

# Course Orientation and Overview

CE 392C

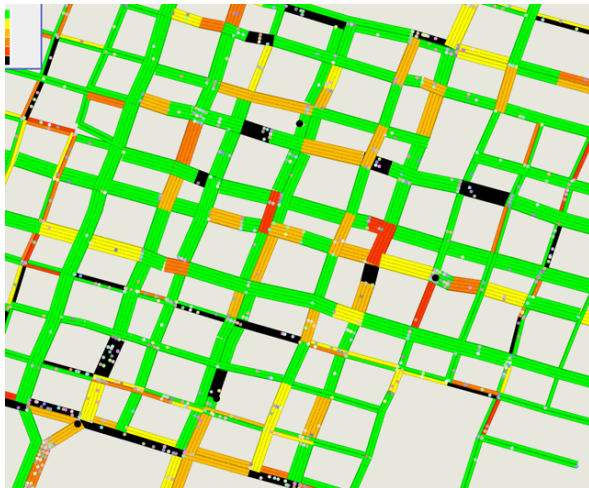
# **COURSE OVERVIEW**

## Network models represent transportation *systems*

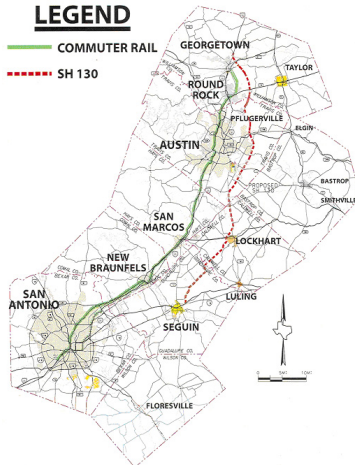


The purpose is to predict route choice and macroscopic traffic flow, and to evaluate alternatives or policies.

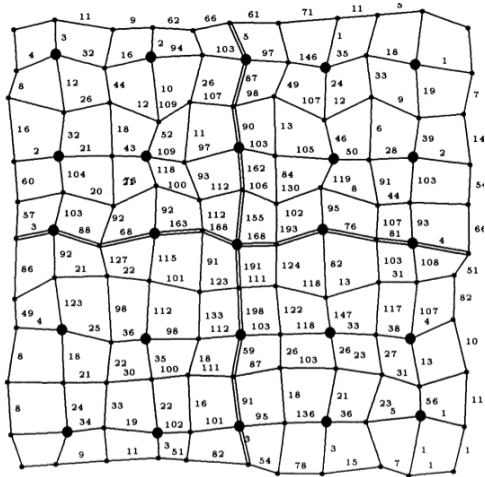
# Switching 7th and 8th Street from one-way to two-way



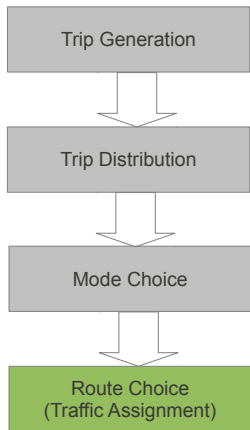
# How many travelers will use a new freeway?



# What level should tolls be set at?



Network models traditionally form the fourth step of the planning process.



This course will not focus on travel demand modeling; we assume that a “trip table” is known to us.

# **SYLLABUS AND ADMINISTRATIVE DETAILS**



Office hours: Wednesday/Friday 8:00–9:00 or by appointment; please let me know if you are coming

Course website: See [tinyurl.com/boyles392c](https://tinyurl.com/boyles392c) for assignments and schedule; submissions and grades on Canvas

Textbook: Public beta of *Transportation Network Analysis*, available on the course website.

If you are auditing, please send me your email address. I will add you to the Canvas site.

Category	Weight
Reading responses	5%
Assignments	30%
Exam	30%
Project	35%

+/- grading will be used.

## Reading responses

Most weeks in this course have an associated reading. Compose a short response (250–500 words) and email them to me at the start of the week.

Examples of things you can include:

- Questions about things in the reading which are unclear
- Commentary about related issues in your research or experience
- Critique of modeling assumptions made or suggestions of alternative assumptions and models
- Critique of notation, presentation format, and explanations; typos in the text
- Anything else which demonstrates that you have read the assigned sections and thought about them

Email me your response by **9 AM on Monday** of each week. Send them in **plain text** (no attachments or fancy formatting) with **392C reading response** in the subject line.

# Assignments

There will be two kinds of assignments in this course:

- 6 short **practice assignments** on basic concepts. You will submit these assignments online on Canvas.
- 5 longer **homework assignments** which are more complex and require synthesis of concepts and some programming.

The first homework includes a Python tutorial to cover what you need for this semester, and to familiarize you with the autograding script I will use. The remaining homeworks will ask you to implement some of the algorithms you learn in this course.

## Collaboration policy

- You may work on homework assignments individually, or collaborate with others **currently in the class**.
- You are **NOT** allowed to consult with those who took the course previously.
- Book problems must be written up and submitted individually.
- Python code may be submitted individually or with a partner (indicate partner in submission).
- Cite any external sources you use.
- (I have copies of all submissions from previous semesters and will run spot-checks.)

The exam will be near the end of the semester (November 26) and in-class. No final exam will be given.

The final project will include presentations during the last week of class (December 3 and 5), and a report due at the time of the scheduled final exam (Thursday, December 13, at noon). This project will be in groups on a topic of your choosing. More details will be given as the semester progresses.

## Policy on late work

Late work is generally not accepted, but if there are special circumstances, please let me know well in advance (minimum 48 hours).

# Miscellanea

- Consult catalog and departmental advisors for add/drop policy.
- Please coordinate with me and Services for Students with Disabilities if you have a disability requiring alternate accommodations.



# Prerequisites

- The course involves extensive use of vector and multivariable calculus. You should be familiar with dot products, partial derivatives, gradients, and the multivariable chain rule, and be generally comfortable working with vectors and matrices. (See §3.1 of the text for a brief review)
- Having some programming background (in any language) is helpful. You will need to use Python to complete the assignments in this course.