TRC 312 Critical Issues for Transportation in the 21st Century  
Fall 2012 Course Syllabus (*updated 28 Aug 2012*)

Instructor  
Dr. Brian H. Y. Lee  
Email: bhylee@uvm.edu  
Primary Office: Farrell Hall 114 (except for office hours, see below)

Class Meetings
Tue & Thu 4-5:15pm  
Farrell Hall Decision Theater

Office Hours
Tue & Thu 10-11am, Votey Hall 213E;  
Wed 3-4pm, Farrell Hall 114; and  
By appointment via email (times/location to be determined)

Catalog Data
TRC 312A, CRN 92115  
*Cross-listings:*
CDAE 395C, CRN 93886  
NR 385D, CRN 92116  
PA 395B, CRN 94262

Course Title
Critical Issues for Transportation in the 21st Century  
Prerequisites
Graduate Level Standing Only

Credit
3.0 semester hours

Course Description
The local, regional and global transportation systems are vital to community, the  
environment and economic development. Transportation policies impact the  
environment, energy, culture, equitable mobility between regions and groups, as well  
as overall quality of life. Critical transportation issues and problems in the 21st  
century will require interdisciplinary teams to design innovative solutions. The  
objective of this course is to develop an understanding of the critical issues in  
transportation, how these issues vary by perspective, and how to assess which  
solutions best answer individual problems. Students will also increase skills in  
research and academic writing.

Communication
Outside of scheduled meeting times and office hours, email is the official form of  
communication. Students are expected to check their UVM email accounts at least  
one every second day and are encouraged to email with suggestions, comments or  
questions at any time. Please indicate if it would NOT be alright with you if the reply  
was forwarded to everyone.

In addition, UVM BlackBoard will be used extensively for general announcements,  
distribution of course materials, submission of assignments, and posting of grades.
Course Components

A. Seminars
Seminars led by the instructor and guest speakers will include presentation of background information, description of current transportation challenges, solutions mechanisms and class discussions. Attendance and participation in discussions is mandatory and will be considered in assigning the final grade.

B. Readings
Required readings are included on the attached schedule and will be posted on BlackBoard in most cases. Students are required to complete these readings and use them as a source for questions of speakers, to inform class discussion and in their written materials. Student reading will be evaluated through class discussion and in-class writing assignments. Students in turn will be expected to summarize and lead discussion on a reading.

C. Group Project
Students in this class will be assigned to small interdisciplinary teams of 2 or 3. Each team will investigate the critical transportation issues for a transportation stakeholder group, conduct a literature review, collect and analyze data and recommend solutions. The team will present their work to the class and summarize findings in an end of the semester report.
The material presented by the team should be research based (including literature review, community-based research or data analysis as proposed by the students and approved by the instructor). All students in the team must participate.

The overall objective of these projects and the associated team research is to document the stakeholder group's main transportation issues as well as to propose solutions to resolve the problems. An important component of the project will be assessing how the critical issues of a group are measured, and also how the issues differ between the literature and the group's own assessment. Because the teams of students (and class focus) are multi-disciplinary, students can discuss and present the problems and solutions from different perspectives. A more detailed description of the expectations will be provided as well as a list of stakeholders.

D. Short Papers
Over the course of the semester, students will be assigned a total of four short papers. Papers should be 2 pages single-spaced (see Guidelines for Written Work below) and drawn from the readings, class discussions, the academic literature and the student's own research. Students may submit a re-write of the first paper but not the later papers. Footnotes, bibliography, figures or tables may be attached to the paper if necessary. Peer grading will be undertaken so 3 copies of each paper should be submitted. Both substance and style will be graded.

E. Exams
There will be one "take home" mid-term exam in this class. The exam will consist of short answer questions, short essays and some basic data work. Material covered in the readings, class lectures and by guest speakers may be included.

F. Community Activities
Students must attend and report on one community transportation activity. This could be a public meeting or hearing. A list of possible events will be provided but students can also find their own. A short memo summarizing the activity as well as the differences of opinion regarding the "critical issue" at the meeting may be handed in at any time by 1 December 2012.

