

Course Number	CE 410/510
Title	Transportation and Health
Section	
CRN(s)	40504/40518
Credits	4
Prerequisite(s)	None
Days/Time	T/Th 1400-1550
Location	EB 315
Final Projects Due	Finals Week

Course Website	<a href="http://d2l.pdx.edu">http://d2l.pdx.edu</a>
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Office Hours	By appointment	
Mailbox Location	CEE Office, EB 200 Suite	

Required Text or Other Materials: No required text; Readings available on course website

**Catalog Course Description:**

This course will introduce the linkages between transportation investments, policy, and behaviors and public health outcomes. This emerging interdisciplinary look has received much attention of late with the interest in rising obesity rates and the potential for active transportation modes to introduce more physical activity into daily life. But there are aspects of transportation that have long been of interest to the health community, particularly in the area of safety, crash analysis and injury prevention. In addition, mobility and accessibility are crucial to a healthy lifestyle, effecting access to medical care, healthy foods and opportunities to participate in exercise and physical activity. Transportation plays a crucial role in emergency services (fire/police/ambulance), evacuation, and aid distribution in disaster relief. Finally, the contributions that transport sector makes to poor air quality in urban areas have an impact on exposure rates to toxins and are related to respiratory illness, such as asthma.

In each of these areas, there is often a disproportionate impact of the burdens of our transportation system on certain sectors of society, including minority and low income groups, the elderly, and the young. The seminar will focus on how we might better understand these relationships so that we can improve our health and well being.

**Course Objectives – Students must demonstrate the ability to:**

- Analyze a transportation or health problem from an interdisciplinary perspective, incorporating the theories, data and methods, and policies from the relevant disciplines.

- Assess academic and practical literature in health and transportation.
- Develop a project or term paper that is well written, synthesizes relevant literature, and incorporates technical data and/or policy analysis.
- Understand how transportation engineering practice impacts various aspects of the community it serves.

After completing the course, students should be able to:

- Explain key health concepts related to transportation.
- Understand the various ways that transportation systems impact our health and wellbeing.
- Understand the disparities in the transportation resources, behaviors and conditions and health outcomes across various population segments.
- Identify and describe various policies and interventions that can address and/or improve these health outcomes.
- Discuss how health impact assessment can be used as a planning and evaluation tool for transportation engineering, planning and policies.

### **Course Requirements:**

#### Class Participation (10%)

Students are expected to actively engage in the course. This includes regular attendance, asking questions, providing examples and commentary, and contributing to the intellectual environment of the classroom.

#### Memos (15% x 4)

Students will synthesize the concepts, theories and empirical research from class and develop their own perspectives, which will be conveyed in four short memos, three to five pages in length. The readings from the course are a valuable resource for these memos but students are encouraged to look beyond those readings and think creatively about how these relationships are theoretically and practically linked. All work and ideas that are not the student's own are to be properly referenced in footnotes or endnotes. Students will be allowed to re-submit one memo for a higher grade, which is due the last day of class or before.

#### Research Paper/Project (30%)

In this paper, you will explore a topic of your choosing in depth, using a wide range of scholarly literature. Students may choose to do empirical work, analyzing data or applying a methodological approach to transportation and health; or, they may choose to examine the literature, making original arguments based upon the work of others. More detailed information about the final paper requirements (format, length, topics) will be provided. Students will be required to give a brief presentation on their paper or project on the last day of class.

Those graduate students registered for CE 510 will have more substantial requirements for the final project/paper than those undergraduate students registered for CE 410. Graduate students are expected to have a more lengthy final paper, draw upon more sophisticated academic literature and (where applicable) use more sophisticated empirical analysis in those

papers/projects than undergraduate students. Topics and methods are vetted in advance and the expectations will be communicated in the final project guidelines.

Material submitted after the deadline will be penalized an 8% deduction in grade per day late.

