Active Transportation: Bicycling, transit and walking
ECIV 492

Instructors
Natalie Villwock-Witte (primary) natalie.villwock-witte@coe.montana.edu 505-340-3570
Rebecca Gleason rebecca.gleason@coe.montana.edu 406-994-6541
Jenni West jenni.west@coe.montana.edu 406-994-7368

Time and Location: May 5 – May 21, 2014; Bozeman, Montana; the Netherlands; and Germany


Prerequisite: 2.5 GPA, Junior standing in major program of study by May 2014, Instructor’s Permission (primary) via interview process

Course Description: Increasing dependence on automobiles has led to traffic congestion and contributes to physical inactivity, poor health, and environmental problems. This course introduces bicycle, pedestrian and transit travel modes as complementary to private automobile transportation, to reduce dependence on automobiles. This cross-disciplinary class is designed for future engineers, urban planners, health advocates, policy makers and others interested in transportation. Topics include land use/transportation relationships, bicycle and pedestrian facility design guides, utilitarian and recreation transportation, bicycle safety culture, bikesharing systems and transportation policy. Students will travel to the Netherlands and Germany to experience travel by train, bus, bicycle and foot. Students will learn about why these countries have significantly higher rates of bicycling, transit and walking than the United States.

Learning Outcomes: After successfully completing this course, students will be able to:
- Describe the influence of planning, infrastructure, policy, and culture on active transportation in The Netherlands, Germany, and the United States
- Compare how differences in the built environment, policy, and culture effect active transportation modes in The Netherlands, Germany and the United States
- Appreciate the cultures and languages of The Netherlands and Germany
- Recognize and explain the legitimacy of active transportation modes in creating balanced transportation systems.

Required text:

Other resources of interest:

**Grading:** Your final course grade will be determined by your participation in the course (30%), daily assignments such as blogs/journals (20%) and your final project report (50%).

**Final Project Report:** Due June 11 (summer session ends June 20). Write a research report on a transportation topic related to this class that you are interested in. Confirm and obtain approval for your topic with instructor by Monday, May 15th, 2014. You will research your topic using all resources available to you. This must include books and academic journals and may include newspaper/magazine articles, web pages (note Wikipedia is not an acceptable source) and interviews. Consider how your trip photos may be useful for demonstrating concepts in this report. Your report will contain:

1. Title page
2. Summary or Abstract
3. Table of Contents
4. Introduction
5. Main Text (should include statistics and graphs, tables or charts)
6. Conclusions
7. Recommendations (if appropriate for topic)
8. Acknowledgements
9. References (APA format)
10. Appendices

**Report Format:** The length of your report will correspond to your specific topic; however, it should be at least 10 pages in length and no longer than 20 pages (double spaced, 12 point font, 1” margins).

**Tentative Itinerary:**

12/16/2013
<table>
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<tr>
<th>Day</th>
<th>Day's Activities</th>
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| 1 (Mon May 5) | Lecture 1: Planning for Bicyclists and Pedestrians, Walking tour  
|            | Lecture 2: Bicycle and Pedestrian Policy (Melinda Barnes- Bike Walk Montana),  
|            | Language/Culture                                                                  |
| 2 (Tues May 6) | Lecture 3: The 5 Es, Walking tour  
|            | Lecture 4: Bike safety culture (Taylor Lonsdale), Bike safety training-outdoors,  
|            | Language/Culture                                                                  |
| 3 (Wed May 7) | Lecture 5: NACTO bike guides (Joe Gilpin-Alta Planning and Design)  
|            | Bike safety training and tour (Taylor Lonsdale), Language/Culture  
|            | Lecture 6: Bozeman Area Bicycle Advisory Board meeting                            |
| 4 (Thur May 8) | Lecture 7: Bicycle and Pedestrian Facility Design  
|            | Lecture 8: U.S. Bicycle Route System (Ginny Sullivan – Adventure Cycling  
|            | Association )                                                                     |
| 5 (Fri May 9) | Leave for Schiphol; The Netherlands                                               |
| 6 (Sat May 10) | Arrive in Schiphol; travel to Utrecht; pick up bikes, settle in                 |
| 7 (Sun May 11) | Utrecht  
|            | Lecture 9: Rules of bike travel in Netherlands  
|            | Lecture 10: Components of Dutch bicycling infrastructure  
|            | Aim for trip to Leiden/ the Keukenhof tulip fields if time allows                |
| 8 (Mon May 12) | Utrecht; Travel to Kasteel de Haar via bicycle, using LF Route (bike rental)  
|            | Lecture 11: Netherlands bike route system  
|            | Lecture 12: Pedestrian Wayfinding features and policies                           |
| 9 (Tues May 13) | Utrecht  
|            | Nederlandse Spoorwegen (NS) train system  
|            | Tour of Dutch Railway’s Utrecht Centraal  
|            | Lecture 13: Topics tied into the tour include: OV Fiets Program, new bicycle  
|            | parking facility (will be largest in Europe)                                     |
| 10 (Wed May 14) | Utrecht; Day trip to Delft. Use OV Fiets bike share system.  
|            | Information Exchange with Delft University of Technology  
|            | Cultural Tour: Royal Delft  
|            | Lecture 14: TBD  
|            | Lecture 15: Good Practices to Encourage Bicycling & Pedestrians on Federal  
|            | Lands                                                                           |
| 11 (Thur.May 15) | Utrecht; Day trip to National Park De Hoge Veluwe; use Park bike share  
|            | Lecture 16: Exploring Bicycle Options for Federal Lands: Bike Sharing, Rentals  
|            | and Employee Fleets                                                              |
| 12 (Fri. May 16) | Utrecht; Utrecht University  
|            | Lecture 13: Guide to Promoting the Use of Bicycles on Federal Lands  
|            | Lecture 14: Multimodal Trips in the Netherlands: Microlevel Individual Attributes  
|            | and Residential Context                                                          |
|            | Lecture 15: Evaluation of an Intelligent Transportation System for Rocky  
|            | Mountain National Park and Estes Park                                            |
| 13 (Sat.May 17) | Travel to Freiburg, Germany (7 hrs) students discuss and develop paper topic  
|            | ideas                                                                            |
| 14 (Sun May 18) | Freiburg: orientation, walking tour                                              |
**Lecture 18: Bicycling Infrastructure for Mass Cycling: A Transatlantic Comparison and Cycling Safety**

