SCIENCE, TECHNOLOGY & SOCIETY 2400 / 005
Railroads and Mobility
CRN 1401

FALL SEMESTER, 2014
Wednesday, 2:00 PM– 3:50 PM
M-135

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Office Hours: Tuesday, 10:00 AM – 10:30 AM and 12:00 Noon – 1:00 PM;
Wednesday, 10:00 AM – 12:00 Noon and 1:00 PM – 2:00 PM; Thursday, 10:00 AM
– 10:30 AM; and by appointment

Preface:
This course is designed to be taught by faculty from the various disciplines
represented among the SPSU faculty. Each faculty member who proposes a course
chooses a topic from his or her own interest and training, and ideally a number of
sections on multiple topics will be offered each term. Each course, no matter what its
topic, must be built around the following master syllabus.

Course Description:
An interdisciplinary course exploring the development and integration, both
historical and contemporary, of science, technology, and society. The course seeks to
help students better understand the world in which they live, the broader implications of
their major course of study, and the complex social, ethical, and moral choices presented
by modern science and technology.
Particularly in the United States, the automobile has long been viewed as much
more than mere transportation. It has long served as a symbol of mobility and freedom.
Cars make up a major component of the national economy and car ownership – along
with home ownership – is a milestone in the attainment of the American Dream. Yet, the
automobile is undoubtedly the most destructive technology ever developed in the United
States, having killed far more people than all of America’s wars combined – 33,561 in
2012 alone. Despite the fatalities, and the time wasted in traffic jams, we consider cars to
be a necessary evil, essential to our lifestyle. But what about those people who do not
have access to “automobility,” as a result of financial hardship, physical impairment, or
other situations? There is ample evidence to suggest that individuals without cars have
fewer employment opportunities, lower socioeconomic status, lower rates of political participation, fewer educational options, restricted access to medical care, and even poorer diets – all because they are unable to get where they need to go.

Less than a century ago, few Americans owned cars, and relied instead on trains for their long-distance and even intra-city transportation. The railroads, even though privately owned, were a public means of transportation, in a way that cars are not. As such, they embodied the intersection of private enterprise and public policy, and therefore a collision between the rights of property owners and the rights of the general public. Railroads are not merely history, however – they are still very much a part of the economic and social life of the United States, and they hold the potential to resolve some thorny urban transportation issues.

This course will provide a brief overview of railway development in the United States, illustrating the ways in which cultural and, above all, political forces shaped the adaptation of British railway technologies and the development of the American railroad network and its attendant regulatory apparatus. This is a particularly appropriate subject for students in Atlanta, a city formerly known as “Terminus,” and one that was largely created by the railroads.

In a larger sense, however, a study of railroads – and, in particular, urban rail transit – provides an opportunity to discuss the ways in which we can exercise our collective societal responsibility to provide both geographic mobility and socioeconomic mobility to all of the people who live in the United States. Simply put, the question is this: The automobile notwithstanding, is there a better way to move people from Point A to Point B? A way that reduces the effect of humans on the planet’s limited resources and carrying capacity? A way that might lower the horrific death toll associated with the automobile? A way that might give the currently mobility deprived access to jobs, education, health care, the voting booth, and healthy food choices? A way that might enable us to fundamentally redesign our urban environment? Finally, by studying the ways in which the railroads have vastly increased public access to mobility, we can confront some thorny issues, such as: Why is mobility so important, and why do we need it, anyway? Are we really better off, because we are so mobile? How have we commodified mobility – that is, how have we turned mobility into a consumable product, like Corn Flakes or consumer electronics? Given our steadfast belief that more is always better, can or should we anticipate a future in which we have less, rather than more mobility?

Learning Outcomes:

After satisfactorily completing this course, students will be able to:
1. Identify and evaluate competing views and the information supporting them.
2. Formulate their own opinions on complex issues and to communicate their views clearly in both written and oral formats, and support their position with relevant evidence.
3. Recognize the ways in which science and technology have been shaped by, and have helped to shape, society and culture.
4. Apply STS concepts to the scientific disciplines and technologies relevant to their majors.
5. Participate effectively in multidisciplinary groups.

**Readings:**

All readings are available through GeorgiaVIEW Desire2Learn, and available at http://spsu.edu/d2l/. If you are unable to log into D2L, please inform the system administrator and the course instructor as soon as possible. The syllabus does not list the readings for each week, and these are also grouped into self-explanatory “folders” within Desire2Learn. Please keep in mind that some of the readings are more challenging than others, so you may need to re-read these assignments, employ a dictionary, etc.