The final grade will be assigned as follows:

90 to 100%	A
80 - 89	B
70-79	C
60-69	D
<60	F

### **Course Schedule (subject to change)**

<u>CE 410/510 Transportation &amp; Health Schedule</u>			
<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Readings</u>
<u>1</u>	<u>01/08/19</u>	<u>Introduction and course overview</u>	<u>1-2</u>
	<u>01/10/19</u>	<u>Foundations &amp; theories of health</u>	<u>3-6</u>
<u>2</u>	<u>1/15/2019</u>	<u>TRB - No class</u>	<u>7-8</u>
	<u>1/17/2019</u>	<u>TRB - No class</u>	<u>9-10</u>
<u>3</u>	<u>1/22/2019</u>	<u>Foundations &amp; theories of health</u>	
	<u>1/24/2019</u>	<u>Healthy Behaviors/Roger Gellar, PBOT - Active Transport</u>	<u>11-13</u>
<u>4</u>	<u>1/29/2019</u>	<u>Healthy Behaviors</u>	<u>14-16</u>
	<u>1/31/2019</u>	<u>Healthy Behaviors</u>	<u>17-18</u>
<u>5</u>	<u>2/5/2019</u>	<u>Healthy Behaviors</u>	<u>19</u>
	<u>2/7/2019</u>	<u>Unsafe/Unhealthy Conditions</u>	<u>20-22</u>
<u>6</u>	<u>2/12/2019</u>	<u>Unsafe/Unhealthy Conditions/Mellie Pullman - Sustainable Food Supply Chains</u>	<u>23-25</u>
	<u>2/14/2019</u>	<u>Unsafe/Unhealthy Conditions</u>	<u>26-29</u>
<u>7</u>	<u>2/19/2019</u>	<u>Unsafe/Unhealthy Conditions</u>	<u>30-32</u>
	<u>2/21/2019</u>	<u>Paper discussions</u>	<u>33-34</u>
<u>8</u>	<u>2/26/2019</u>	<u>Emergency Response, Evacuation &amp; Disaster Relief</u>	<u>35-36</u>
	<u>2/28/2019</u>	<u>Emergency Response, Evacuation &amp; Disaster Relief</u>	<u>37</u>
<u>9</u>	<u>3/5/2019</u>	<u>Integration into Engineering and Planning</u>	<u>38-40</u>
	<u>3/7/2019</u>	<u>Integration into Engineering and Planning</u>	<u>41-42</u>

<u>10</u>	<u>3/12/2019</u>	<u>Integration into Engineering and Planning</u>	
	<u>3/14/2019</u>	<u>Student presentations</u>	

The numbered Reading List is subject to change and is provided as a separate document.

# Expectations of the Student

## **Professionalism**

All assignments and class participation should be conducted in a professional manner. Attention to detail on class assignments and communication is important and is part of the learning experience and is included in part of student evaluation.

## **Attendance**

Attendance is strongly suggested. We will do activities in class that will help in your learning of the material that cannot be duplicated outside of the classroom. If you are going to miss a class, email the instructor(s) before with a reason stating why you will miss class. If you are on the border for a grade, attendance will be taken into consideration.

## **Computer and E-mail Accounts**

All students should activate their PSU email account (\_\_@pdx.edu) which will allow them to use D2L. I will periodically send reminders, hints, and other notices to the class via email. Include COURSE NUMBER (CE...) and topic of your message in the subject line (be as specific as possible) when sending an email. Use proper grammar, spell check, and proof read your message. You may be required to submit some of your assignments electronically.

D2L mail is a useful way for us to remain in contact and is the best way to reach me.

All engineering students should activate their engineering computer account which will allow them to use engineering computer labs and e-mail. You should activate it *before* the day you need it. If you encounter problems with this account, see the lab attendant, or e-mail: [support@cecs.pdx.edu](mailto:support@cecs.pdx.edu). Please note: the CEE Department regularly sends course announcements, job information, etc. to students' CECS accounts, so if you do not check it regularly, we recommend forwarding your CECS e-mail to whatever e-mail address you use.

## **Ethics and Professionalism**

As future professional engineers you should plan to take the Fundamentals of Engineering Exam and after the required experience, the Professional Engineering Exam (see the Oregon State Board of Examiners for Engineering and Land Surveying at: [www.oregon.gov/osbeels/pages/index.aspx](http://www.oregon.gov/osbeels/pages/index.aspx). You should also be familiar with the ASCE Code of Ethics <http://www.asce.org/Leadership-and-Management/Ethics/Code-of-Ethics/>, which includes the following:

***Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the engineering profession.***

This ethical behavior extends to any other profession or discipline, e.g. urban planning, business, mathematics, etc.

The PSU Student Conduct Code prohibits all forms of academic cheating, fraud, and dishonesty. Further details can be found in the PSU Bulletin. Allegations of academic dishonesty may be addressed by the instructor, and/or may be referred to the Office of Student Affairs for action. Acts of academic dishonesty may result a failing grade on the exam or assignment for which the dishonesty occurred, disciplinary probation, suspension or dismissal from the University. The students and the instructor will work together to establish optimal conditions for honorable academic work. Questions about academic honesty may be directed to the Office of The Dean of Student Life (<http://www.pdx.edu/dos/>).

# Resources

## **Student Groups and Professional Organizations**

Participation in student and professional groups can be a valuable part of your education experience. Membership gives students opportunities to get to know fellow students better, meet and network with professionals, collaborate in solving real engineering problems, learn about internship or job possibilities,

socialize and have fun. Your fellow students can be a great source of help and guidance in your academic endeavors. Consider becoming active with a student organization, such as the following:

- American Society of Civil Engineers (ASCE) Student Chapter : <http://www.asce.pdx.edu/>
- Students in Transportation Engineering and Planning (STEP) and Institute of Transportation Engineers (ITE) Student Chapter: <http://web.cecs.pdx.edu/~step/>
- Engineers Without Borders (EWB) Student Chapter: <http://www.ewb.pdx.edu>
- American Water Works Association (AWWA)
- Bridges to Prosperity (B2P): <http://www.pdx.edu/cee/bridges2prosperity-student-group>

Most professional organizations have monthly meetings and encourage student participation by providing discounts for lunch and dinner meetings. These meetings provide opportunities to network with potential future employers, learn about scholarships, and increasing your technical knowledge. Take a look at these organizations as a starting point:

- American Society of Civil Engineers (ASCE) Oregon Section: [www.asceor.org](http://www.asceor.org)
- Institute of Transportation Engineers (ITE) Oregon Section: [www.oregonite.org](http://www.oregonite.org)
- Society of Women Engineers (SWE) Columbia River Section - [www.swe-columbia-river.org](http://www.swe-columbia-river.org)
- Structural Engineers Association of Oregon (SEAO): [www.seao.org](http://www.seao.org)

### **Campus Help**

As a PSU student, you have numerous resources at your disposal. Please take advantage of them while you are here. A small sample is listed below:

- CEE Website (includes program info, job listings, etc.): [www.pdx.edu/cee](http://www.pdx.edu/cee)
- Career Center: <http://www.pdx.edu/careers/>
- Center for Student Health & Counseling: <http://www.pdx.edu/shac/>
- The Writing Center: <http://www.pdx.edu/professional-development/>
- PSU Disability Resource Center: 116 Smith Memorial Union ((503) 725-4150)

Note: The PSU Disability Resource Center is available to help students with academic accommodations. If you are a student who has need for test-taking, note-taking or other assistance, please visit the DRC and notify the instructor at the beginning of the term.

### **Campus Safety**

The University considers student safety paramount. The Campus Public Safety Office is open 24 hours a day to assist with personal safety, crime prevention and security escort services. Call 503-725-4407 for more information. For Campus emergencies call 503-725-4404.

### **Writing Resources**

As this course requires a fair amount of writing, I encourage you all to visit the Portland State University Writing Center. They have resources, offer seminars, and can meet with you individually to help you hone one of the most important of your communication skills – the ability to convey technical information, provide assessments of analysis and support arguments through writing. <http://www.writingcenter.pdx.edu/>

## **Final Notes**

- The syllabus is subject to change at the discretion of the instructor as course or other circumstances requires.
- Students with documented disabilities are encouraged to discuss with me arrangements that will enhance their learning in this class.
- Please feel free to discuss with me problems/concerns with your other classes. Students with any kind of problem should contact the instructor as soon as possible.