Bicycle and Pedestrian Transportation Planning

CRP 384-10 ● 3 units
Community & Regional Planning Program
The University of Texas at Austin School of Architecture

Spring ● Sutton Hall
Course website: http://canvas.utexas.edu/

Instructor: Gian-Claudia Sciara
Office: SUT 3.144*
*My office is a gun free zone.
Office Hours: Reserve a slot online: http://bit.ly/2b0PGHz
Email: sciara [at] utexas.edu

Note: The syllabus may change during the semester to reflect revised dates or assignments. Notice of updates will be sent via email. Always find the most current syllabus on Canvas.

Walking and bicycling are essential components of a sustainable transportation system. In response to growing concerns about personal mobility and safety, public health, air quality, community sustainability, and related issues, many government agencies are developing plans to improve pedestrian and bicycle transportation.

Pedestrian and bicycle transportation are influenced by micro-scale elements of the built environment (e.g. sidewalks, bicycle lanes, traffic speeds, and roadway crossings) and macro-scale characteristics (e.g. community pathway systems and regional land use patterns.) Walking and bicycling issues thus bridge the fields of urban planning and design and civil engineering.

This graduate-level course introduces students to essential information about current practices in the pedestrian and bicycle transportation field. It will cover historical and institutional frameworks, benefits and obstacles to pedestrian and bicycle planning, policy development, perceived and actual safety, facility design, network development, and practical methods of estimating demand and evaluating walking and bicycling conditions. Students will be challenged to evaluate the existing methods critically and develop ideas for improving pedestrian and bicycle planning practices. The course will focus mainly on practices in the United States, though it will include examples of innovative international strategies.

The course will include lectures and presentations, guest speakers, field observations, and several assignments. Most classes will include a presentation by the course instructor. References from the reading list will also be discussed in class. To encourage student mastery of course topics, hone presentation skills, and facilitate class discussions, students will serve individually or in teams as class “experts” on particular topics in specific classes. Guest speakers provide a practice-based perspective on the issues discussed in class.

Acknowledgements: This syllabus draws on and adapts course materials and ideas shared by Robert Schneider, Kari Watkins, the IBPI at Portland State, and the FHWA PBIC.
Course Objectives

- Understand role of bicycle and pedestrian modes in larger context of personal travel
- Gain insight into how key federal, state, and local policy can shape provision of bicycle and pedestrian facilities and programs
- Become familiar with the public actors & stakeholders involved in bicycle and pedestrian planning and the connections to broader transportation planning issues
- Learn about current practices for planning, project treatments, and interventions to improve and enhance bicycle and pedestrian travel
- Evaluate existing pedestrian and bicycle planning and design methods critically and develop ideas for improving practice and treatments in the local context

Useful Reference Texts


Course Requirements and Grading

1. Public meeting analysis (15%)
2. Data collection & analysis assignment (20%)
3. Expert presentations (20%)
4. Final project: Infrastructure / site analysis (35%)
5. Class attendance, participation, engagement (10%)

Final grades will be determined on the following basis. To ensure fairness, all numbers are absolute, and will not be rounded up or down at any stage. Thus a B- will be inclusive of all scores of 80.000 through 83.999. The University does not recognize the grade of A+.

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<thead>
<tr>
<th>Grade</th>
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<tr>
<td>A</td>
<td>94-100</td>
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<tr>
<td>A-</td>
<td>90-93</td>
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<tr>
<td>B</td>
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<td>B-</td>
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<td>B+</td>
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<td>C</td>
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<td>D</td>
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1. **Planning Meeting Analysis Memo**

Students will attend a local transportation meeting and submit a memo that provides an effective meeting summary and analysis. The meeting analysis will account for both the substance of the issues taken up and on the processes that students observe unfolding at the meeting.

2. **Data collection & analysis assignment**

Students familiarize themselves and the class with potential data sources describing bicycle and pedestrian travel, behavior, and characteristics. You will summarize and analyze pedestrian and/or bicycle data for a city, region, or geography of your choice, using the data to tell a story about cycling / walking / those who do it in a specific context, or about a specific aspect of cycling and walking.

