Transportation Policy & Planning

Days, times: Mondays and Wednesdays, 2:00 pm to 3:25 pm
Location: 2214 Public Affairs Building
Plus: Friday, November 21st, 8:30 am to 6:30 pm

Instructor: Brian Taylor  Office: 3320H Public Affairs Building
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Course Description

This is one of the foundation courses in transportation policy and planning at UCLA. The course deals with a variety of topics and themes, all related to the management and performance of modern surface transportation systems. Some of the topics introduced in this class are presented at an introductory level, while others go into more depth. While some of the topics are most often addressed in the domain of transportation engineering or logistics and operations research, all are of central concern to transportation planners and policy analysts. Given the diversity of the topics covered, the class includes several guest speakers selected for their topical expertise.

The assignments for this class ask you to examine various aspects of transportation planning practice, and several require field work using Los Angeles’ transportation systems as a laboratory. There will also be a day-long field trip organized to introduce you to some important, though often overlooked, features of the regional transportation system.

Topics Covered

The specific topics covered in this course are as follows:

Part One: Introduction to transportation policy and planning
Topic 1: Overview of the course (10/6) – Taylor
Topic 2: The transportation planning process (10/6) – Taylor
Part Two: Evaluating transportation system performance
- Topic 3: The causes and consequences of traffic congestion (10/8, 10/13) – Taylor
- Topic 4: Mitigating congestion (10/15) – Taylor
- Topic 0: No class (10/20, in lieu of 11/21 field trip)
- Topic 5: Evaluating transport projects and performance (10/22) – Carole Turley
- Topic 6: Measuring road system performance (10/27) – Madeline Brozen
- Topic 7: Complete streets (10/27) – Madeline Brozen

Part Three: Inter-metropolitan movement of goods and people
- Topic 8: Goods movement (10/29) – Hasan Ikhrata
- Topic 9: Seaports and shipping (10/29) – Hasan Ikhrata
- Topic 10: Intercity passenger travel (11/3) – Martin Wachs
- Topic 11: Airports and aviation (11/5) – Taylor
- Topic 12: High Speed Rail (11/10) – Michelle Boehm

Part Four: Public transit planning
- Topic 13: Defining public transit modes (11/12) – Taylor
- Topic 14: Comparative evaluation of public transit systems (11/12) – Taylor
- Topic 15: The bus versus rail debate (11/17) – Marlon Boarnet
- Topic 16: Public transit performance and management (11/19) – Taylor
- Topic 17: All-day field trip to see major transportation facilities in LA (Friday, 11/21, 8:30 am – 6:30 pm) – Taylor
- Topic 18: Route planning (11/24) – Taylor
- Topic 19: Public transit operations (11/26) – Taylor
- Topic 20: Public transit in/from the developing world (12/1) – Taylor
- Topic 21: Transit planning for the elderly and disabled; the Americans with Disabilities Act (12/3) – Taylor
- Topic 22: Taxis and paratransit (12/3) – Taylor
- Topic 23: New technologies and transportation (12/8) – Emily Castor

Part Five: Looking Ahead
- Topic 24: Closing the circle (12/10) – Taylor

Course Requirements

There are five parts to the course: (1) lectures and class discussion, (2) reading assignments, (3) a daylong field trip, (4) written assignments, and (5) an oral final examination. These parts are intended to reinforce and not duplicate one another.
Lectures. Most of the class time will be devoted to lectures by the instructor and several guest speakers, though these will include Q&A and class discussions.

Class Participation: Regular attendance and active, informed participation in class discussion and activities are essential. Students who miss six or more hours of class sessions or the course field trip are required to complete an additional written assignment; students who miss twelve or more hours of class/field trip time are required to complete two additional written assignments, and so on.

No laptops, tablets, etc. in class. While I understand that many students like to refer to the course readings, previous lectures, and take notes on their laptops during class, past experience suggests that the temptation for multi-tasking – checking email, Facebook, Twitter, or surfing the web – is just too great for many students. Because the lectures for this course are content-heavy, and class participation is an essential part of the class, students will not be permitted to use any electronic devices – laptops, netbooks, tablets, smart phones, or cell phones – during class sessions.

Readings. The lectures will not cover all of the material in the reading, so it is essential that you keep up with the required reading. A complete list of course topics and readings is attached. All of the required readings and most of the supplementary readings available electronically through the UCLA Library will be posted on the secure course website. Readings with links that are marked with an asterisk can only be accessed on campus through the UCLA WiFi or remotely by using the UCLA VPN. Students are required to complete all required readings prior to the corresponding class session. For deeper coverage of each topic and to do background reading for a written assignment, you can peruse the supplementary readings as well.

In addition I recommend that you consider purchasing the following books, which contain materials relevant transportation planning and thus are useful references:


Field Trip. Part of the course will include an all-day field trip where we will examine land use and urban development along a number of transportation corridors in the Los Angeles area. The trip will take place on Friday, November 21st from 8:30 am to 6:30 pm. In consideration of the extra time required for this field trip, we will enjoy a “fall break” on Monday, October 20th. Any student unable to participate in the field trip will be required to complete a second policy brief.
Written Assignments: You are required to complete (1) the Project Evaluation Assignment, (2) any one Analytical Memorandum with a partner, and (3) any one of the Policy Briefs on your own. Your choices for these assignments are outlined below; the Project Evaluation Assignment will be distributed in class in conjunction with Topic 5. The Analytical Memoranda are designed so that you can use the Los Angeles transportation system as a laboratory rather than relying entirely upon the library or the Internet for your research. The goal of the Policy Briefs is for you to conduct a focused evaluation of a current transportation policy and planning issue. The due date for each assignment follows by a week or so the class session in which subject matter related to the assignment is discussed.

Oral Final Examination: Planners must regularly present their work, analyses, conclusions, and proposals in public settings. This oral final examination will take place in groups of three during a 60 minute block to be scheduled between December 15th and December 18th. This exam is intended to (1) encourage you to do all of the required readings, (2) help you synthesize the wide array of material presented in this course, and (3) practice presenting your work orally. At the conclusion of the 9th week of class, I will distribute a set of about 10 questions for which you should prepare oral responses. You will be asked to give a presentation on one of these questions (drawn at random) and to respond to questions about your presentation from two other classmates. You will also query your two classmates on their presentations. The exams will be graded on both the content and effectiveness of your presentations, questions, and responses.