**Class Policies:**

- Please refrain from private conversations in class—if you have a question, ask the instructor, not your neighbor.
- Turn off all cell phones, pagers, etc., before entering the classroom.
- **Any student using a cell phone or similar device during class (except to turn it off) will have his / her course grade reduced by one letter grade for each infraction.**
- Students will not be allowed to use any tobacco products (including chewing tobacco) while in the classroom.
- Tape recorders and calculators are not permitted, except under extraordinary circumstances, and only with the prior permission of the instructor.
- **If you intend to take notes with a laptop computers or other electronic device, then please talk to me ASAP.**
- Students may not, under any circumstances, work on material from any other course during class time, nor may they do their readings for this course, while in class.
- The ten-minute rule: Owing to the large number of students who consistently arrive late for class, and owing to the large numbers of students who leave class and then return, in order to use their cell phones, I will close and lock the door at ten minutes past the beginning of class time. No one will be admitted to the classroom after that point. **This also applies to students who leave during class – i.e., no “in and out” attendance.** If a student leaves the class after the first ten minutes, he / she will not be readmitted. If the instructor is late for class, students will be expected to wait for ten minutes after the beginning of class time (this is standard University policy). After ten minutes, they may leave, and class will be cancelled.
• All exams, quizzes, etc., will be given at the beginning of class. Students who arrive late to class will NOT receive additional time in which to complete these assignments.
• Once an exam, quiz, etc., has begun, students may NOT leave the classroom for any reason before they complete that assignment.
• If a student takes a quiz, and then leaves class prior to a discussion or lecture following the quiz, then he/she will receive a zero on that quiz.
• Pay attention to the withdrawal date – I will not authorize any withdrawals (with a “W”) after this date, except under extraordinary circumstances, that are clearly beyond the student’s control.
• Please do not request extra credit – each student is judged by the quality, and not the quantity, of their work.
• Any student who has a learning disability should see me as soon as possible.
• Emergency situation policy: If the University is closed, for any reason, then this class will not meet (obviously). If Cobb County Public Schools are closed for a weather or flu-related emergency, then this class will not meet. In the event of a widespread H1N1 flu outbreak, please stay home, and we will remain in contact via e-mail and GeorgiaVIEW Desire2Learn.
• By taking this class, you agree to abide by all of the conditions listed above, as well as all relevant SPSU regulations.
• If you do not agree with the policies listed above, then you should not take this course.

**Student Responsibilities:**

1.) Attend class
2.) Listen actively
   a.) Prioritize information
   b.) Take notes
   c.) Formulate questions
   d.) Contribute to discussions
   e.) Demonstrate interest and enthusiasm
3.) Invest 2-3 times outside of class (4-6 hours per week in addition to time spent in class)
   a.) Read the assignments
      i. Build your vocabulary – **use a dictionary**
      ii. Reread, if necessary
      iii. Take notes on the readings – mark up your books
   b.) Recopy notes
   c.) Outline notes
   d.) Integrate notes covering lecture, discussion, text, and supplemental readings
Study regularly

**Grading:**

Your final grade will consist of the following:

**Class participation** (10%) – Note that class attendance is NOT the same as class participation!

**Quizzes** (20%) – These quizzes, seven in all, on the dates listed below, will cover assigned readings for that week, as well as the material presented in class the previous week. I will drop the lowest quiz score, and the average of the remaining six quizzes will constitute the grade for this portion of the course.

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**Three papers:** Each of the three papers must conform to the following basic guidelines (additional details provided in class):

1.) They must be typed or word-processed, double-spaced, in 12-point font.

2.) You must avoid plagiarism at all costs. We will talk about this at greater length in class, but keep in mind that even inadvertent or unintentional plagiarism is unacceptable. The first time that I see any evidence of plagiarism in any student’s paper, I will invite the student to rewrite the paper to fix the problems, with the understanding that the maximum grade that the student can receive on the rewritten paper is 50 percent (i.e., a rewritten “B” paper will earn a 42.5, rather than an 85). The penalty for a second offense is an automatic grade of “F” in the course.

3.) All papers are due at the beginning of class on the day for which they are assigned. Any late paper will be penalized 10 points (one letter grade) for each day (or portion thereof) that it is late.

4.) STUDENTS MUST COMPLETE ALL THREE PAPERS IN ORDER TO PASS THE COURSE, EVEN IF THEY ARE TURNED IN LATE.

**First paper:** Wednesday, September 3 (15%) – Describe your own personal experiences, or the experiences of other people whom you know, with geographic mobility. How easy (or how difficult) is it to move in geographic space? Have there been times in life when that mobility has been enhanced or impaire? How does geographic mobility (and our cultural perceptions of mobility) relate to our cherished concepts of freedom and independence? Are all Americans entitled to geographic
mobility? Are there, potentially, any negative consequences associated with our culture of geographic mobility? Do you think that our access to geographic mobility should be increased and, if so, how might we as a society accomplish this goal? The paper must be approximately 1,000 words in length (about 3 pages), but no fewer than 750 words, nor more than 1,500 words.