3. **Topic Expert**

Each student will serve as the class expert for one of the topics covered in a specific class. Students will have an opportunity to sign up for specific topics and will consult with the instructor about how to prepare for their role. Students will prepare a PowerPoint presentation and supporting material synthesizing appropriate research or information and serve as class discussant on the topic.

4. **Site / Intersection/ Corridor Analysis**

Students will conducted this assignment in small groups and use a mix of planning, design, and engineering skills. The objective of the assignment is to recommend, illustrate, and justify a set of pedestrian and bicycle improvements for a specific intersection /corridor segment in the Austin region. Students will choose from a set of potential sites identified by the instructor.

5. **Class Engagement and Attendance**

Active engagement in class is an important component of the course, and students will earn up to 10 percent of their grade for it. Students are expected to attend regularly and arrive on time, read required readings before class, contribute meaningfully to class discussions, demonstrate engagement with required readings, and participate in homework and ungraded field assignments. Further, in order to promote a productive learning environment for all, please:

- Turn off or mute audible mobile devices for the duration of class.
- Refrain from accessing the internet or engaging in behaviors that detract from class learning.

**Important Course Dates:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Friday, Jan. 19</td>
<td>Official add/drop period ends</td>
<td>After this date, contact Robin Dusek for changes in registration.</td>
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<tr>
<td>Wed., Jan. 31</td>
<td>12th Class Day</td>
<td>Last day to add a course or drop with a refund.</td>
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<tr>
<td>Thursday, Feb. 6</td>
<td>Class field trip</td>
<td>Bicycle &amp; helmet needed for this class session.</td>
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<tr>
<td>Monday, Apr. 2</td>
<td>Last chance to change registration or grading basis</td>
<td>Last day a grad student may change registration in a class to or from the credit/no credit basis.</td>
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<tr>
<td>Friday, May 4</td>
<td>Last Class Day</td>
<td>Last day a grad student may, with required approvals, drop a class (Q/F drop).</td>
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<td>Thur.</td>
<td>2</td>
<td>Intro &amp; Pub Health Benefits of Ped &amp; Bicycle Transportation</td>
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<td>Tues.</td>
<td>3</td>
<td>Environmental Benefits of Ped &amp; Bicycle Transportation</td>
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<td>Thur.</td>
<td>4</td>
<td>Pedestrian and Bicycle Institutional Framework</td>
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<td>Tues.</td>
<td>5</td>
<td>Pedestrian and Bicycle Trends</td>
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<td>Thur.</td>
<td>6</td>
<td>Travel Behavior Theory &amp; Evidence on Walking and Bicycling</td>
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<tr>
<td>Tues.</td>
<td>7</td>
<td>Pedestrian Design Fundamentals; Walk Austin (confirmed)</td>
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<tr>
<td>Thur.</td>
<td>8</td>
<td>Pedestrian Design Fundamentals</td>
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<tr>
<td>Tues.</td>
<td>9</td>
<td>Bicycle Design Fundamentals</td>
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<tr>
<td>Thur.</td>
<td>10</td>
<td>Bicycle Design Fundamentals</td>
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<tr>
<td>Tues.</td>
<td>11</td>
<td>Bicycle &amp; Pedestrian Design Fundamentals, continued</td>
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<tr>
<td>Thur.</td>
<td>12</td>
<td>Class Facilities Tour (confirmed).</td>
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<tr>
<td>Tues.</td>
<td>13</td>
<td>Engineer’s Perspective</td>
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<tr>
<td>Thur.</td>
<td>14</td>
<td>Class field exercise: Pedestrian audit</td>
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<td>Tues.</td>
<td>15</td>
<td>Pedestrian Audit Results; Collection of Ped &amp; Bicycle Data</td>
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<tr>
<td>Thur.</td>
<td>16</td>
<td>Anatomy of Bicycle and Pedestrian Master Plans</td>
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<td>Tues.</td>
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<td>No Class. Spring Break.</td>
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<tr>
<td>Thur.</td>
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<td>No Class. Spring Break.</td>
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<tr>
<td>Tues.</td>
<td>17</td>
<td>Ped &amp; Bicycle Demand Estimation (Ass. 2 draft brief due)</td>
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<tr>
<td>Thur.</td>
<td>18</td>
<td>Pedestrian and Bicycle Data Sources (Ass. 2 Presentations)</td>
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<td>Tues.</td>
<td>19</td>
<td>Pedestrian and Bicycle Safety (Ass. 2 final brief)</td>
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<tr>
<td>Thur.</td>
<td>20</td>
<td>Ped &amp; Bicycle Safety/Tentative: Team field exploration</td>
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<tr>
<td>Tues.</td>
<td>21</td>
<td>Land Use, Connectivity, and Urban Design</td>
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<td>Thur.</td>
<td>22</td>
<td>Bikesharing</td>
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<td>Tues.</td>
<td>23</td>
<td>International Pedestrian and Bicycle Transportation</td>
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<tr>
<td>Thur.</td>
<td>24</td>
<td>Tentative: Field exploration</td>
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<td>Tues.</td>
<td>25</td>
<td>International Pedestrian and Bicycle Transportation</td>
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<tr>
<td>Thur.</td>
<td>26</td>
<td>Education, Enforcement, Encouragement</td>
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<td>Tues.</td>
<td>27</td>
<td>Public Participation and Coalition Building</td>
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<tr>
<td>Thur.</td>
<td>28</td>
<td>In-Class Presentations of Class Projects/Course Wrap-Up</td>
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<tr>
<td>Tues.</td>
<td>29</td>
<td>In-Class Presentations of Class Projects/Course Wrap-Up</td>
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<td>Thur.</td>
<td>30</td>
<td>LAST CLASS</td>
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Course and University Policies

