## DRAFT Syllabus (1/24/18)

HNRS 353-003 Infrastructure  
Spring 2018  
Wed 1:30-4:10, Enterprise 174  

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### Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>Jan 24</td>
<td>Self intros; course overview; group organization (energy, transportation, water/wastewater, communication, defense); 1st writing assignment; form groups and develop individual group assignments</td>
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<tr>
<td>Jan 31</td>
<td>Private meeting with instructor to evaluate 1st writing assignment, set course goals.</td>
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<td>Feb 7</td>
<td>Infrastructure and societal development</td>
<td>TBD</td>
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<td>Feb 14</td>
<td>Infrastructure and the future</td>
<td>TBD</td>
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<td>Feb 21</td>
<td>Group meetings with instructor for “rough draft” presentations</td>
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<tr>
<td>Feb 28</td>
<td>Where infrastructure comes from and how it works today – group presentations, new group assignments</td>
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<td>Mar 7</td>
<td>Private meetings with instructor to evaluate written work and presentation, initial discussion of term paper.</td>
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<td>Mar 14</td>
<td>Spring break – no class</td>
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<td>Mar 21</td>
<td>Future infrastructure, group work on new presentations</td>
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<td>Mar 28</td>
<td>Group meeting with instructor for “rough draft” presentations</td>
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<td>Apr 4</td>
<td>Group presentations – the future of infrastructure</td>
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<td>Apr 11</td>
<td>Private meeting with instructor to evaluate written assignment and presentation, develop term paper</td>
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<td>Apr 18</td>
<td>Private meeting with instructor to develop term paper (as needed)</td>
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### Writing Assignment 1 – Due Jan 31

Note: You’ll discuss this paper individually with the instructor. The location of the meeting will be announced and may NOT be in the classroom.

The first assignment is a 500-word essay based on the infrastructure component you have selected for the first class. Address each of the following six questions:

1. What is it?
2. What is its function?
3. How well does it work?
4. What are the criteria by which you judge how well it works in question 3?
5. Who created it (i.e., which company, government body or other entity)?
6. How is it paid for?

### Writing Assignment 2 – Due Feb 28

The purpose of this assignment is to allow you to convince the instructor that you have read and understood the assigned reading. Please write a 500-word report in which you pick one of the assigned readings and:

1. Explain what the author does in the piece.
2. Explain how the piece relates to the developments in class so far.

No bibliography is needed but be sure to identify the piece you are discussing.

### Course Description

This course will focus on innovation in infrastructure. The infrastructure we use every day has huge impact on our quality of life – where we live, shop, study, worship, and have fun. Innovations are coming on strong: Uber and Lyft, Car2Go, Zipcar, Hyperloop, high speed rail, E-ZPass, drones for land, air and water, Apple Pay, Android Pay, location tracking, blockchain – the list goes on.
Infrastructure has physical and digital dimensions. Physical infrastructure includes roads, streets, airports, water systems, electric power plants and distribution networks. Digital infrastructure includes systems for communications, payment, identification, and location.

The class will focus on where innovation in infrastructure comes from. When is it good? Bad? How do we judge? How to we encourage it? Block it? Who decides? How do we deal with legacy systems? How do we pay for it? What are the new industries and careers being created?

Pedagogical Approach

The course will emphasize individual research and the development of communication skills. You will have a chance to (a) present your work as part of a group, (b) publish your work online, (c) write short essays, and (d) write a longer report. Students will meet individually and in small groups with the instructor.

Research Teams

During the first class we will split the class into five research teams of 5-6 people each. Each team will choose a topic for later presentation from a list prepared by the instructor, and individual members of the team will be assigned specific areas to cover. The general topic will be: “How infrastructure works and how it got to be that way.” Teams might discuss different infrastructure sectors, like power, transportation, water and wastewater, communications and defense. After the team topic is approved by the instructor, individuals in the team will take on specific assignments – for example, if the general team topic is transportation, one member may discuss highways, another public transport, another train systems, etc. Each team will meet privately with the instructor to present a “rough draft” version of its report before it presents its report to the class as a whole. Each student will meet privately with the instructor after the presentation for discussion.

The team will decide how its presentation to the class will be made, but all presentations must be in PowerPoint. In addition, each individual member of the team will write a 500-word paper describing his or her individual topic. These papers will be discussed, along with the presentation, in a private meeting with the instructor as scheduled.

Each student in the class will be asked to turn in a list of questions or comments (one per group presentation) at the end of the class period in which presentations are made.

Later in the term, a new set of teams will go through a similar process for presentations on the topic “What is the future of infrastructure?”

Term Paper

The part of the course will be taken by the development of a term paper. These will be done individually, and will be written on a topic to be chosen by the student and approved by the instructor. Students will meet individually with the instructor to develop their papers, and the papers will be due the last day of class. Further details will be given in a future handout.
Student Portfolio

On the last day of class, each student will hand in a portfolio consisting of all written (and/or revised) work and the term paper.

Writing Requirements

All written work must be done on a word processor, double-spaced, and printed on one side only.