Academic honesty. Planners work together in teams, and much of the work in the Public Policy and Urban Planning programs is collaborative. And, indeed, I encourage you work in groups on your analytical assignments, in discussing the readings, and in preparing for the examination. But whether work for a grade is done collaboratively or individually, academic and professional integrity are absolutely essential. This applies not only to your work submitted in graduate school, but in your professional work in public policy and urban planning. In this age of frequent film remakes, music mash-ups, and the voluminous and instantaneous information available on the Internet, the line between plagiarism and creative reinterpretation has surely blurred. But academic policy at UCLA regarding plagiarism is clear: the sources of all ideas, text, pictures, or graphics that are not yours (or your team’s) own must be fully cited, all passages copied from other sources must be in quotation marks with the source cited, and you absolutely cannot submit materials that have previously been submitted by other students in previous iterations of this course, even if you have re-worked this material for your submission. Should you have any questions about UCLA’s academic integrity policies, go to: http://www.studentgroups.ucla.edu/dos/students/integrity/.
Grading. Course grades will be based on the following:

- Project Evaluation Assignment 10 percent
- Analytical Memorandum 25 percent
- Policy Brief 25 percent
- Oral Final Examination 30 percent
- Class Participation (including field trip) 10 percent

Total 100 percent

Please note that late papers will be accepted, but a late grade penalty of 1/3 grade (an A becomes an A-, a B+ becomes a B, and so on) will be applied to any papers turned in after the due date. The late penalty for assignments can be waived only with a written note from a medical professional indicating that you were unable to work on your assignment in the week prior to the due date.

Reading Assignments

TOPIC 1: Overview of the course (10/6) - Taylor

No reading

TOPIC 2: The transportation planning process (10/6) - Taylor

Required Reading


Supplemental Reading


**TOPIC 3: The causes and consequences of traffic congestion (10/8, 10/13) - Taylor**

**Required Reading**


**Supplemental Reading**


TOPIC 4:  Mitigating congestion (10/15) - Taylor

Required Reading


Supplemental Reading


TOPIC 5: Evaluating transport projects and performance (10/22) – Carole Turley

Required Reading


Supplemental Reading


TOPIC 6: Measuring road system performance (10/27) – Madeline Brozen (UCLA Complete Streets Initiative)

Required Reading


Supplemental Reading

Elias, Aaron. 2011. “Automobile-Oriented or Complete Street? Pedestrian and Bicycle Level of Service in the New Multimodal Paradigm,” Transportation Research Record: Journal of the Transportation Research Board, 2257: 80–86. DOI: 10.3141/2257-09


TOPIC 7: Complete streets (10/27) – Madeline Brozen

Required Reading


Supplemental Reading


MacDonald, Elizabeth, Rebecca Sanders, and Paul Supawanich. 2008. The Effects of Transportation Corridors’ Roadside Design Features on User Behavior and Safety, and

**TOPIC 8: Goods Movement (10/29) – Hasan Ikhrata (SCAG)**

**Required Reading**


**Supplemental Reading**


Railroads and Trucking


TOPIC 9: Seaports and Shipping (10/29) – Hasan Ikhrata

Required Reading


Supplemental Reading


**TOPIC 10: Inter-City Passenger Travel (11/3) – Martin Wachs (UCLA)**

**Required Reading**


**Supplemental Reading**


TOPIC 11:  Airports and Aviation (11/05) - Taylor

Required Reading


Supplemental Reading


TOPIC 12:  High Speed Rail (11/10) – Michelle Boehm (California High Speed Rail Authority)

Required Reading


Supplemental Reading


California High Speed Rail Authority. Got to http://www.cahighspeedrail.ca.gov/ for the latest plans.

**TOPIC 13: Defining public transit modes (11/12) - Taylor**

Required Reading


Supplemental Reading


**TOPIC 14: Comparative evaluation of public transit systems (11/12) - Taylor**

**Required Reading**


**Supplemental Reading**


**TOPIC 15: The Bus versus Rail Debate (11/17) – Marlon Boarnet (USC Price School of Public Policy)**

**Required Reading**


Supplementary Readings


TOPIC 16: Public transit performance and management (11/19) - Taylor

Required Reading


Supplemental Transit Management Readings


Supplemental Transit Performance Evaluation Readings


TOPIC 17: All-day field trip to see major transportation facilities in LA (11/21, 8:30 am – 6:30 pm)

TOPIC 18: Route planning (11/24) – Taylor

Required Reading


Supplemental Reading


**TOPIC 19: Public transit operations (11/26) - Taylor**

**Required Reading**


Supplementary Readings


TOPIC 20: Public transit in/from the Developing World (12/1) - Taylor

Required Reading


**Supplemental Reading**

<http://www.uctc.net/access/37/access37_electric_cycles_China.pdf>.


**TOPIC 21: Transit planning for the Elderly and Disabled; the Americans with Disabilities Act (12/3) - Taylor**

**Required Reading**


Supplemental Reading


TOPIC 22: Paratransit and Taxis (12/3) - Taylor

Required Reading


Supplemental Reading


Required Reading


Supplemental Reading


Writing Assignments

There is one homework and two writing assignments for this course: (1) a project evaluation assignment that will be distributed in conjunction with Topic 5; an analytical memorandum and a policy brief. For the analytical memorandum, you and a partner are to gather information and data on a real world planning issue, analyze the information, and present your analysis and findings in a memorandum. For the policy brief, you work alone in analyzing and synthesizing already published material in a memorandum on a current transportation policy and planning issue.

For both of these assignments, you should:
• edit your work carefully,
• cite all of your sources,
• include a title page clearly identifying both the authors and the assignment completed,
• include a short executive summary (which is a free-standing summary of your entire memorandum – particularly your principal findings and recommendations; it cannot double as an introduction to the paper),
• use graphs, tables, and pictures to make key points,
• include a bibliography, and
• put supporting data or other materials in appendices.

The body of each paper should run about 2,000 to 3,000 words of text, excluding the title page, executive summary, bibliography, and any appendices. The papers should be double-spaced with one-inch margins and 12-point type. Appendices are for supplementary material, and not pictures, graphs, etc. that are central to your analysis; in other words, do not make the reader hunt through the back of the document in search of key data.

