on a policy topic of interest, with dissemination via Blackboard to the class, (3) a technical presentation (via Blackboard, but also possibly "live"): short but detailed presentation of a formal (i.e., mathematical) spatial economic model, or pertinent statistical technique, and (4) an analysis of an urban policy issue relevant to Durham. Presentations will occur during or near the first half of the semester; all topics must receive the instructor's approval.

The term paper is expected to be 15-20 pages in length plus tables, on a topic of the student's choice, but subject to instructor approval. The paper is expected to involve [a] original empirical or theoretical research (required of graduate students in Econ 245), or [b] a comprehensive survey a topic, and provide policy analysis in light of recent data and research. However, I will push strongly for all students to undertake original empirical work, regardless of whether or not it makes use of sophisticated statistical techniques.

The final examination will be comprehensive, but will have a Durham focus.

6. **Focus: Durham – initial assignment and final exam.** One of the purposes of this course is to give you a much deeper understanding of the community in which you are at least temporarily living; I also want to

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1 I reserve the right to cancel the final, in which case the Durham paper will count for 30% and the term paper 45% of the total grade.
remove the abstractness of the course topic. To tie it in, your first and last assignments (the last being the final exam) will focus on Durham.

In the first, I simply want you to visit 11 sites in Durham and observe. For each one, write up notes (a paragraph on each) on what strikes you about the street, neighborhood or commercial area (one block in all directions of the point identified). This assignment should only be a total of 3-4 pages, but it will be time consuming, because you have to travel all over Durham. How you do it is part of the assignment. If you don’t have a car or bicycle, you can rent a bike over at the bike store next to Whole Foods at Broad and Perry. You should choose 11 of the 22 sites listed below, but be aware that credit will be given for diversity of selection.

The locations are:

- Geer St., from Morris to Cheek
- Kent St., from Chapel Hill to University Drive
- Cole Mill Rd. and Stoneybrook
- Northgate Mall
- Downtown loop
- Alston Drive, from Cecil to Geer
- Fayetteville and NC 54 (three blocks in all directions)
- South St. from Apex to University Dr.
- Roxboro, from Pettigrew to Old Oxford Rd.
- Stoneybrook Drive, from Cole Mill Rd. to Carver
- Foster St., from Washington to Chapel Hill Rd.
- Surrey Rd., from Hope Valley to Devon
- Ridge Rd., from Cornwallis to Pickett
- Old NC 10 and Hemlock Dr.
- Cheek Rd., from Geer to Falls Lake
- Club Blvd., from Hillandale to N. Duke
- Burch Ave., from Swan to Buchanan
- Buchanan Blvd., from Yancey to Knox
- James, from University Ave. to Morehead
- Harvard Ave.
- E. Main, from Roxboro to Guthrie
- Roxboro-Club Acadia-Lavender loop
- NC Central University and surrounding area

Notes:

- You should be able to do this in half a day.
- I recommend going in daylight.
- If driving, do not park in a bad neighborhood and take notes. This makes you look like an inexperienced undercover police officer.
- International students must pair with an American student.

The final exam also will focus on some of the communities listed above. But, this time I will prepare some specific questions in advance, and allow you to come to the final with a notebook on these locations. The exam will ask you to apply specific theoretical models to explain the patterns you observe, and also will have you compare these patterns to empirical findings from other cities.

7. **Focus: Durham – paper.** This is a short paper of 6 to 8 pages (plus tables) in which you are to address a spatial feature or policy issue related to Durham, subject to my approval. Ideally, the paper will involve data analysis and address an issue of policy interest; it will also include a discussion of past patterns or policy decisions. Recent topics range from analyses of the determinants of commercial property prices/rental
rates to determinants of housing values in Durham and Orange Counties to analysis of trends in racial segregation to analysis of patterns of new housing starts and residential density to an analysis of the impact of the Durham jail’s site for downtown expansion.

**Durham has great data and websites:**

American Tobacco Historic District  
Corporation for Economic Development:  
Detailed maps of Durham and other useful information  
Downtown Durham Inc  
Duke library census data site:  
Durham interactive mapping applications  
Durham quick facts from US census:  
Durham city gov’t demographics by tract:  
Durham Housing Authority  
Durham HOPE VI site  
Durham Chamber of Commerce  
Durham City Gov’t – Office of Econ. & Employment Dev.  
Hayti historical district homepage  
Hayti Heritage Center/St. Joseph’s Historic Foundation  
LINC (log into North Carolina)  
NC collection at the Durham County library  
NC demographic & statistical data sources  
NC crime statistics  
NC city & town detailed profiles:  
Old West Durham Association  
Real estate data:  
Southern Growth Policies Board:  
Self Help Credit Union  
US Census, small area income & poverty estimates  

**Best local blogs:**

Bull City Rising (read this every day)  
Endangered Durham  
Carpe Durham  
Bull’s Eye (Ne+O)  

