Objectives

This course provides intensive instruction in methods for predicting, evaluating, and mitigating potential adverse impacts of land development projects, particularly as they affect urban infrastructure. Our purpose is to promote basic skills in using impact assessment techniques, foster the ability to apply those techniques to the assessment of impacts from actual development projects, and develop skills in reporting impact assessment analyses, findings, and recommendations in a competent, professional manner.

Development impact assessment methods are used in a variety of ways in public and private planning, including evaluation of land use planning alternatives, assessment of private and public development proposals, and marketing of development proposals. By analyzing and discussing various examples of those applications, the course will help develop an appreciation of the strengths and limitations of various impact assessment approaches in specific applications.

Course Format and Requirements

The course will meet for two sessions each week. Sessions on Mondays and Wednesdays will include lectures and discussion of key concepts covered in lectures and assigned readings. Occasional lab sessions will additionally consist of field trips and guest speakers. While the lectures, labs, and readings are important, an equally critical aspect of learning in this course comes from student preparation of a comprehensive impact assessment for a large proposed mixed-use development project.

Course requirements include: (1) class attendance and participation; and (2) completion of a comprehensive impact assessment for a large mixed-use project. Although participation in them will not be required, the field trips, guest speakers, and discussions that occur during lab sessions will be useful in answering questions for the assignments.

Students will conduct a comprehensive assessment by analyzing eight potential impacts (grouped into 6 modules) of a proposed mixed-use project and combining the assessments into a comprehensive report. This report will detail a set of your personal recommendations to the town manager for dealing with the impacts you have identified. Each section of the comprehensive impact assessment is prepared by students working as individual analysts and will be graded separately.

Detailed instructions and data for the comprehensive impact assessment exercises are provided on Sakai (http://sakai.unc.edu).
Course Grading

Students are required to:
1) Complete 6 mandatory sections of the comprehensive report (60%);
2) Participate in class discussions and attend lecture regularly (15%), and;
3) Complete a final comprehensive report with corrections to sections of the report completed earlier in the semester and final recommendations in the form of a memo to the town manager (25%). The final impact assessment report will be graded based on completion of additional sections (title page, contents, memorandum of town manager with your personal recommendations) and upon inclusion of corrected versions of reports prepared earlier in the semester with a note to the instructor indicating the specific corrections that have been made.

Grading Notes: Generally, H work goes beyond the bare minimum requirements (e.g., reports results of sensitivity analyses of key assumptions, models changes proposed as mitigation, or includes outstanding maps and illustrations of results). L or F work substantially fails to meet minimum requirements either due to incomplete coverage of required information, inaccurate or improper analysis, or sloppy/unprofessional reporting of results.

- Students are expected to complete all assignments individually. Discussions with classmates about assignments are encouraged, but all final work must be entirely your own.

Policy on Late or Incomplete Work: As a matter of departmental policy, and in order to be fair to your fellow students (particularly in light of the extensive time requirements of this course), late assignments will not ordinarily be accepted.
- No extensions will be given.
- Zero points will be assigned to work not turned in on time.

IF YOU HAVE A MEDICAL EMERGENCY, PLEASE INFORM THE INSTRUCTOR AS SOON AS POSSIBLE. Grades of incomplete may be given in the event of a medical or other emergency. In these cases, a written application for an incomplete on any assignment must state the reasons for the request and propose a new deadline.

Other Academic Business

- Please turn off your cellphones before entering class.

Missing Class: Students are permitted to miss class for EXCUSABLE absences only (for details about what an excused absence is, see UNC-Chapel Hill’s attendance policy below).

Resources: Our purpose as professors is to help you to excel in this learning environment. Should you need further assistance beyond the help of the professor, please consult the following on-campus resources:
- The Writing Center: http://www.unc.edu/depts/wcweb/
- Academic Success Program (for students with learning disabilities (LD) and/or attention-deficit/hyperactivity disorder (ADHD): http://www.unc.edu/depts/lds/
- Learning Center: http://www.unc.edu/depts/acadserv/learn.html
- Counseling and Wellness Services: http://campushealth.unc.edu
- UNC’s Attendance Policy: http://www.unc.edu/ugradbulletin/procedures1.html#class_attendance