Further, since both of these written assignments ask you to evaluate the implementation/performance of urban transportation policies, programs, projects, or proposals, I strongly suggest that, prior to conducting your analyses, you carefully review the required readings the evaluating transport projects and performance topic for information on conducting evaluations.
As background for preparing these assignments, I have placed two documents on the course web site. The first is a brief guide to effective analytical writing, and the second is a guide to writing memoranda. I suggest that you take a look at each of these documents before submitting your first assignment. Each paper is marked using a multi-dimensional rubric, which is attached to the back of this syllabus. You should review this rubric to get an idea how we will be evaluating your written assignments.

Finally, all assignments must be submitted on Turn-It-In and in hardcopy form. Electronic submittals are due at the same date and time that hardcopy forms are due. There will be a link for Turn-It-In on the course website, and can also be accessed on my.ucla.edu. All assignments should be placed in the tray on top of the workstation just inside the entrance to the Urban Planning main office (which is currently occupied by Anthony Lee) in Public Affairs Building room 3357 by the due date and time. Do not place the assignments under my door, in another mailbox, or anywhere else.

The following written assignments often require you to analyze statistics on expenditures, service provision, ridership, and more. Finding transportation statistics can be a daunting task, but a number of organizations—such as the Federal Transit Administration, the American Public Transit Association, and the U.S. Department of Transportation—now provide transportation information in a single location. On the course website you can find a brief introduction to a number of transportation resources that may assist you in your assignments.

**Analytical Memorandum** (Select any one assignment below and conduct your work in teams of two)

**OPTION 1: Major transportation investments and NIMBYism: The case of the Orange Line**

A common lament of transportation planners trying to get major transportation investments approved and built is that the benefits of transportation projects are distributed broadly across regions, but the impacts are often concentrated along the proposed transportation corridor. The result of this geographic imbalance between costs and benefits is frequently a highly motivated group of locals opposing a project, but no organized constituency in favor. The localized opposition to such projects is also called Not-In-My-BackYard-ism, or NIMBYism.

The Orange Line busway in the San Fernando Valley is a classic example of this phenomenon. The Los Angeles MTA explored plans to build a major public transportation investment along an old railroad right-of-way in the Valley beginning in the 1980s, but community opposition derailed many proposals, including subways and light rail. However, in 1999, the MTA tried again with a proposal for a “bus rapid transit” project through the corridor; bus rapid transit, or BRT, is sometimes called “light
rail on rubber tires.” Community opposition to this alternative was intense, culminating in a lawsuit against the Environmental Impact Report (EIR) for the project.

Nevertheless, the MTA prevailed in the lawsuit and the project was constructed, opening in October 2005. The project is generally regarded as a success relative to other major transit investments, attracting, for example, more riders than the Gold Line light rail between downtown Los Angeles and Pasadena at about one-third the cost. But do these regional benefits in increased transit ridership outweigh the localized impacts (noise, traffic disruption, safety, etc.) of building a busway through the neighborhoods in this corridor?

For this memorandum, you and your partner should investigate the complaints of local residents as recorded in the Final EIR for the project, as well as the responses of the planners working on the project at the time. Why were residents opposed to the project? How did planners propose to address their complaints? You should also conduct your own investigation of the situation (read the relevant project evaluation and public participation readings and selections of the Final EIR available from the LA MTA Library). Travel up to the Orange Line, ride it, and record any evidence you might find that reinforces the arguments of the opposition or the MTA. Take pictures as necessary to back up your arguments, and cite archived articles from local newspapers, including the Los Angeles Times and the Los Angeles Daily News, that include facts about how the Orange Line has functioned since it opened. Finally, talk to at least two people, either in the neighborhood along the Busway or amongst the organizations listed as opposing the project in the Final EIR about their views on whether the issue(s) was resolved. Have they changed their minds now that the busway has been operating? Conclude your memo by describing what you think the right balance between local impacts and regional benefits should be. Do you think the Orange Line achieved that balance?

Due: Monday, October 14th at 1:55 pm

OPTION 2: Road system performance in West LA

Planners and traffic engineers can have very different ways of thinking about the purpose and performance of urban streets. The increasingly popular “Complete Streets” movement, for example, aims to reconcile these competing visions for streets by developing more holistic street designs and measures of their performance. In this assignment you will explore the social, economic, and functional roles of two major urban arterials in west Los Angeles: Olympic and Pico Boulevards between the San Diego Freeway (I-405) and Avenue of the Stars in Century City. These two streets have been in the news in recent years because of controversial proposals to turn them into parallel one-way streets. Some have argued that doing so would address severe east-west
surface street capacity problems on the Westside, while others have contended that doing so would make these streets less “complete.”

You should begin your work on this project by inspecting recent evaluations of this proposal and the media coverage of them, as well as reading both the required and recommended readings on the evaluating transport projects and performance, road system performance, and complete streets topics. For your analysis, you should start by defining (and defending) a specific set of criteria (functional, economic, social, etc.) with which you will conduct your analysis. In other words, what purposes do you think these streets serve, and what priority would you give to each of these purposes? Describe and rank these purposes as explicitly as you can, briefly defending your choices from the course lectures and readings if possible.

You will then need to gather data relevant to your criteria. To gather such data, walk along the two streets, and cross them at the crosswalks to allow you to evaluate the differences in the two streets from the perspective of a pedestrian. If you feel safe doing so, bicycle along the two streets to be able to describe them from the cyclist’s point of view as well. You might also travel the streets on a bus to include observations about transit travel on the streets. Finally, you should travel along both streets in both directions several times during peak and off-peak hours (weekdays and/or weekends for off-peak) in a motor vehicle, record travel times and experiences, and take pictures.

In addition to experiencing the two streets, you and your partner should gather data on or directly estimate vehicular volumes, densities, and travel speeds along the two streets on various days and various times of the day. In addition to your volume and speed data, you should gather information regarding the traffic conditions along the route, such as adjacent land uses, the frequencies of various vehicular turning movements, the presence or absence of transit vehicles, trucks, and bicycles, pedestrian activity, street widths, numbers of lanes, presence or absence of turning lanes, and the nature of traffic signalization (green time versus red time, protected turning movements, synchronization of traffic signals, etc.). You should augment these directly collected data with any published reports or traffic data available from the UCLA libraries or over the Internet (such as at the LA DOT site: <http://trafficinfo.lacity.org/>).