G. Questions for Guest Speakers
In advance of guest speakers in this class, students will be required to submit potential questions for the guests. Questions should be carefully and critically constructed. Note that not all students may be able to ask their question due to time constraints.

H. Grading
1) Short papers 4 @6% each = 24%
2) Interactions with guests 6%
3) Mid-term take home exam 20%
4) Team project 40% total
   - Proposal 5%
   - Literature review 5%
   - Data summary 5%
   - Presentation 5%
   - Final report 20%
5) Class participation 10%

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

There will be no opportunities for extra credits.
Other Information

Guidelines for Written Work
All written work should be typed and printed out on the clearest settings. Do not hand in work printed at the draft setting or hand-written. Single-space your papers (12 or 11-pt) and include 1-inch margins for comments. Number your pages with your name at the top of each page and staple all pages together. Consider the visual presentation of your work, check for computer errors and typos. An attractively presented paper is to your benefit.

Use your own words. Please do not take lengthy quotes from the literature, instead present your thoughts in your own words. Develop your arguments and positions that are supported by the data and work of others. But always give credit when you use ideas from other sources. Any consistent referencing style is acceptable. Printing on both sides of the paper is fine as is using recycled paper as long as you cross out the side you do not want me or your peer reviewers to read. No title pages.

Late Work
You are expected to turn in all work on-time (i.e., the day it is due in class). If you need an extension due to illness or family emergency, please speak with me personally and well in advance of the due date or class time.

Attendance
All students are expected to attend class promptly and regularly. If one is unable to attend class, then please contact me by email. I expect everyone to make their best efforts to attend every class, both for your own personal learning, and to contribute to the community of learners in the group. In addition, class participation is a portion of your grade.

Academic Integrity

In particular, academic standards at UVM about plagiarism are clear: “All ideas, arguments, and phrases, submitted without attribution to other sources, must be the creative product of the student. Thus, all text passages taken from the works of other authors must be properly cited. The same applies to paraphrased text, opinions, data, examples, illustrations, and all other creative work. Violations of this standard constitute plagiarism.” Please be careful with attributions and copying, especially when using web pages. Plagiarism at UVM is grounds for academic suspension.

ACCESS
If you have a formal accommodation plan developed in conjunction with the UVM ACCESS Office or would like to discuss the supports that you need in order to learn well in this class, please contact me as soon as possible at the start of the semester.