The University’s Honor Code is in effect. The University of North Carolina at Chapel Hill has had a student-administered honor systems and judicial system for over 100 years. The Honor Code represents UNC-Chapel Hill students’ commitment to maintain an environment in which students respect one another and are able to attain their educational goals. As a student at Carolina, you are entering a community in which integrity matters--integrity in the work you submit, and integrity in the manner in which you treat your fellow Carolina community members. Because academic honesty and trustworthiness are important to professional planning, this is a significant University and Departmental tradition.
Your attention is called to the Instrument of Student Judicial Governance for policies and procedures pertaining to the honor system. We are committed to treating Honor Code violations seriously and urge all students to become familiar with its terms set out at http://honor.unc.edu/honor/code.html. If you have questions it is your responsibility to ask the professor about the Code’s application. Please consult with the instructor if you are uncertain about your responsibilities under that code with respect to this course.

The professor reserves the right to make changes to the syllabus, including project due dates, when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.

The University of North Carolina – Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in difficulties with accessing learning opportunities. All accommodations are coordinated through the Accessibility Resources and Service Office. Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately early in the semester to discuss your specific needs. Students with documented disabilities should contact the Department of Disability Services at 919-962-8300 (SASB North, Suite 2126) to coordinate reasonable accommodations.
All the Important Deadlines

Deadlines for completion of each section of the report and points available for it are as follows:

Interim reports (10 points each)
1. Introduction: February 10
2. Public Service Impacts: February 17
3. Traffic level of service impacts: March 3
4. Water supply and wastewater impacts: March 23
5. Stormwater discharge impacts: April 18
6. Climate Change impacts: April 28 (as part of Final report)
7. Final impact assessment report and memo to town manager: April 28 (5 pm in TA’s box)

- All reports (except for the last) are to be turned in at the end of class on the date they are due. To be fair to your fellow students, exceptions will only be made in case of documented illness or family emergency.

Tentative Lab Schedule:

March 2: Water Treatment Plant Field Trip – details TBA
March 22: Wastewater Treatment Plant Field Trip – details TBA

ALTHOUGH WE WILL AIM TO KEEP WITH THE SCHEDULE IN THIS SYLLABUS, IT MAY CHANGE

Topic Outline and Schedule

I. Background and Basic Concepts in Development Impact Assessment

Overview of course
1. Introduction to the comprehensive impact assessment exercise and report
2. Key choices: (1) conduct an impact assessment?, (2) approach employed, (3) impacts evaluated, and (4) methods used
3. Key choices: (5) standards adopted, (6) mitigation required, (7) monitoring and enforcement procedures
4. Overview of GIS methods

II. Estimating the Impacts of Development

5. Public Services
6. Traffic level of service
7. Water supply
8. Wastewater
9. Stormwater
10. Habitat and Wetlands
11. Climate change

III. Putting It All Together

12. Course review, feedback, and discussion of final impact assessment reports
13. Submission of final impact assessment reports
Reading Material and Assignment Background Information

Available in the Bookstore and on Amazon

Additional reading selections that elaborate on concepts presented in lectures as well as detailed instructions for completing required sections of the impact assessment report are available on Sakai.

Assignment instructions include background information, methods, and data that you would normally assemble from a wide variety of sources. To make the impact assessment feasible to conduct in a very short period of time, this material is pre-packaged.

For each course topic a key required reading is provided to enhance your understanding of class lectures and for use in estimating and mitigating development impacts. Following each required reading, additional resources are listed that can examined in detail depending upon your interest in the subject. I recommend downloading and reading through all of the materials, as they may serve you as useful references during future classes or in your career.

I. Background and Basic Concepts in Development Impact Assessment

January 11: *Overview of course*


For those of you new to planning and need a good overview of planning and infrastructure relationship: Elmer and Leigland Textbook: Chapter 3 (Growth, Demand, and the Need for Infrastructure) and Chapter 5 (Local Plans and Infrastructure)

January 13: *Introduction to Course Case Study* - **Field Trip to Roberson Square Site During Class Hours**

Meet at:
Open Eye Café (Directly north of Roberson Square study site)
101 South Greensboro Street
Carrboro, NC 27510-2338
(919) 968-9410


Additional resources:

Also note that a variety of resources related to the Roberson Square impact assessment are available on Sakai. These resources will help you understand the project and complete the first assignment.