Student Accommodations

Students with a documented disability may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities:
http://diversity.utexas.edu/disability/about/

I want to make this class inclusive, accessible and welcoming for all students. Please notify me as soon as possible if you require any accommodations, if you have trouble with class material not being accessible for you, or if physical space is difficult for you.

Expectations on Academic Honesty

The University of Texas Honor Code binds all of us in this class and obligates us to follow standards of academic integrity that are essential for a successful class.

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Ethical standards are also central to the codes of conduct that will bind us as practicing planners and related professionals: https://www.planning.org/ethics/ethicscode.htm

As students now and as practicing planners, policymakers, and engineers later you will frequently consult analyses, research, and ideas produced by others. It is expected and desirable that we use others’ findings to inform our own work for a given assignment or task. This means knowledge is being shared and applied. However, a bright line separates the appropriate use and acknowledgement of another’s work from plagiarism, the inappropriate presentation of another’s work or ideas as one’s own. With full text reports, articles, and presentations available on the internet, it is easy to borrow another’s words and ideas inappropriately, whether inadvertently or deliberately. Technology makes plagiarism easy to do and easy to detect.

Please familiarize yourself with The University Honor Code and its provisions. The following link is a place to start: http://deanofstudents.utexas.edu/conduct/academicintegrity.php It is the individual’s responsibility to know what “scholastic dishonesty” is and to take steps to avoid it.

If you are unsure of these rules or their application, please do not hesitate to contact me to discuss them—with no prejudice. The rules can be complicated when put into practice, and it is useful to consider them together.
UNIVERSITY RESOURCES FOR STUDENTS

Graduate school can be a challenging time, as you adjust to a new location and environment; face expectations for more advanced, independent, and original work; consider your future career path; and continue to meet your own personal and work commitments outside the classroom.

Mental Health Services. Taking care of your general well-being is an important step in being a successful graduate student. If something is getting in your way (e.g. stress, test anxiety, lack of motivation), the following options are available for help:

SOA CARE Counselor
The University's CARE Program places licensed mental health professionals within the colleges or schools they serve in order to provide better access to support for students who are struggling emotionally and/or academically. The CARE Counselor in the School of Architecture:

Abby Simpson, LCSW
Available by phone M-F 8-5p 512.471.3115 (Please *leave a message* if she is unavailable) BTL 114B -- cmhc.utexas.edu/CARE_simpson.html

For immediate support:
Visit/Call the Counseling and Mental Health Center (CMHC):
M-F 8-5p | SSB, 5th floor | 512-471-3515 | cmhc.utexas.edu
CMHC Crisis Line: 24/7 | 512.471.2255 | cmhc.utexas.edu/24hourcounseling.html

Services at UT Counseling and Mental Health Center (CMHC):
- Brief assessments and referral services - cmhc.utexas.edu/gettingstarted.html
- Mental health & wellness articles - cmhc.utexas.edu/commonconcerns.html
- MindBody Lab - cmhc.utexas.edu/mindbodylab.html
- Classes, workshops, & groups - cmhc.utexas.edu/groups.html
- Tips on self-care - cmhc.utexas.edu/selfcare.html

Other Helpful Offices at UT
- Student Emergency Services (SES) - deanofstudents.utexas.edu/emergency
- Services for Students with Disabilities (SSD) – diversity.utexas.edu/disability
- Office of the Student Ombuds - ombuds.utexas.edu/student

Academic Services. The University has many resources to support student learning and development in their work as graduate students:

- University Writing Services - Graduate Writing Services – (http://uwc.utexas.edu/grad/) (schedule online uwc.utexas.edu or call 512.471.6222 for an appointment for personal consultation)
- Architecture & Planning Library (http://www.lib.utexas.edu/apl/)
- University of Texas Libraries (http://www.lib.utexas.edu/)
- Information Technology @ UT (http://it.utexas.edu/)
- School of Architecture's Career Services (http://soa.utexas.edu/resources/career-services)
- Vick Center for Strategic Advising & Career Counseling (http://ugs.utexas.edu/vick/career)
Readings

We will cover an assortment of topics from the pedestrian and bicycle planning field in single and grouped sessions. The readings listed under each topic below are required. Readings are available on Canvas in the “Readings” folder. All students are expected to read required readings before class and to participate actively in the discussion. Supplemental “Recommended Readings” are also noted below.

Class 1  Introduction

- Law enforcement faces challenge as pedestrian deaths edge higher. [Link](http://www.mystatesman.com/news/traffic/law-enforcement-faces-challenge-pedestrian-deaths-edge-higher/buP3gGfPqiHlZmUTFjEg6K/)
- Austin considers lowering neighborhood speed limits. [Link](http://kxan.com/2016/11/30/austin-considers-lowering-neighborhood-speed-limits/)
- Advocates say bond funding for Bicycle Master Plan could diversify local biking community [Link](https://www.austinmonitor.com/stories/2016/06/advocates-say-bond-funding-bicycle-master-plan-diversify-local-biking-community/)
- Austin’s new ‘speed cushions’ spark outcry [Link](https://www.austinmonitor.com/stories/2018/01/austins-new-speed-cushions-spark-outcry/)
- Three Ways Austin Is Doubling the Rate It Builds Bike Routes [Link](https://usa.streetsblog.org/2017/11/22/three-ways-austin-is-doubling-the-rate-it-builds-bike-routes/)

Class 2  Public Health Benefits of Pedestrian & Bicycle Transportation


Class 3  Environmental Benefits of Pedestrian & Bicycle Transportation

- Joe Romm on Heroes and Fairy Tales. YouTube. [Link](https://www.youtube.com/watch?v=LUGL9cpQVu4) (5 minute video.)

Class 4  Pedestrian and Bicycle Institutional Framework

Class 5 Pedestrian and Bicycle Trends


Recommended

Class 6 Travel Behavior Theory


Recommended

Class 7 Pedestrian Design Fundamentals

GUEST SPEAKER: Angela Richter, Walk Austin


Recommended:

Class 8 Pedestrian Design Fundamentals

- Pedestrian and Bicycle Information Center. “Facility Design.” Web page, Available online: http://www.pedbikeinfo.org/planning/facilities.cfm , 2015. Read sections under (a) Pedestrian Facilities (all sections: Sidewalks and Walkways; Curb Ramps; Shared-Use Paths/Sidewalks; and Shared Streets) and (b) Crossings (select sections: Crosswalks; Curb Extensions; Crossing Islands; Overpasses/Underpasses; Advance Stop Lines/Yield Markings; Pedestrian Signals; RTOR Restrictions; Improved Right Turn Slip-Lane Design)
Class 9  Bicycle Design Fundamentals