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<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>15 (Mon May 19)</td>
<td>Freiburg: Bicycle tour of Freiburg</td>
<td>Lecture 19: Bicycling in Small Cities/Advantages</td>
</tr>
<tr>
<td>16 (Tues. May 20)</td>
<td>Freiburg: Lecture 20: Understanding policies/ creating change</td>
<td>Last day of class</td>
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<tr>
<td>17 (Wed. May 21)</td>
<td>Students Return Home or Continue Traveling on your own</td>
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**Detailed Itinerary**

**Monday May 5, 2014**

8:30-9:00 - introductions, course overview

9:00-11:00 Lecture 1: Planning for Bicyclists and Pedestrians (1 hour lecture, ½-1 hour student activity)

- Motivations to plan for pedestrians and bicyclists
- The relationship between land use and transportation
- Interaction between pedestrian and bike planning and other planning processes

Student activity: Break into small groups, each group presents one concept from lecture to class.

11:00 – 12:00 Walking tour. Parking lot (point out bike parking, challenges in getting covered parking, separated paved path, gravel path north of bldg, RRFB pedestrian signal at 7th/Kagy, Kagy/Willson intersection, Sola development – urban form, Streamline bus stop).

12:00- 1:00 lunch break Sola Café or brown bag

1:00-2:30 Lecture 2- Transportation Policy –U.S. and Montana (1 hour lecture, ½ hour student activity)

Speaker: Melinda Barnes- Executive Director Bike Walk Montana

- Transportation Bill
- Montana State Policies related to bicycle and pedestrian safety
- Bozeman Policies (mandatory sidepath law, impact fees, development process/sidewalk gaps)

Student activity – Break into small groups, each group presents one concept from lecture to class. (1/2 hour)

2:45- 4:30 Language/Culture Lecture and activity

Homework – find recent news or journal article on topic from class. Present to class on Tuesday

**Tuesday May 6, 2014**

8:30 – 9:30 Student presentations/ class discussion. Informal 2-3 min presentation on what you learned.
9:30-11:00 Lecture 3: The 5 Es (Engineering, Education, Enforcement, Encouragement, Evaluation) (1 hour lecture, ½ hour student activity)

- Define the five Es, describe local examples,
- Review City of Bozeman’s LAB Bicycle Friendly Community Recommendations.

Student activity: Break into small groups, identify specific activities for Bozeman to achieve Gold bike friendly level, brief presentation to class. (1/2 hour)

11:00-12:00 lunch break

12:00-1:00 MSU campus walking tour -discuss bike/pedestrian issues on campus – 5-Es, end of trip facilities, short and long term bike parking, parking policies/practices, bike sharing/rental programs (recreational versus utilitarian). Perspectives from MSU student bike coordinator, facilities and planning staff (Petra Davis, Candace Mastel and/or EJ Hook).

1:00-3:30 Lecture 4 - Bike safety/culture- Taylor Lonsdale – Cycling Savvy concepts –communicating with drivers, how to bicycle safely with traffic.

3:30-5:30 – on-bike safety training (rope off part of parking lot) Taylor Lonsdale.