January 18: MLK HOLIDAY – No CLASS

January 20: Key choices: (1) Whether to Conduct Impact Assessments; (2) Approach Employed; (3) Impacts Evaluated; (4) Methods Used

Overview: Elmer and Leigland Textbook: Chapter 7 (Smart and Sustainable Development Rules)


Additional resources providing an overview of development impact assessment:


Additional resources:


January 25 - February 1: Geographic Information Systems (GIS) for Impact Assessment

***This section will be guest taught by Philip McDaniel, the UNC GIS Librarian. We will be meeting in Davis Library Room 247.***

***Students are encouraged to enroll in the free Environmental Systems Research Institute (ESRI) Virtual Campus course entitled “Learning ArcGIS Desktop.” This course will augment the GIS overview section of this course and consists of 8 modules scheduled to take 24 hours. This course is very well laid out and can be completed on your own. Module 1 can be skipped if you feel you completed the GIS work in PLAN 714 and/or the planning GIS
Bootcamp successfully. The course can be accessed at: http://www.esri.com/training/main. IDs and Passwords used to access the course can be accessed by emailing the UNC GIS Librarian, Philip McDaniel at pnmcdani@email.unc.edu.


Additional resources:


February 3: Key choices: (5) standard, (6) mitigation, (7) monitoring and enforcement


Elmer and Leigland Textbook: Chapter 4 (Institutions of Infrastructure: The Providers) and Chapter 8 (Developing the Public Infrastructure Project)

Examples of Master Environmental Assessments on Sakai:


Domestic Example: City of Lakewood, CA. 2007. Master Environmental Assessment (MEA) for the City of Lakewood Comprehensive General Plan.


Additional resources: Elmer and Leigland Textbook: Chapters 9-15 provide a comprehensive overview of infrastructure financing
II. Estimating the Impacts of Development

February 8, 10: Public service impacts

Overview: Elmer and Leigland Textbook: Chapter 25 (Public Schools as Public Infrastructure) and 21 (Parks, Recreation, and Open Space)

School impacts:


Parks and recreational facility impacts:


On Reserve in Planning Library: James D Mertes and James R. Hall. Park, Recreation, Open Space, and Greenway Guidelines, National Recreation and Park Association: Lubbock, TX.

Public safety impacts:


February 15-24: Traffic level of service impacts

***This section will be guest taught by Joshua Reinke / Staff, Traffic Engineering Consultants at Ramey Kemp and Associates, Inc. ***

Overview: Elmer and Leigland Textbook: Chapter 20 (Streets and Streetscapes) and 21 (Automobiles and Mass Transit)

Methods for Predicting Traffic Impacts:

Institute of Transportation Engineers. Transportation Impact Analyses for Site Development (Student Supplement), 2006.

Additional resources:

Numerous Examples of Traffic Impact Assessment Reports are located on Sakai.


Examples of Traffic Impact Assessment Requirements: Chapel Hill, NC, Montgomery County, MD and County of Barnstable, MA


Additional resources:


February 29 - March 7: *Water supply impacts*

*** March 2: [Lab Session 1] Field trip to OWASA water treatment plant ***

*** March 7: Pat Davis (Sustainability Manager at OWASA), Guest Speaker ***

Overview: Elmer and Leigland Textbook: Chapter 16 (Water Supply)


Additional resources:


March 14 – 16: Spring Break (NO CLASS)

March 21 – 23: Wastewater impacts

*** March 22: [Lab Session 2] Field trip to OWASA wastewater treatment plant ***

Overview: Elmer and Leigland Textbook: Chapter 17 (Wastewater and New Paradigms)


Additional resources:


March 28-30, April 6-April 11: Stormwater impacts

Overview: Elmer and Leigland Textbook: Chapter 18 (Stormwater and Flooding)

Peak Discharge Impacts:


Water Quality Impacts:


Additional resources:

April 13-18: Habitat and wetland impacts


Additional resources:


April 20: Climate change impacts

Overview: Elmer and Leigland Textbook: Chapter 27 (Energy and Power)


Additional resources:


April 25: Course wrap-up + discussion of final impact assessment report

Elmer and Leigland Textbook: Chapter 29 (A New Paradigm for Infrastructure)

April 28: Final Roberson Square Impact Assessment Report: Due at 5pm in TA’s mailbox on second floor of New East.