Second Paper: Wednesday, October 1 (15%) – Describe your own personal experiences, or the experiences of other people whom you know, with socioeconomic mobility. How easy (or how difficult) is it for others to move in socioeconomic space? Have there been times in life when that mobility has been enhanced or impaired? How does socioeconomic mobility (and our cultural perceptions of mobility) relate to our cherished concepts of freedom and independence? Are all Americans entitled to socioeconomic mobility? Are there, potentially, any negative consequences associated with our culture of socioeconomic mobility? Do you think that our access to socioeconomic mobility should be increased and, if so, how might we as a society accomplish this goal? Finally, do you perceive any relationship between geographic mobility and socioeconomic mobility? The paper must be approximately 1,000 words in length (about 3 pages), but no fewer than 750 words, nor more than 1,500 words.

Third Paper: Wednesday, October 22 from ALL students, with in-class presentations scheduled for October 22, October 29, and November 5 (20%, half for the paper, half for the in-class presentation) – Each student will be assigned a city in North America or Europe. Briefly describe the history of that city’s rail transit system. The bulk of the paper should focus on the present-day operations of that city’s rail transit infrastructure. Some questions that you could address might include: Why was this particular system built (i.e., were there any alternatives to a rail-based mass-transit system)? How many people does the system carry, in absolute numbers, as a percentage of MSA (Metropolitan Statistical Area) population, and relative to other modes of transport? How expensive is the system to operate, both in absolute dollar / euro / pound / etc. terms, in terms of cost per rider, and relative to the overall SMSA population? How much of the cost of operation is funded by farebox receipts? Does this system make money? Who provides funding for the system? What types of positive externalities, if any, result from the operation of the mass transit system? Is this system effective at maximizing geographic mobility? Is this system effective at maximizing socioeconomic mobility? Finally (and this is an important part of your paper), does this system provide any lessons for the people of Atlanta? Of course, you need not answer all of these issues, and you might want to emphasize others, not listed above.

In addition to writing the paper, each student will present his/her findings to the rest of the class in a presentation, approximately fifteen minutes in length, on one of the following dates: October 22, October 29, or November 5.

This paper will be considerably more involved than the first two, and must conform to the following additional guidelines (the ones listed earlier still apply):
1.) The paper must be approximately 1,500 words in length (a little over five pages), but no fewer than 1,000 words, nor more than 2,500 words.
2.) The paper must be based on at least six RELIABLE sources, and no more than half of your sources may be internet-based (although you should keep in mind that many “text” sources, such as newspaper and journal articles are available on-line, but are not considered specifically web sources – the key test is, is there a paper-based source, somewhere, that replicates and backs up what you are reading on the computer screen?)
3.) You must cite your sources, either parenthetically, or with endnotes, or with footnotes.
4.) You must provide a bibliography (a “works cited page”) in a standard, consistent format (Chicago Manual of Style, MLA, APA, etc.) – note that a bibliography is NOT the same as footnotes, endnotes, or parenthetical source citations.

Final Project, in-class presentations scheduled for Wednesday, November 12 and Wednesday, November 19 (20%) – The final project includes three assessment components. FIRST, I will assess your oral presentation (one-half of the project grade, or 12.5% of the course grade). SECOND, each member of each presentation team will assess every other member of that presentation team, using a questionnaire that I will provide (one-fourth of the project grade, or 6.25% of the course grade). THIRD, each audience member will assess each presenter, using a questionnaire that I will provide (one-fourth of the project grade, or 6.25% of the course grade).

I will divide the class into six teams of 4-5 students apiece. Every member of each team will have a different major or prospective major, and as such each team member will be expected to contribute his / her area of expertise to the project team. Each team will design a new transportation system for the city of Atlanta, one that involves rail transit to some degree. Of course, each team will need to explain to the audience (the remainder of the class) the layout and technological specifications of that new rail-transit system – i.e., what kinds of trains will run and where they will run. However, the team must also address issues such as funding and the potentially disruptive effects associated with construction (including environmental concerns, the displacement of neighborhoods, etc.). But don’t stop there! Each team will want to examine whether it is advisable (or even possible) to remake the physical environment of Atlanta to make it more conducive to public mobility, rather than private (car-based) mobility. This could include the use of zoning or other mechanisms to create high-density or mixed-used development, pedestrian-friendly zones, etc. Of course, “public” mobility need not be limited to urban rail transit, and might include better sidewalks, bike lanes or bike paths, ride-sharing options, or other mechanisms. Ultimately, and this is something that each group MUST discuss, the plan for Atlanta’s new geographic mobility must include an assessment of the effects of that plan on socioeconomic mobility.

Additional details on the course project will be provided later in the semester.
NOTE: Instructor reserves the right to use the scheduled final exam period for this course for the purpose of making up any incomplete student presentations. In the unlikely event that that becomes necessary, students will be required to attend, and the usual penalties for absences will apply.