With your evaluation criteria (i.e. your rank-ordered priorities for each of these two streets) and all of the data you have gathered, you should then evaluate how well each of these streets is “performing.” Do you think that these stretches of Olympic and Pico are serving similar or different purposes? If so, why? If not, should they be? Are some purposes given too much priority in the use of the street, and others too little? Are some purposes (strolling, window shopping, bicycling, etc.) at odds with others (traffic throughput, transit service, etc.)? If so, how? Given the foregoing, what would you recommend regarding proposals for Olympic and Pico to be parallel one-way streets, or
parallel directionally asymmetrical streets? Finally, do you have any recommendations for how transportation planners and engineers might improve the performance of the two streets in your study area, given the purpose priorities you have outlined?

Due: Wednesday, October 30th at 1:55 pm.

OPTION 3: Rethinking Level-of-Service

Since the inception of street controls and the professionalization of urban planning and civil engineering, transportation planners and engineers have sought to evaluate the performance of roadways. The standard metric for the evaluation of urban roadways in the United States has long been the so-called “level of service” (LOS) metric, a quantitative estimation of roadway performance from the traveler’s perspective when travelling in a motor vehicle. This performance measure rates roadway performance largely in terms of vehicle delay using a letter score, from A-F, which represents the ratio of motor vehicle throughput to roadway capacity. Since the 1970s, progressive transportation planners and advocates have suggested that this traditional LOS metric overemphasizes vehicle throughput at the expense of other modes of travel and uses of streets; they complain in particular that LOS privileges automobile travel, while neglecting the experience of transit passengers, bicyclists, and pedestrians. Many municipalities are interested in moving away from only evaluating roads through this traditional lens, but for a variety of reasons have found it difficult to do so.

You and your partner are analysts with the Los Angeles Department of Transportation. Your General Manager wants to demonstrate to the new Mayor that the Department is taking steps towards holistically evaluating the performance streets considering a variety of travel modes, and not just driving. Your assignment is to prepare a white paper for the Mayor and his senior staff so that they fully understand the issues. You should begin by providing an overview of the traditional roadway LOS. Where did this metric come from? What are its strengths and weaknesses? Next, drawing on both recent research and the experience of early adopter cities, explain in detail what a multi-modal level of service (MMLOS) is, and how it might work in Los Angeles. Review some of the new, more holistic roadway evaluation tools, and make an evidence-based recommendation of whether you think that the City of Los Angeles should adopt a new LOS measure. Whether you recommend a new or the traditional metric, demonstrate the value of your favored metric by using it to evaluate two street segments: one that you believe is performing well for non-motorized use and one that is underperforming. Explain the experience of using this tool and how, in your professional opinion, the resulting scores relate to the physical environment.

To conduct this assignment, you should read all of the required and supplemental readings for the “Measuring Road System Performance” and “Complete Streets” topics,
and you can secure access to the necessary software from either Madeline Brozen or Herbie Huff in the Lewis Center Complete Streets Program.

Due: Wednesday, October 30th at 1:55 pm.

OPTION 4: Evaluating the LAX Master Plan

While several other airports process more transferring passengers, more people begin or end their air travel at Los Angeles International Airport than any other airport in the world. This suggests that LAX generates more landside vehicular traffic than any other airport. And given that LAX sits on one of the smallest “footprints” of any of the world’s major airports, airport planners are struggling to cope with significant projected increases in passengers over the next decade as the economy recovers.

The events of September 11th, 2001 also raised pressing issues about airport security, and while billions of dollars have been authorized for security enhancements, developments at LAX (and most other airports) have been slow in coming. Current debates about LAX’s master plan now include issues of adequate and effective security in addition to passenger growth; these two issues are not always congruent.

You are staff to Governor Brown’s Blue Ribbon Committee on Infrastructure Development for the 21st Century. The committee has been drawn into the LAX expansion and security controversies and has asked you to prepare an analysis of the most recent LAX Master Plan and the objections of the plan’s opponents. In particular, the committee wants advice on whether to support the proposed plan, with careful attention to mitigating as many of the opponents’ concerns as possible, or whether to support the development of increased airport capacity and upgraded security elsewhere in the region. As background, the committee has asked that your analysis address the following questions: Does the plan adequately accommodate projected increases in air passenger travel in the coming years? Does the plan sufficiently mitigate its anticipated environmental impacts, particularly with respect to landside traffic? Is the plan financially feasible?

In evaluating the LAX Master Plan, you and your partner should review all of the relevant course readings, including the entire current LAX master plan proposal. You should search the web for newspaper accounts and commentary on recent master plan proposals and reactions to them. And you should interview at least two stakeholders in the process (at least one airline representative, airport planner, or airport commissioner, and at least one planner, representative, or activist from one of the communities affected by the LAX Master Plan). Finally, you might find it useful to inspect the areas of conflict between LAX and the surrounding communities for
yourselves, taking pictures for your paper along the way. You should be sure to cite evidence from these sources in addressing the above questions.

Due: Wednesday, November 13th at 1:55 pm.

OPTION 5: Evaluating the public presentation of transit performance data

Public transit system managers use performance measures in at least three ways: (1) as an internal (and often private) signal to guide short- and mid-term management of operations and capital planning, (2) to report to governing boards and the general public about how the organization is performing over time, and (3) to report to funding agencies in order to justify future subsidies. The objectives of each of these purposes overlap, but not entirely, particularly regarding the amount of “dirty linen” the managers want publicly aired about their agencies.

Your assignment is for you and a partner to examine in detail how four different public transit agencies (of your choosing) present data on the performance of their organization to the general public. See Vancouver’s TransLink for an example of an agency that aims to present a great deal of performance information to the general public (http://www.translink.ca/en/Plans-and-Projects/Managing-the-Transit-Network/Transit-System-Performance.aspx). In deciding which agencies to examine, you should select no more than two agencies that your initial scan suggests do a poor job of communicating performance data to the general public, and at least two that appear to present a great deal of performance information to the public. Do you find the information to present a balanced appraisal of performance, or information that has been “cherry picked” to make the agency look good? Do you find the information useful and informative? How does the information presented by each of the agencies square with what we learned about performance evaluation in the readings? (Be sure to make specific references to the readings as appropriate.) Describe the additional performance measures you believe should be included in each agency’s public presentation of its performance and, drawing on data from the Federal Transit Administration’s National Transit Database or the American Public Transit Associations transit statistics site, calculate the performance of your proposed metric for at least the last three years. Finally, conclude with a discussion about why you think that some agencies might be more forthcoming with performance information, which others are more reticent to share such information.