Adaptations and instructional supports are available through consultation with me and the ACCESS Office http://www.uvm.edu/~access/. Students are encouraged to contact ACCESS for guidance at 802-656-7753 or access@uvm.edu.
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<thead>
<tr>
<th>WK</th>
<th>Day</th>
<th>Topic</th>
<th>Assignment or Activity</th>
<th>Readings (* &amp; ** indicate readings to be led by discussant)</th>
<th>Discussant</th>
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<tbody>
<tr>
<td>1</td>
<td>28-Aug</td>
<td>Introduction, courses logistics, etc.</td>
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<td><strong>TRB Critical Issues in Transportation 2009 Update</strong> <em>AASHTO What's Ahead for Transportation in 2012</em>*</td>
<td>Amanda</td>
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<td>3</td>
<td>4-Sep</td>
<td>Transportation 101 - System Components &amp; Terminology</td>
<td>Questions for BTV visit assigned; 2012 Elections (9/11) readings assigned</td>
<td>Airport Cooperative Research Program Research Results Digest 5 January 2009 New England Regional Airport System Plan, 2006 (in preparation for airport visit next class)</td>
<td>Sara</td>
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<td>4</td>
<td>6-Sep</td>
<td>Transportation Planning</td>
<td>Paper 1 due; Paper 2 assigned</td>
<td>*Vermont NHTS Fact Sheets (NHTS 2009)</td>
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<td>5</td>
<td>11-Sep</td>
<td>2012 Elections</td>
<td>Questions for BTV visit due</td>
<td>To be selected by each student</td>
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<td>6</td>
<td>13-Sep</td>
<td>Aviation: Visit to BTV Airport (4-5:45pm)</td>
<td>Questions for Catherine Lutz assigned</td>
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<td>**Ann</td>
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<td>7</td>
<td>18-Sep</td>
<td>Transportation Planning</td>
<td>*TRB Special Report 288 Chapter 2 **TRB Special Report 288 Chapter 4 **TRB Special Report 298 Chapter 3 **NCHRP Synthesis Report 406 Chapter 2</td>
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<td>*Chester</td>
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<td>8</td>
<td>20-Sep</td>
<td>Land Use</td>
<td>Questions for Catherine Lutz due</td>
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<td>**Nic</td>
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<td>9</td>
<td>25-Sep</td>
<td>Automobile Culture: Burack Lecture by Catherine Lutz (4-5:30pm, Billings North Lounge)</td>
<td>Questions for Tom McGrath &amp; Owen Brady visit assigned</td>
<td>Carjacked: The Culture of the Automobile &amp; its Effects on Our Lives (Preface &amp; Chapter 1)</td>
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<td>10</td>
<td>27-Sep</td>
<td>Critical Issues - According to who? How measured?</td>
<td>Project assigned</td>
<td>*Steg &amp; Gifford 2005</td>
<td>Tim</td>
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<td>11</td>
<td>2-Oct</td>
<td>Alternative Fuels: Visit by Tom McGrath (Vermont Clean Cities Coalition) &amp; Owen Brady (VT Gas)</td>
<td>Questions for Tom McGrath &amp; Owen Brady visit due</td>
<td>Alternative Transportation Fuels &amp; Vehicles: Energy, Environment, &amp; Development Issues, 2005; Vermont Clean Cities Coalition info on TRC website</td>
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<td>16-Oct</td>
<td>No classes - Take home mid-term exam</td>
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<td>18-Oct</td>
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| 9  | 23-Oct | MPOs | Questions for CCRPC visit due | 2025 Chittenden County Metropolitan Transportation Plan, 2005  
*Metropolitan Planning Organizations: Options exist to enhance transportation planning capacity & federal oversight (2009) GAO | Nich |
| 25-Oct | MPOs & RPCs: Visit to CCRPC (4:5:30pm, 110 W Canal St, #202, Winooski) | Project Lit Review Due | Metropolitan Transportation Planning: Executive Seminar | | |
| 10 | 30-Oct | Transportation Policy & Institutions | | | Chester |
| 1-Nov | Traffic Operations | Paper 3 due; Questions for Chris Cole visit assigned | Building on TEA21; Moving ahead for progress in the 21st century act (MAP-21), A summary of highway provisions  
*SAFETEA-LU Executive Summary for Minnesota 2005  
Characterization & Comparison of Traffic Flow on Reversible Roadways, 2010  
*Problem Driving Maneuvers of Elderly Drivers TRR 1843 2003 | Ann |
| 6-Nov | Congestion | Questions for Chris Cole visit due | TTI Urban Mobility Report 2011  
*FHWA Congestion Pricing, A Primer: Overview, 2008 | Isaac |
| 8-Nov | System Overview: Visit by Chris Cole (VTTrans Policy & Planning Division) | Project Summary of Data Due | State strategies for 21st Century Transportation Solutions | | |
(Executive Summary & Chapters 1 & 2)  
*Review of the 21st Century Truck Partnership, Second Report (Summary & Chapter 1) | Tim |
*AASHTO The Road to Livability, 2010 | Zach |
| 13 | 20-Nov | Thanksgiving Recess | | | |
| 22-Nov | | | | | |
| 14 | 27-Nov | Student Presentations (4:5:30pm) | Paper 4 due | | |
| 29-Nov | Student Presentations (4:5:30pm) | Panel questions due | | | |
| 15 | 4-Dec | Transportation Expert Panel - TO BE CONFIRMED | Last Class | | |
| 6-Dec | No class | Final Report due | | | |