Grading Scale:

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<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>89.5%-100%</td>
<td>A</td>
</tr>
<tr>
<td>79.5%-89.4%</td>
<td>B</td>
</tr>
<tr>
<td>69.5%-79.4%</td>
<td>C</td>
</tr>
<tr>
<td>59.5%-69.4%</td>
<td>D</td>
</tr>
<tr>
<td>Below 59.5%</td>
<td>F</td>
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</tbody>
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Make-up Policy:

Make-up assignments are inherently unfair to all concerned, and I try to avoid them whenever possible. However, students with a legitimate excuse (serious illness, death in the family, etc.) may certainly make up a missed assignment. If you anticipate missing ANY assignment, you must contact me prior to the scheduled date and time of this assignment (e-mail is preferable in this case). Failure to do so will result in an automatic grade of zero for that assignment. Make-up assignments will only be given to those students who can document a serious medical emergency or personal crisis.

Academic Misconduct:

Academic misconduct (i.e., cheating) is not just unfair to your fellow students; it also deprives you of the opportunity to learn the information and, more importantly, the knowledge skills that will serve you long after you have left college. At its most basic level, all exams are closed book, and no books, notes, or other study aides will be allowed during exams. If you are unsure as to the precise meaning of academic misconduct, then you should discuss the issue with me. All students should be aware that I might use plagiarism detection and prevention services (such as turnitin.com) that may archive examples of student work. Any student who considers such practices to be a violation of fair use doctrine should not take this course.

SPSU has an Honor Code and a new procedure relating to when academic misconduct is alleged. All students should be aware of them. Information about the Honor Code and the misconduct procedure may be found at [http://spsu.edu/honorcode/](http://spsu.edu/honorcode/).
Schedule of Readings and Assignments:

(1) August 13  
Class introduction – no readings or other assignments

(2) August 20  
*Railroads: Images and Perceptions*  
QUIZ  
Readings:  
- Thomas T. Taber and Mark Reutter, “Century Gone”  
- Barbara Schmucki, “Fashion and Technological Change: Tramways in Germany after 1945”

(3) August 27  
*Perceptions of Reality: Industrial Statesmen or Robber Barons?*  
QUIZ  
Readings:  
- Frank Norris, *The Octopus: A Story of California*  
- Richard Orsi, *Sunset Limited*

(4) September 3  
**First Paper due**

(5) September 10  
*Boys and Girls: Gender and the Railways*  
QUIZ:  
Readings:  
- Linda Niemann, “Hospital Yard”  
- Linda Niemann, “Railroad Women”  
- Lucy Taksa, “’About as Popular as a Dose of Clap’: Steam, Diesel and Masculinity at the New South Wales Eveleigh Railway Workshops”  
(6) September 17  

**Race and the Railroads**  
**QUIZ**  
**Readings:**  
- Steven G. Collins, “Progress and Slavery on the South’s Railroads”  
- Theodore Kornweibel, Jr., “Railroads and Slavery”  

(7) September 24  

**Externalities: What do Things Really Cost?**  
**QUIZ**  
**Readings:**  
- Leland H. Jenks, “Railroads as an Economic Force in American Development” (1944)  
- Robert W. Fogel, “The Union Pacific Railroad” (1960)  
- Stanley Engerman, “Some Economic Issues Relating to Railroad Subsidies” (1972)  

(8) October 1  

**Second Paper due**  

October 2  
Last day to withdraw with a “W” rather than a “WF”  

(9) October 8  

**Urban Rail Transit – Is It Worth It?**  
**QUIZ**  
- John Semmens, “Are Benefits of Light Rail Worth Sacrifices of Forgone Bus Service?”  
- Eric Mann, “A New Vision for Urban Transportation”  
Welcome to Atlanta – The City Too Busy to Plan

QUIZ

Readings:
- Larry Keating, *Race, Class, and Urban Expansion*
- Kevin M. Kruse, *White Flight: Atlanta and the Making of Modern Conservatism*
- Christopher R. Bollinger and Keith R. Ihlanfeldt, “The Impact of Rapid Rail Transit on Economic Development; The Case of Atlanta’s MARTA”
- Keith R. Ihlanfeldt, *Rail Transit and Neighborhood Crime: The Case of Atlanta, Georgia*

Third Paper due from ALL students

(12) October 29 Student oral presentations for Third Paper

(13) November 5 Student oral presentations for Third Paper

(14) November 12 Final Project presentations, Groups 1-3

(15) November 19 Final Project presentations, Groups 4-6, last day that this class will meet

December 1 Last day of Fall Semester classes

There is no final exam scheduled for this course, but the instructor reserves the right to use the scheduled final exam period for this course for the purpose of making up any incomplete student presentations.