Due: Wednesday, December 4th at 1:55 pm.

OPTION 6: Public transit route evaluation
Transit planners consider a variety of factors in planning and scheduling routes. Severe peaking of demand on transit often requires high levels of service on particular days and times, in particular areas, and in particular directions, and providing peak hour service usually has high marginal costs. On the other hand, most transit operators try to provide a minimal level of service on days, times, in areas, and in directions with relatively low levels of demand – yet providing service at low demand times and in low demand areas usually attracts very little revenue.

Your task is to evaluate a current line on any local transit system, and make recommendations for improving its service effectiveness. You and your partner can choose any line you wish, provided you are able to ride the entire line at least once during a peak period and at least once during an off-peak period. You and your partner’s analysis should include the following:

- Describe the line's service characteristics (routing, stops, days and time of service, headways, total round trip time, operating speed, total passengers, etc.).
- Estimate the allocation of passengers by time of day (AM peak, mid-day, PM peak, evening) for each service day type (full-service weekday, full-service Saturday, etc.).
- Estimate the line's service effectiveness (peak to off-peak bus ratio, passengers by service day type, passengers per vehicle service hour, passengers per vehicle service mile, load factor, etc.).
- Identify the major trip generators, trip attractors, and trip types served by the line.
- Identify the major temporal, spatial, and directional patterns of travel demand.
- Identify any service strengths and weaknesses (inadequate peak hour capacity, awkward routing, excessive or inadequate stops, etc.).
- Make specific recommendations for improving the line (routing, stops, headways, etc.) without increasing the total number of vehicle service hours on the line.

To prepare for your analysis, you and your partner should carefully review the relevant required and recommended course readings, and in particular the required and supplemental route planning readings in the syllabus. The analysis should organize descriptive detail into tables, graphs, and appendices as much as possible; use your text to interpret your findings and argue your recommendations. You should deal with all of the questions posed here (and any others you believe important), but feel free to address them in any order you like.
Due: Wednesday, December 4th at 1:55 pm.

OPTION 7: Americans with Disabilities Act and public transit

Unless you are already a wheelchair user, you and your partner should borrow or rent a wheelchair for one day. Select an origin and destination for a trip of at least 6 miles one-way (say, UCLA to LAX or your home to the County Museum of Art) and plan a transit route from origin to destination – ideally requiring at least one transfer. Leave your origin with one student sitting in the wheelchair, and the second serving as an escort. For your own safety and out of respect for others, stay “in character” the entire time; do not at any point in the trip give the impression that you are faking a disability.

Go to the nearest bus stop and complete the trip to your destination using the wheelchair lift on the bus and the tie-down devices to secure the wheelchair. Having reached your destination, you should, in a private spot, reverse your roles - the escort taking the chair and the person previously in the chair becoming the escort. Return to the origin by transit. Along the way take note (and pictures) of the experience of using the wheelchair on city streets and sidewalks, using the wheelchair lifts on buses, and traveling about Los Angeles in a wheelchair. Take note of the attitudes of bus drivers and passengers. Take note of whether any buses pass you by and/or any wheelchair lifts are out of order, and be sure to take pictures along the way.

Having had the experience of traveling as would a wheelchair user, prepare a memorandum drawing on all of the course readings relevant to this assignment and on your field experience in assessing “accessible transit” in Los Angeles. Please note that your review of these readings is an important part of this assignment. What specific changes would you recommend be made (recognizing that we are in an era of limited public budgets) to improve the experience for wheelchair-using travelers on your specific itinerary? And, more generally, what do you think that transportation planners should know about accessible transportation planning that they may not currently understand?

Due: Wednesday, December 11th at 1:55 pm.

OPTION 8: Taxis: What role for planning?

While most everyone knows about taxicabs and have ridden in them at one time or another, most transportation planners don’t think about taxicabs as a central element in urban transportation systems. Taxicabs, and related shuttle services, are almost always for-profit enterprises that require no public subsidy and are regulated, often heavily, by local governments.
You are your partner are analysts with the Los Angeles Metropolitan Transportation Authority, and one of your board members caught your Executive Director completely off-guard recently when she suggested that MTA look into the benefits and costs of shifting the management and regulation of taxicabs from LA County’s 88 cities to the MTA, particularly in light of the growth of new, smart-phone based livery systems like Uber, Lyft, and Sidecar. She suggested that such a move would streamline the regulation of taxicabs and would allow the MTA to weave taxicabs and these new services into its overall regional transportation planning efforts. Other board members appeared aghast by the idea, but to respond to the board member’s request, the Executive Director has instructed you and your partner to prepare a background paper on the state of the taxicab industry in LA County.

As background for this analysis you should review both the required and supplemental readings relevant to this topic, and gather and review all of the reports on taxicabs in LA County that you can find. How many cabs are in operation? Where? How many passengers are carried by cabs? Shuttles? What about the new smartphone-based services? How big are they now, and how fast are they growing? How does this compare with public transit services? Finally, you should select any four cities in LA County that you would like, and then compare the rules that govern the operation of taxicabs in those cities, including fares, pick-up/drop-off rules, and license/medallion costs. How do these rules compare among the four cities? Are they complementary or conflicting? What do you think would be the pros and cons of consolidating the management and regulation of taxicabs? For government? For the taxi companies? For new smartphone-based services? For the drivers? For the customers? Finally, do you recommend that the MTA should explore the benefits and costs of countywide taxicab management and regulation further, or do you think that the benefits of doing so are unlikely to outweigh the costs?

Due: Friday, December 13th at 1:55 pm.

Policy Brief (Select any one below; written individually)

OPTION 1: Sustainable gridlock?