**Other useful data sites:**

Asian Bonds Online  
Atlanta Fed’s EconSouth  
City-data.com  
Cityfeet  
Econ 145 data resources at Perkins Library  
GeoDa (intro to spatial data analysis)  
HMDA (Housing Mortgage Disclosure Act)  
HUD state-of-the-cities data system  
LoopNet  
OFFHEO housing value data:  
Philadelphia Neighborhood Information System  
Properazzi (global property listings)  
PUMS (public use microdata)  
S&P Case-Schiller home price indices  
Spatial econometrics with Matlab  
Transportation Research Board of the National Academies
8. **Visiting speakers.** In addition to learning about Durham and the Triangle region, we will have one or two visiting speakers. One likely presentation is by Freeman Ledbetter, a local housing developer who has built homes (all unique – no cookie-cutter) all over Durham. I hope as well to bring in major developers Andrew Rothschild (Scientific Properties) and Michael Lemanski (Greenfire Development), as well as representatives from DDI and the city government. On days with visitors, you will be responsible for getting material from my on-line lecture notes. My guess is that we will have visitors 2-4 times during the course of the semester.

9. **Course outline and lots of literature.** As we come to each topic, I will give an updated list of required and optional readings. You should regard the following more of a starting bibliography than a reading list. The most important papers are starred (*). Others are optional and good choices for your technical review.

You should also see this list as a guide, rather than something you are expected to master. The McDonald and McMillen text is the core, and you should read it. You are also responsible for everything covered in my notes. If that material is technical, I will cover it in class, and not expect you to cover much else. If it is not terribly technical from the standpoint of theoretical difficulty, I will expect you to read one or more of the optional readings, and be prepared to discuss it in class. Finally, I should note that many of the topic delineations (and hence reading assignments) are rather arbitrary. Don’t worry about it: as the semester progresses, earlier pieces will fit into the topics we are discussing. The structure as presently designed is one that bounces back and forth, gradually building technical models during the course of the semester, rather than providing half a semester of grueling models, followed by policy and implications. I think you’ll enjoy this mixed approach more.

In addition to the materials given below, when beginning a research paper (or thesis), a great place to start is with the comprehensive surveys in the North-Holland *Handbook* series.
Overview: thinking of cities from an economic perspective

Wednesday August 27  Introductory Lecture: Why do cities exist?

- McDonald & McMillen, Chs. 1-3.

Stylized facts and patterns I: big and small cities


Wednesday September 3  Stylized facts and patterns II: central place theory

- McDonald & McMillen, Ch. 4.

Stylized facts and patterns III: urban economic growth

- McDonald & McMillen, Chs. 19-20.

Section 1: Economic Models of Cities

Wednesday September 10  Land rent and urban structure

- McDonald & McMillen, Ch. 5.

Land use in the monocentric and modern cities

- McDonald & McMillen, Chs. 6-7.


**Assignment 1 (Durham overview) due**

**Wednesday September 17**  
**Agglomeration and other economies**

- McDonald & McMillen, Chs. 19-20. *

**Land use controls, zoning, and the Tiebout model**

- McDonald & McMillen, Ch. 13.*

**Assignment 2 (literature survey) due**
Section 2: US Racial Housing Segregation and housing demand

Wednesday September 24  Household sorting, search costs, and segregation

- McDonald & McMillen, Chs. 8-9.

More models

Section 3: Real Estate

Real Estate Law, Institutions, and Markets (demand and supply)

- McDonald & McMillen, Chs. 10-12.

Mobile homes

Assignment 3 (technical article presentation) due
Wednesday October 8  Real estate asset valuation, development, and investment

• McDonald & McMillen, Chs. 15-16. *
• Term paper topic and outline due

**Wednesday October 15**          **Sub-prime mortgages and other financial issues**
• McDonald & McMillen, Chs. 17-18. *

**Wednesday October 22**          **Housing booms and busts**


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**Local governments, property rights, and local economic development**

• McDonald & McMillen, Ch. 13*


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**Wednesday October 29**

**International real estate topics**


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* indicates a cited reference.
• Sherry Z. Zhou and Helen X.H. Bao, “Modeling price dynamics in the Hong Kong property market,” Kowloon, HK: City University of Hong Kong, unpublished ms.

Property rights in developing countries and other local government issues


Section 4: Urban Transportation

### Wednesday November 5

#### Autos, highways, and congestion

• McDonald & McMillen, Ch. 14. *

#### Mass Transit


• Assignment 4 (Durham urban policy analysis) due
Section 5: Business Location Theory & Economic Geography

Wednesday November 12  Business location and the core model of spatial economics

- McDonald & McMillen, Ch. 21. *
- Becker notes*

Wednesday November 29  City and business location II: economic development strategies


Section 6: Population Explosions and Productivity Growth Centers: Cities in Developing Countries

Wednesday December 3  Urban growth in developing countries


Labor markets and migration in developing countries


- Term paper final version due

Sunday December 14  Final Exam  7:00 – 10:00 PM