**Wednesday May 7, 2014**

8:30 – 10:00 Lecture 5: NACTO Urban Bikeway Design Guide – Joe Gilpin-Alta Planning and Design

Student activity: Small group session, TBD. (1/2 hour)

10:00-2:00 – Bike safety tour (Taylor Lonsdale). Practice cycling savvy safety techniques in Bozeman and point out bike/pedestrian infrastructure (5. 8th, sharrows, intersections, roundabout, sidewalk gaps...) (lunch break during tour)

2:30-4:00 Language/Culture

4:00-4:15 Lecture 6: Bozeman Area Bicycle Advisory Board structure and purpose (2.25 hours total – including evening meeting)

- local government/advisory board structure, purpose

6:00 – 8:00 pm Attend Bozeman Area Bicycle Advisory Board meeting

**Thursday May 8, 2014**

8:30 – 9:30 Follow up discussion on previous day activities/bike board meeting. Brief presentations from students on what was learned.

9:30 – 11:00 Lecture 7: Bicycle and Pedestrian Facility Design (1 hour lecture, ½ hour student activity)

Designing streets for all users

- Street hierarchy/ priorities (pedestrians, bicyclists, transit, auto)
• Roadway segments: Intersections, Midblock crossings, Retrofitting streets
• Bozeman’s Complete Streets Policy

Student activity, TBD, assess what was learned (1/2 hour)

11:30-12:30 lunch

12:30 – 1:00 Highway Wilding Video –(22 minutes)

1:00-2:00 U.S. Bicycle Route System (Ginny Sullivan – Adventure Cycling Association ) 2:00- 2:30 Student activity/discussion – TBD

2:30-4:30 – Language/Culture, Dutch Traffic Rules

**Friday May 9 and Saturday May 10, 2014**

Travel to the Netherlands, reading and short writing assignment

Pick up bicycle rentals. Settle into Utrecht.

**Sunday May 11, 2014**

Lecture 9: Rules of bike travel in the Netherlands

Lecture 10: Components of Dutch bicycle infrastructure (use the CROW “Design manual for bicycle traffic” as a reference)

**Monday May 12, 2014**

Lecture 11 – Netherlands bicycle route systems – junction system and LF Routes

Travel by bicycle from lodging to a castle (Kasteel de Haar) using the LF (long distance) route. Students will experience travel via bicycle from town to town using ANWB maps and learn how junction routes and LF routes interact. Along the route, students will experience several different types of facilities. Students will be asked to reflect on their perceived level of safety and to consider how the facilities have commonalities and differences with U.S. infrastructure. A group tour, in English of De Haar Castle will be followed by a group lunch.

Lecture 12 - Pedestrian Wayfinding features and policies (i.e. charging for cars, separate entrances for vehicles and bicycles) encourage alternative transportation. (Note: if the weather is poor, we can use transit as an alternative.)

**Tuesday May 13, 2014**

Lecture 13 - European Cyclists’ Federation guest speaker (ties into previous day’s excursion). Either an information exchange with Universiteit Utrecht or the bicycle coordinator for the City of Utrecht. Final topic still pending correspondence.
**Wednesday May 14, 2014**

Travel to Delft. Make use of OV Fiets shared bicycles. Explain how the integration of bicycles with the Dutch Railways encourages bicycling. Allows comparison of Netherlands cities and level of bicycle use. Tour of Royal Delft (cultural).

Lecture 14: TBD

Lecture 15: Good Practices to Encourage Bicycling & Pedestrians on Federal Lands

**Thursday May 15, 2014**

Lecture 16 - Bikesharing across the Globe (City Cycling, Chpt 9 and Exploring Bicycle Options for Federal Lands; Bike Sharing, Rentals and Employee Fleets.)

Day trip to National Park De Hoge Veluwe. This trip will involve use of the train and the bike share system at the National Park. Several topics will be discussed including the connectivity of the surrounding cities to the National Park and how this compares to U.S. examples (Acadia, ROMO, etc.). Kinderdijk will be used as an example.

**Friday May 16, 2014**

Daytrip to Houten- 2008 Dutch Biking City of the Year

Lecture 17 – Public Transportation –urban versus small urban and rural communities

Behind the scenes tour of NS (train system).

**Saturday May 17, 2014**

Travel to Friburg, Germany by train (7 hours). Discuss final paper topics.

**Sunday May 18, 2014**

Lecture 18 - Bicycling Infrastructure for Mass Cycling: A Transatlantic Comparison, Cycling Safety and (City Cycling Chpts 6, 7)

Walking or biking tour Friburg

**Monday May 19, 2014**

Lecture 20 – German bicycle/pedestrian rules/design guidance

Lecture 21 - Bicycling in Small Cities (City Cycling Chpt 12)

City walking or biking tour
**Tuesday May 20, 2014**

Lecture 22 – Understanding Policies, creating change in Frieburg

Tour TBD, Last day of class

**Wednesday May 21, 2014**

Students can return home or continue traveling