Chronic traffic congestion in metropolitan areas has been front-page news for decades. Some observers predict the kind of nightmarish congestion in U.S. cities that is currently seen in the major cities of many developing countries such as Bangkok, Jakarta, and Lagos. Other analysts are more sanguine and argue that many of the social and economic trends that have caused the rapid growth in traffic are unlikely to continue unabated into the future. While the severe economic recession has slowed the growth and congestion over the past few years, many observers predict that congestion will worsen considerably as the economy recovers.
You are a transportation analyst for a metropolitan planning organization (MPO) and the Executive Director of this MPO has asked you to prepare a short “white paper” memorandum on the likely future of metropolitan traffic congestion. The MPO's Board of Directors (all of whom are locally elected officials who know little about transportation planning) are concerned about media reports of “three-hour round trip commutes by the year 2025” and want to know what measures, if any, should be taken to head off this impending disaster.

The Executive Director has asked you specifically to prepare a report that: (1) briefly reviews the current levels and trends of traffic congestion in U.S. metropolitan areas; (2) outlines the causes of the traffic congestion; (3) speculates on the future of traffic congestion in U.S. metropolitan areas (e.g. do you think, given current travel patterns and social and economic trends, that traffic congestion is likely to grow worse over the next ten years, stay about the same, or get better?); and (4) makes recommendations on the actions you think planners should take with regard to traffic congestion in metropolitan areas.

To prepare for this assignment, you should carefully review all of the relevant (both required and recommended) course readings on this topic. You can address your memorandum to the MPO director of any U.S. metropolitan area with a population of one million or more. You should be sure to support your analysis, speculations, and recommendations with argument, citing data and background materials where appropriate. You should address all of the issues outlined above (and any others you believe important) and can structure your paper as you see fit.

Due: Wednesday, October 23rd at 1:55 pm.

OPTION 2: What does the TTI traffic congestion index tell us?

Each year researchers at the Texas Transportation Institute (TTI) publish their Urban Mobility Study rankings of major U.S. metropolitan areas. And each year these rankings are front-page news, and a source of pride or embarrassment for the elected officials and planners in the “best” and “worst” metropolitan areas.

Comparing the levels of traffic congestion in metropolitan areas would seem a straightforward endeavor, but is it? Your assignment is to carefully scrutinize the annual TTI index and address the following questions (and any others you deem appropriate): How are congestion levels determined? What data are used? What do you see as the strengths of this index? What, specifically, do you see as the weaknesses? Is the index biased in favor or against certain types of metropolitan areas? Do you think that the index meaningfully reflects the experiences of travelers on metropolitan road networks?
Do you have any suggestions for improving the index? If so, what data would be required to implement your proposed improvements? Finally, if in the coming months you were asked by a panicked Mayor of Los Angeles to interpret a new TTI index ranking Los Angeles as the most congested U.S. metropolitan area, how would you respond?

For this assignment, you should review both the relevant required and supplemental course readings. You should then carefully peruse the TTI web site: <http://mobility.tamu.edu>. Finally, you should search for blogs and evaluations of the index by other researchers. Does the index have its supporters? Critics? If so, what do they say and how would you evaluate their arguments?

Due: Wednesday, October 23rd at 1:55 pm.

**OPTION 3: Traffic management on the Route 91 HOT lanes**

The Route 91 High-Occupancy Toll (HOT) Lanes have attracted attention, both positive and negative, since they first opened in December 1995. The four-lane facility in the center of State Route 91 in Santa Ana Canyon in Orange County was privately financed and operated, is now owned and operated by the OCTA, and is the first application of congestion pricing to a roadway in the U.S.

The lanes attracted a great deal of negative publicity a few years ago regarding various aspects of their private finance and operation. The congestion pricing aspect of the project received a great deal of attention – primarily in the form of wariness by elected officials – when the project was being developed, but less attention since the lanes began operation. Your assignment is to evaluate the performance of these HOT lanes as a congestion management tool.

For this assignment, you should review the relevant required and supplemental course readings, and relevant data and information available from several web sites.

Drawing on the data and analyses in these publications and on these web sources, you should address the following questions: How have the lanes affected congestion in the SR 91 corridor? Has traffic remained un-congested in the toll lanes? Have the toll lanes affected congestion in the free lanes? If so, how and why? Have the lanes simply allowed the wealthy to buy their way out of congestion, leaving the less well-off stuck behind? Based on your analysis of the Route 91 lanes, do you think that HOT lanes should be applied more broadly or abandoned? If the former, under what conditions should they be expanded? If the latter, why do you think they are a bad idea? Be sure to present data and cites in both your analysis and in support of your findings.

Due: Wednesday, October 23rd at 1:55 pm.
OPTION 4: Time for change?

In response to energy savings arguments, Congress recently expanded daylight savings time by about a week in the fall, and about a month in the spring. While the focus of the purported energy savings is on a reduced need for late afternoon lighting, the Chair of the Senate Transportation Committee in California was surprised to learn that this change may reduce traffic delays (and vehicle emissions) as well. Put simply, the “effective” capacity of roads tends to be higher during daylight hours, and extending daylight during the afternoon rush hours may well reduce vehicle delays.

Intrigued, the Chair began poking around on the web and was surprised to learn:

1. That energy analysts have been trying to get daylight savings extended year-round, and some have even suggested “double-daylight-savings” for the summer months;
2. That one of the most dangerous travel days of the year is the “spring-forward” Monday each spring when people lose an hour of sleep and are driving about more tired than usual;
3. That concerns over children of farmers in the northern U.S. states waiting in the morning dark for school buses has thwarted previous efforts to extend daylight savings year-round; and
4. That there remains a cadre of committed critics to daylight savings who argue that it ought to be eliminated altogether.

Given the dwindling numbers of both school buses and farmer’s children, the Chair has asked you to prepare an analysis of the potential transportation, energy, and emissions costs and benefits of extending daylight savings time year-round in California. For the transportation costs and benefits, you should consider fuel use, emissions, traffic delays, safety, and public transit use. For the non-transportation costs and benefits, you should consider the factors most often cited in the literature.

To conduct this analysis, you should perform an extensive search of the relevant literatures (which will require library search engines in addition to Google) to identify what has been written on these topics. Your search should be thorough; three or four sources will not do. From this search you should prepare an evaluation, drawing on the findings of the previous studies in addressing the following questions:

1. What are the potential transportation benefits of year-round daylight savings in California?
2. What are the potential transportation costs?
3. What are the potential non-transportation benefits?
4. What are the potential non-transportation costs?
5. Is there enough evidence in the literature to draw preliminary, probably, or certain conclusions regarding the relative balance of benefits and costs of a shift to year-round daylight savings? If so, what do you find?

