

Course Number	410 (Undergraduate) 510 (Graduate)
Title	Design and Operation of Bicycle and Pedestrian Facilities
Section	012
CRN(s)	44394 (Undergraduate) 44235 (Graduate)
Credits	3
Prerequisite(s)	CE351 or consent of instructor
Days/Time	Tuesdays, 12:00 PM to 2:50 PM
Location	EB 315 (ITS Lab)
Final Exam Day/Time	Thursday, March 20, 2014, 10:15 AM to 12:05 PM, EB 315
Course Website	On D2L
Instructor	Chris Monsere, Ph.D., P.E.
Office	EB301B
Phone	503-725-9746
E-mail	monsere@pdx.edu
Office Hours	Mondays 11-noon or by appointment
Mailbox Location	CEE 200

Required Text or Other Materials:

See separate reading list

Catalog Course Description

Design and operational concepts in the engineering design of bicycle and pedestrian facilities in on-road and shared path locations. Specific topics include basic geometric design, intersection and signalization considerations, and amenities supporting non-motorized modes.

Course Statement

Bicycling and walking are vital modes in urban transportation systems and address a public health need for physical activity. Design of non-motorized facilities in predominantly auto-oriented US cities requires consideration of numerous factors relating to safety, accessibility, connectivity, and ease of use. Appropriately selected amenities and technologies can further support the inclusion of bicycle and pedestrian facilities in the greater transportation network.

Course Objectives – Students must demonstrate the ability to:

1. Explain key concepts in non-motorized transportation facility design and operations.
2. Understand issues facing non-motorized transportation system design.
3. Describe and be able to identify key design features in non-motorized on-road and shared path facilities.
4. Evaluate the design effectiveness of non-motorized transportation facilities.
5. Discuss how non-motorized modes can be addressed in transportation system design.

Course Evaluation

The course grade will be determined with the following weight for class assignments for both undergraduate and Graduate Students:

Class Participation:	10%
Homework and labs:	25%
Small class design project:	20%
Small research paper	15%
Final exam:	30%

This course is open to both graduate and undergraduate students, and as such, there will be different expectations for each group. *Graduate students are held to higher standards when grading and may be required to do more work on homework assignments and exams.*

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 it will be included in part of student evaluation.

Ethics

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.osbeels.org). You should also be familiar with the ASCE Code of Ethics (www.asce.org/inside/codeofethics.cfm), 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.

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. Questions about academic honesty may be directed to the Office of Student Affairs (www.ess.pdx.edu/osa/).

D2L

Check the class site regularly for updates, posting, and lecture notes including due dates for homework assignments.

Late Work

The due date for each assignment is clearly indicated and the work must be turned in at the start of class unless indicated otherwise. Late assignments will be penalized between 5% and 10% of the total points (decided on case-by-case basis). There will be no credit if an assignment has already been returned graded to the class.

Incomplete

A grade of incomplete "I" is granted by the instructor *only* with prior approval and consent. Criteria are outlined in the PSU Bulletin.

E-mail

Email is the best way to reach me. I ask that you include CE454 and topic of your message in the subject line (be as specific as possible) when sending me an email. Try to use other means to answer your question before emailing me. Give me enough detail to answer your question or I might not have the time to reply. **Please note that the CEE Department requires communication by the PSU email (@pdx.edu or @cecs.pdx.edu).** If you send me email from other than a PSU account, you run the risk of it being captured by the SPAM filter or it being deleted.

Description of Assignments

Class Participation (5% of final grade)

This class will be very interactive. For this reason, it is important that you come to class prepared to be involved and engaged. 5% of your final grade will be based on your classroom engagement (including occasional short quizzes).

Homework and Labs (25% of final grade)

There will be approximately 4 homework assignments and 1-2 lab assignments (involving field work or trips during class time). Homework will be assigned during the class session and available on the course D2L site. Your name, homework assignment number, and date should appear on the header of each page. Please staple multi-page assignments.

Mini Class Design Project (20% of final grade)

There will be a class project in which you will work in 2-person teams. We will get intersections or locations that surrounding agencies are interested in designing/investigating. The grade you receive will be based on the quality of your team's final design and in-class presentation of your findings.

Small Research Paper (15% of final grade)

As part of the course, each student will select a topic area from the course outline and produce a short 2-3 page write up suitable for incorporation in future class notes. References and figures will be included and properly sourced. More details will follow.

Final Exam (30% of final grade)

In this class, there will be one final exam. The final exam will take place per the university finals schedule and will be comprehensive, on material covered throughout the duration of the class.

Course Schedule (Tentative)

#	D	Date	Topic
1	T	7-Jan	INTRODUCTION AND OVERVIEW
2	T	14-Jan	NO CLASS - TRB
3	T	21-Jan	SAFETY AND PLANNING
4	T	28-Jan	ANALYSIS OF FACILITY PERFORMANCE
5	T	4-Feb	DESIGN CHARACTERISTICS FOR BICYCLING
6	T	11-Feb	BICYCLE FACILITY DESIGN AND OPERATION
7	T	18-Feb	BICYCLE FACILITY DESIGN AND OPERATION (2)
8	T	25-Feb	DESIGN CHARACTERISTICS OF PEDESTRIANS
9	T	4-Mar	PEDESTRIAN FACILITY DESIGN AND OPERATION
10	T	11-Mar	SHARED USE PATH DESIGN
21	R	20-Mar	FINAL EXAM

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 Student Group (ASCE): <http://www.asce.pdx.edu>
- Students in Transportation Engineering And Planning (STEP): <http://www.step.groups.pdx.edu/>
- Engineers Without Borders <http://www.ewb.pdx.edu/>
- Student Water Resources Group <http://www.swrg.groups.pdx.edu/>
- Chi Epsilon Civil Engineering Honor Society <http://web.cecs.pdx.edu/~cee/honor/>
- Tau Beta Pi - The Engineering Honor Society /

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
- Institute of Transportation Engineers (ITE) Oregon Section: www.oregonite.org
- Society of Women Engineers (SWE) Columbia River Section - www.swe-columbia-river.org
- Structural Engineers Association of Oregon (SEAO): www.seao.org
- Women's Transportation Seminar, Portland Section: wtsinternational.org

Research and Learning Opportunities

Transportation is a growing and exciting research area at Portland State University. I invite you to review the research in the Intelligent Transportation Systems Laboratory (www.its.pdx.edu/). Also, every Friday during the semester a Transportation Seminar is presented. All are welcome. The schedule is available at <http://transportation.research.pdx.edu/content/friday-seminars-0>.

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.): <http://www.cee.pdx.edu/>
- Career Center: www.career.pdx.edu/
- Center for Student Health & Counseling: www.shac.pdx.edu/
- The Writing Center: www.writingcenter.pdx.edu/
- 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.

Library and Literature Research

Not everything can be found with Google. You will often need to use real library search tools and access real books and articles contained in refereed/archival journals. Be sure to make use of the Vikat library catalog. Go to the PSU library home page at www.lib.pdx.edu/.

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.

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.