- Pedestrian and Bicycle Information Center. “Facility Design.” Web page, Available online: http://www.pedbikeinfo.org/planning/facilities.cfm, 2015. Read sections under (a) Bicycle Facilities (all sections); (b) Crossings (select sections: Bicycle Signal Heads; Bicycle Detection)


Class 10 -11  Bicycle & Pedestrian Design Fundamentals, continued


Recommended:


Class 12  CLASS FACILITIES TOUR: Bicycling Field Trip with Mike Schofield

Active Transportation Planning and Design, City of Austin Transportation Department

- City of Austin, Bicycle Master Plan.


Class 13  Engineer's Perspective


- [optional] For those who want to consider the engineer's perspective further, this video from Portland's bicycle / traffic engineer Peter Koonce [can FF to minutes 38:00 to 52:00 for good examples] https://www.youtube.com/watch?v=jVLBXFN1GTY

Class 14  Field Exercise: Pedestrian Audit


- Clifton, K. J., Smith, A. D. L., & Rodriguez, D. A. Pedestrian Audit Scoresheet (Familiarize yourself with all form features / questions.)

Class 15  Bicycle Data Collection


**Recommended:**


Class 16  Anatomy & Analysis of a Pedestrian / Bicycle Master Plan


- One municipal-level bicycle/and or pedestrian master plan of your choosing. (See folder on Canvas or upload & read one that you have identified.)

**Required for class:**

Carefully review one of the bicycle or pedestrian plans included in the list provided on Canvas. Some of the plans are uploaded to Canvas, and others are available via URL. In most cases, reading the plan from cover to cover is not advised; some plans are over 100 or even 200 pages. Instead, familiarize yourself with the plan and its components. Which components are most/least important? Why? Read more closely those sections you think are more important.

In class we will discuss the plans and their various strengths and weaknesses. Your task is to review the plan thoughtfully and to take notes that will allow you to share your observations with the class.

When reviewing the plan and taking notes, consider the following. Planning research has shown that “good” or “high quality” plans can be more likely to influence local government decisions (Burby & Dalton, 1994). How would you assess the plan? Consider how well it presents existing conditions in the community (its “fact basis”); the effectiveness of its goals or statements of aspirations and values; its policies, or actions, to guide decisions; and its ability to effectively communicate key principles and ideas, as well as to energize, engage, and inspire community support.

Additional questions for discussion in class will include:

- Why did the agency develop the plan? (What motivated them to develop the plan?)
- What were the major elements of the plan?
- What in your view were the strongest parts of the plan? What stand to make the biggest difference? Why?
- What in your view were weaker part(s) of the plan, or components less likely to make a difference? Why?
**Class 17**  Pedestrian and Bicycle Demand Estimation


**Recommended:**


**Class 18**  Pedestrian and Bicycle Data Sources

- Class presentations for Assignment #2. No reading this session.

**Class 19**  Pedestrian and Bicycle Safety

- Buehler, Ralph, and John Pucher. "Trends in walking and cycling safety: recent evidence from high-income countries, with a focus on the United States and Germany." *American journal of public health* 0 (2017): e1-e7

**Class 20**  Pedestrian and Bicycle Safety


**Recommended:**


**Class 21**  Land Use, Connectivity & Urban Design


**Recommended**

Class 22  Bikesharing


Recommended


Class 23  International Pedestrian and Bicycle Transportation


Class 24  Tentative: Field Exploration

Class 25  International Pedestrian and Bicycle Transportation


Class 26  Education, Enforcement, Encouragement

- Max Marck, Smart Cycling: [https://vimeo.com/39910032](https://vimeo.com/39910032)

Class 27  Public Participation, Advocacy, and Coalition Building

Class 28 Class Presentations

Class 29 Class Presentations

Class 30 Final Class: Wrap Up