6. Based on your analysis, would you recommend that California pursue year-round daylight savings? What are likely to be the objections to your proposal, and how would you propose that they be addressed?

7. Finally, what specific research would you propose needs to be done to more fully settle this issue?

Due: Wednesday, October 30th at 1:55 pm.

OPTION 5: Truck-only tollways for Southern California?

As the economy recovers, truck traffic is projected to grow faster than other form of surface travel. Such projections suggest a need for increased capacity in high-volume goods movement corridors, yet current transportation revenues are not sufficient to maintain existing highways. In response have come proposals to use toll finance to develop truck-only toll (TOT) lanes in key corridors. Supporters say that urban and suburban TOT lanes would provide congestion relief for everyone, in addition to better access to and from key ports and airports for shippers, and longer-distance TOT lanes would permit longer combination vehicles that are not currently allowed on most interstate highways. While skeptics wonder whether truckers would ever choose to pay for toll when free roads are plentiful, supporters contend that trucking firms and shippers would be willing to pay tolls for faster travel.

In 2005, the Southern California Association of Governments (SCAG) published a report saying that development of a regional system of "user supported dedicated truckways offers a viable and self-financing way to mitigate congestion and reduce vehicle emissions in southern California.” The report suggests that a “142 miles (229km) of 2x2 lane truckway from the San Pedro Bay ports (LA and Long Beach) northeast through the greater Los Angeles area through the San Gabriel mountains to Barstow on I-15 on the edge of the Mojave Desert. In Barstow the highway divides, and the I-40 heads east through Oklahoma City to the Carolinas, while the I-15 continues through Las Vegas, Salt Lake City, and points northeast.”

Exploration of this idea has continued, though the slowing in goods movements related to the economic downturn have put the proposal on the backburner as regional planners have pursued other ways to improve capacity in the I-710 and SR-60 corridors. You are a consultant for the California Transportation Commission who has been asked to prepare an evaluation of the potential of truck-only facilities to address capacity, environmental, and safety needs in Southern California, particularly when goods flows begin to increase again as the economy recovers. To prepare your analysis, you should
review both the relevant course readings as well as materials on the Southern California proposal and research on truck-only toll lanes. Is this an idea worth pursuing? Or would they simply be “smog-belching truck tollways” as critics claim? Be sure to support your positions with data and evidence.

Due: Wednesday, November 6th at 1:55 pm.

OPTION 6: High speed rail and/or increased air travel: What should the future hold?

California is embarking on an ambitious and expensive high-speed rail development program, and federal officials appear to be following suit. High-speed passenger rail service has gradually been developed in Europe and Asia over the past several decades along major conurbations of urban development. While there is little disagreement that ongoing growth, development, and trade will significantly increase inter-regional travel in the coming years, significant disagreement arises over the best ways to accommodate increased passenger travel demand. And while the prospects of riding high-speed rail are popular with most everyone, the prospects of paying for high-speed rail leaves many more ambivalent. Some experts argue that increased airport capacity is the most cost-effective approach given the extensiveness and integration of the global air travel system, while others contend that high-speed rail offers long-term land use and environmental benefits for California and other regions over the expansion of airports and air travel. And while funding for the first phases of high-speed rail in California are now in place, this funding is largely in the form of debt and it’s not clear whether there is enough funding to complete even the initial phases of plans in place.

Given profound concerns over other pressing fiscal needs in state government, and the need to secure billions more in funding to complete proposed high-speed rail plans, the Governor has retained you as a consultant to advise him on the question of how best to cost-effectively and sustainably increase inter-city passenger capacity in California. Should high-speed rail plans go forward with partial funding? Should additional revenues be identified before construction commences? Should plans be put on hold until the state is through its fiscal crisis? Or should increased air capacity be pursued as an alternative to high-speed rail? In preparing your analysis, you should carefully review all of the relevant course readings, and search for others on the web. Be sure to conclude with specific recommendations and responses to likely critics of your proposals.

Due: Wednesday, November 13th at 1:55 pm.
OPTION 7: Comparative analyses of bus and rail transit systems

The Los Angeles MTA is well into an ambitious and expensive program of rail transit development in Southern California. While several lines are now in place, recent funding shortfalls have increased the controversy and public debate over future MTA rail transit lines. Concerned by these controversies – and especially by the claims that Los Angeles could be developing alternative transit systems that would provide higher levels of service at far lower costs – the MTA has also been developing Rapid Bus lines on heavily traveled transit corridors and has expanded HOV lanes on the LA freeway network as well. The California Transportation Commission has asked you to prepare a “white paper” examining the relative performance of rail transit, bus/HOV lanes, and RapidBus lines in Los Angeles County.

You should carefully review the relevant required and optional course readings and, in addition, you should secure relevant cost and performance data on (1) the Blue, Gold, Green, and Red lines, (2) the new MetroRapid and Silver Bus lines, and (3) the County freeway HOV lanes from the MTA. You should then define the criteria for your analysis and comparison as explicitly as possible. Using these data and criteria, compare the performance of these three approaches to expanding transportation capacity. According to your analysis, which of these projects is delivering the most bang for the buck, and which the least? Accordingly, to which of these programs would you recommend that the MTA devote its shrinking resources? Your analysis should consider: (1) the techniques used to compare the cost-effectiveness of alternative transit modes, (2) the available data on the cost and performance of these modes in LA, and (3) the arguments of experts on the relative cost-effectiveness of busway/HOV facilities versus rail transit facilities versus rapid bus projects in places like Los Angeles.

Due: Wednesday, November 20th at 1:55 pm.

OPTION 8: Performance audit of the Culver City Bus or the Santa Monica Big Blue Bus

The Los Angeles Metropolitan Transportation Authority is both the region’s largest transit operator and the agency responsible for allocating federal, state, and local transit subsidy funds to all transit operators in Los Angeles County. Recent recession-induced tax revenue shortfalls have forced the LA MTA to carefully re-evaluate subsidy allocations to all public transit systems in the county, including those to Culver City and Santa Monica.

To inform deliberations on possible subsidy cutbacks to these two systems, the LA MTA Board has asked you to prepare a “performance audit” of one of these two systems (you may choose which to examine). The purpose of this audit is to both assess current operating performance and determine performance trends for the past few fiscal years.
The board has specifically asked you to address the following questions:

1. What has been the long-term trend of revenues for Culver City/Santa Monica, and how do these trends compare with similar transit operators nationwide? In addition, what has been the long-term trend of farebox recovery rates and how have these rates compared with peer operators over the years?

