ENVS 196: Sustainable Transportation in Santa Cruz  
(Senior Seminar)  
Winter 2016, T/Th 11.40-3.05, ISB 455

Instructor  
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Office: ISB 459  
Office Hours: Mondays 11-12 & Thursdays 10-11, ISB 459.  
Sign up for an appointment here: https://goo.gl/X7vFOD

Cell: (831) XXX-XXXX  
*For use only on field visits or during fieldwork (in an emergency or if you get lost)*

Course Description

This course will consider how urban transportation projects can encourage alternatives to the private car, improve safety, and reduce air pollution and greenhouse gas emissions. We will examine new innovations in transit planning, parking policy and bicycle and pedestrian design, and then apply these concepts to Santa Cruz and the UCSC campus. We will work on team projects that collect field data and develop new designs for transit service or street design. We will work in close collaboration with city and/or campus decision makers to design real-world projects that can make our local transportation system more sustainable, equitable and efficient.

Course Goals

After completing this course, you should be able to:

- Understand some key policies and design principles that can improve urban transportation in a city, and make it more sustainable  
- Critically evaluate the merits of different approaches to designing streets, transit systems, parking management and urban development  
- Understand the opportunities and constraints that affect a city or university’s ability to improve transportation systems  
- Develop technical abilities in mapping, data collection and analysis, and/or professional report writing  
- Develop team-working and project management skills

Textbook

There is no textbook for this course. All required readings will be posted on Canvas.
Field Visits
Field visits are an integral component of the course. They will help you connect what you observe on the ground with the theories discussed in class, and help inform your own judgments about the theories and readings. We will have several (required) field visits to projects in Santa Cruz during class time, and an optional field trip to San Jose or San Francisco on a Friday or Saturday (date TBD).

Class Participation and Leadership
This is a small seminar, and your active participation is essential to making this course successful and enjoyable. This class is also a unique opportunity to help improve transportation in Santa Cruz. Neither the professor nor the city and campus staff that we’ll be working with have all the answers (if we did, we wouldn’t be running this class), and we are relying on you to bring your ideas, skills, experiences and energy.

For most of the classes, one student will be responsible for leading the discussion. (You can also pair up and lead two sessions if you prefer.) This entails:

- In advance of class, synthesizing discussion questions and comments posted by other students on Canvas
- Providing a 5-minute introduction to that day’s topic based on the readings
- Initiating and helping to facilitate the discussion

Sign up for a slot during the first week of class.

In addition, before each class, all students should post to Canvas 1-2 brief discussion questions and/or comments on the readings for that class. These are due at 5PM the day before (i.e. Monday at 5PM for a Tuesday class, or Wednesday at 5PM for a Thursday class). These posts might include a question that was sparked by one of the readings, a broad comment on or reaction to the readings, or an example that further illustrates a concept from the readings.

Course Schedule (subject to change)
We will meet on Tuesdays and Thursdays, 11.40-3.05pm. We will normally use the first hour and a half for the case study presentation and to discuss the substantive topic and readings, and the remainder of the time to work in teams on your projects. We will end early some days, but you must keep the entire 11.40-3.05 slot free (i.e., don’t schedule any sections or work commitments during that time).
<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
<th>Required Readings</th>
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| 1     | Sep 28 | Introduction
Transportation patterns and trends
Walking tour of central campus | Barber et al. 2017                                           |
| 2     | Oct 3  | Designing streets (i)
Introduction to Trello | Steuteville 2016
Sadik-Khan 2016, Ch. 1
Eckerson 2012 and 2015 (videos) |
| 3     | Oct 5  | Designing streets (ii)
The Existing Conditions report
Bike to work day! | Sadik-Khan 2016, Ch. 4
NACTO 2013
Eckerson 2015 and 2017 (videos)
Skim the existing conditions reports |
|       | Oct 8  | Open Streets in Santa Cruz!                                           |                                                       |
| 4     | Oct 10 | Promoting cycling                                                     | NACTO 2014
Handy et al. 2012
Brett 2017
Sadik-Khan 2016, Ch. 8 |
|       | Oct 12 | No class – fieldwork on projects                                      |                                                       |
|       | Oct 17 | No class – fieldwork on projects                                      |                                                       |
| 5     | Oct 19 | Field visit: Santa Cruz Metro Transit                                 | Metro 2013                                             |
| 6     | Oct 24 | Transit planning (i): service design                                  | Walker 2012 Ch 7, Ch 10
Amin 2016                                             |
| 7     | Oct 26 | Transit planning (ii): speeding up buses
The bus vs rail debate | Walker 2012 Ch 8
Jaffe 2015
Schmidt 2017                                         |
| 8     | Oct 31 | Transit-oriented development                                          | Loukaitou-Sideris 2013
Wang 2017
Chapple 2017
Schweitzer 2017                                     |
| 9     | Nov 2  | Field visit: Rail Trail and Delaware Addition                        |                                                       |
| 10    | Nov 7  | Parking (i): Affordable housing or affordable parking?                | Gabbe & Pierce 2017
Manville 2014
Jaffe 2015                                           |
| 11    | Nov 9  | Parking (ii): The management toolkit                                  | Jaffe 2014
Litman 2008
Rhodes 2009                                         |
| 12    | Nov 14 | Possible field visit: TBD                                             |                                                       |
| 13    | Nov 16 | Equity and environmental justice in transportation                    | Butler 2016
Walker 2017
Transform 2017                                       |
| 14    | Nov 21 | CEQA: friend or foe?
Level of Service reform | Hernandez 2015
Jaffe 2011 and 2014                                |
|       | Nov 23 | No class – Thanksgiving                                              |                                                       |
| 15    | Nov 28 | Possible field visit: TBD                                             |                                                       |
| 16    | Nov 30 | High Speed Rail or Hyped-erLoop                                       | Fallows 2014
Poon 2017                                             |
| 17    | Dec 5  | Autonomous vehicles and the future
Dry run of presentations                                             | Millard-Ball 2016
Milakis et al. 2017                                  |
| 18    | Dec 7  | Final presentations                                                  |                                                       |
|       |       | Final report due                                                      |                                                       |
Graded Assignments

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<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tbody>
<tr>
<td><strong>Team project</strong></td>
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<tr>
<td>Sampling and survey plan</td>
<td>5%</td>
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<tr>
<td>Existing conditions report</td>
<td>20%</td>
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<tr>
<td>Final report</td>
<td>10%</td>
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<tr>
<td>(draft report)</td>
<td></td>
</tr>
<tr>
<td>(final report)</td>
<td>25%</td>
</tr>
<tr>
<td>(presentation)</td>
<td>5%</td>
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<tr>
<td><strong>Individual work</strong></td>
<td></td>
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<tr>
<td>City case study</td>
<td>15%</td>
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<tr>
<td>Reflection on public meeting</td>
<td>10%</td>
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<tr>
<td>Class participation</td>
<td>10%</td>
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**Team Project**

Working in teams, you will provide analysis and recommendations regarding a sustainable transportation project in Santa Cruz. More detailed guidance on the format of each assignment will be distributed early in the quarter.

**Sampling and survey plan**

Due: October 10, before start of class

The sampling and survey plan sets out what data you will collect, and how you will collect and analyze it. It will be your work plan for the remainder of the quarter.

**Existing Conditions report**

Due: November 9, before start of class

The Existing Conditions report compiles your data collection and analysis. The format and precise contents will vary between teams, but it should allow the reader to understand the nature of the problem and the constraints and opportunities, and include text, photographs, and maps and charts of your data.

**Final report**

Draft due: November 30, before start of class
Final due: December 7, before start of class

The final report includes your existing conditions analysis (revised in response to comments), and your analysis and recommendations.

**Individual assignments**

**City Case Study**

Due: One week after your class presentation (sign up for a slot during Week 1 of class).

You will develop a case study of a sustainable transportation project or planning effort in another city. What are the specific practices, policies or projects that other places can learn from and emulate? What are the most important lessons learned, and what are the implications for planning in Santa Cruz? You will submit a written report and also present your case study in class. Potential case study locations and more detailed guidance on the format and topics to be covered in each case study will be distributed in Week 1.


**Reflection on Public Meeting**
Due: November 21, before start of class

You should attend a meeting of the City Council or Transportation and Public Works Commission, or a similar meeting. A list of potential meetings will be provided on Canvas. Submit a 2-page reflection paper. More details will be provided early in the quarter.

**Class Participation**

Your class participation grade will include attendance and active participation in class, and discussion leadership. Two absences will be allowed with no deduction, but repeated absences will reduce your participation grade. Your questions and comments on the readings, as posted on Canvas, will also contribute to your participation grade.

**Late Submission of Assignments**

Students can make a formal request to the professor for special consideration for an extension to an assignment due date. This request should be received at least 48 hours before the due date.

Otherwise, **ten percent** will be deducted for every 24-hour period an assignment is late. *Due at the start of class means 11.40am sharp, so an assignment handed in at noon will incur a 10% deduction.*

**Academic Integrity**

Students are expected to adhere to the UCSC policy on academic integrity - [http://www.ucsc.edu/academics/academic_integrity/](http://www.ucsc.edu/academics/academic_integrity/). All assignments should be written individually and be original works for this class. All academic integrity violations (e.g. plagiarism, cheating, multiple submissions, facilitating dishonesty) will be prosecuted if encountered. Please talk with Prof. Millard-Ball IN ADVANCE if you are unsure about citation styles or what may violate the academic integrity policy.

**Accessibility and Disabilities**

If you have any mobility or other limitations that may affect participation in field visits, please contact Prof. Millard-Ball before the quarter starts. This will help inform planning for transportation and field visit activities.

If you qualify for classroom accommodations because of a disability, please submit an Accommodation Authorization from the Disability Resource Center (DRC) to Prof. Millard-Ball **within the first two weeks of the quarter**. You may submit these outside of class (e.g., office hours) to ensure anonymity. Contact DRC at 831-459-2089 (voice), 831-459-4806 (TTY), or [http://drc.ucsc.edu](http://drc.ucsc.edu) for more information on the requirements or process.