2. Select a series of performance measures you believe to be appropriate and analyze transit performance trends over time (remembering to control for the effects of inflation). What measures reveal improved performance over time and which indicate deteriorated performance?

3. If you lack adequate data to measure the dimensions of system performance as you see fit, what additional performance measures would you suggest be included in subsequent performance audits and what additional data would be required?

4. Given these trends in operating performance, what general recommendations can you make to improve both the efficiency and effectiveness of Culver City/Santa Monica in the future?

For this analysis you should:

- Review the relevant required and recommended course readings,
- Review the Transit Performance Evaluation Readings listed under the public transportation topic,
- Review the most recent Short Range Transit Plan and Triennial Performance Audit for your operator. These reports should be available from either the Maps and Government Information Division of the Young Research Library, the Los Angeles MTA Library, or directly from the operator,
- Review your system’s operating statistics and nationwide operating averages for all U.S. transit operators in the National Transit Database compiled by the Federal Transit Administration. You can access NTD data via the Internet <http://www.ntdprogram.gov/ntdprogram/>.

In your analysis, organize descriptive detail into tables, graphs, and appendices as much as possible; use your text to interpret your findings and argue your recommendations.
You should deal with all of the questions posed here (and any others you believe important), but feel free to address them in any order you like.

Due: Wednesday, December 4th at 1:55 pm.

Appendix

Below is the rubric we will use to evaluate your written work in this course. You can use this rubric to think about the construction of your written assignments.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Evidence-based analysis</th>
<th>Topic:</th>
<th>Critical thinking</th>
<th>Logic/organization</th>
<th>Grade:</th>
<th>Presentation</th>
<th>Writing</th>
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<tbody>
<tr>
<td>Exceptional understanding of all issues relevant to question; impressively well informed and aware of complexities</td>
<td>Engagement with the literature demonstrates a deep understanding of a breadth of sources and a critical, interpretive eye; data from a variety of sources effectively supports analysis</td>
<td>Outstanding, critical insight with evidence of original thought; excellent integration of concepts and theories with evidence relevant to the question at hand</td>
<td>Argument(s) logically structured and fully developed with exceptional clarity, coherence, and fluency throughout</td>
<td>Exceptionally clear, polished, and attractive presentation; the text, sections and subsections, charts, and pictures are of the highest quality and very effectively advance the analysis and arguments</td>
<td>Exceptionally well written. Crisp and elegant prose, clear voice, free of jargon and technically polished.</td>
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<tr>
<td>Very good understanding of topic and question; well aware of nuances and complexities</td>
<td>Very good use of and engagement with a wide-ranging literature sources, as well as appropriate data, tables, and/or charts to support the work</td>
<td>Very well constructed arguments with very good use of concepts and theories; clear evidence of independent thought</td>
<td>Argument(s) very well structured and developed; ideas clearly presented throughout</td>
<td>Very clear, polished, and attractive presentation; the text, sections and sub-sections, charts, and pictures are very good quality and effectively advance the analysis and arguments</td>
<td>Very good writing; clear, concise, with few, if any, flaws.</td>
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<tr>
<td>Thorough, clear treatment of issues; demonstrates an understanding of the question, arguments, and context</td>
<td>Good use of and engagement with literature sources, as well as appropriate data, tables, and/or charts to support the work</td>
<td>Solid critical analysis with appropriate use of concepts and theories; some critical engagement with the literature</td>
<td>Argument(s) are for the most part clearly structured and logically developed throughout</td>
<td>Generally clear, polished, and attractive presentation; the text, sections and sub-sections, charts, and pictures are of relatively good quality and for the most part advance the analysis and arguments</td>
<td>Good writing; conveys information effectively, but has some flaws and lacks the polish and sophistication of outstanding writing.</td>
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<td>Demonstrates a reasonably sound, but not always rigorous understanding of the topic and surrounding issues</td>
<td>Competent use of literature sources and supporting data, but not always with nuance or rigor</td>
<td>Largely appropriate engagement of concepts and theories; some evidence of critical analysis</td>
<td>Argument(s) are either well-developed but poorly organized, or well-organized but under-developed</td>
<td>Adequate presentation, though less than professional quality; some effective organization, charts, pictures, etc. that generally, if not always effectively, advance the analysis and arguments</td>
<td>Competent writing that would benefit from better organization and editing.</td>
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<tr>
<td>Work demonstrates some understanding of question and issues, but not in a sophisticated or nuanced way</td>
<td>Insufficient treatment of the literature, and only partially effective use of supporting data, tables, or graphs</td>
<td>Marginal use of concepts and theories; largely descriptive analysis lacking in nuance and rigor</td>
<td>Argument(s) undeveloped and not always clear; the conclusion is not well supported by the body of the work</td>
<td>Generally sloppy, ineffective presentation that is well below standards of professional quality; organization, charts, pictures, etc. are poorly developed, difficult to understand, and/or missing</td>
<td>Fair writing; generally conveys information, but would be far more effective with better organization and editing.</td>
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<td>Demonstrates a partial, incomplete understanding of the topic; makes a few relevant points, but misses many others</td>
<td>Treatment of literature is incomplete and not always accurately interpreted; use of supporting data is lacking or inaccurately applied</td>
<td>Only partially ties works to relevant concepts or theories; entirely descriptive and lacking in critical insight</td>
<td>Argument(s) undeveloped and often confused; conclusion is lacking, incomplete, and/or unconvincing</td>
<td>Very poor presentation; sloppy, poorly organized prose with poor or absent use of supporting charts, pictures, and the like</td>
<td>Poor writing that needs significant improvement; you may wish to consult with a writing instructor for ways to improve your writing.</td>
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<tr>
<td>Understanding of topic is seriously deficient; largely fails to address the issue(s) at hand</td>
<td>Little or no use of relevant literature or data to support arguments</td>
<td>No evidence of relevant concepts or theories in work; wholly descriptive with many errors and/or omissions</td>
<td>Little or no structure, argument, or conclusion</td>
<td>Completely inadequate organization and presentation of material on all counts</td>
<td>Extremely poor writing; see the instructor, TA, Reader, or writing instructor about addressing problems with your writing</td>
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Additional comments: