GENERAL INFORMATION

Listing: PUBP 777
Time/Location: Thursdays, 7.20-10.00pm / TBD
Instructor: Dr. Christine Pommerening
Phone: 703-993-3132
E-mail: cpommer@gmu.edu (preferred)
Office: FH677; MS 3B1
Office Hours: Thursdays, 04:00 - 05:00 pm or by appointment (preferred)

COURSE DESCRIPTION

This course introduces infrastructure development, security, and resilience as a policy field, examines the governance framework, and considers foundations in organizational and institutional theory.

Modern societies with their interdependent social, technical, and political systems are subject to a variety of risks. Risks are typically viewed as a combination of threats, vulnerabilities, and consequences, and expressed as a function of probability and severity. Infrastructures are considered critical if they are essential to the functioning of economy and government, e.g. electric power, transportation, and public health.

The provision of infrastructure services requires large public and private investments, and so does securing the physical assets and cyber systems. Resilience, or the ability to adapt to and recover from disruption, is now the primary strategic policy objective in the U.S.

While the point of reference for this course is the U.S., comparative analyses of policies on the international level will be included.

LEARNING OUTCOMES

Knowledge and Understanding

1. Distinguish different concepts and approaches of risk and resilience
2. Understand the core technical, operational, and managerial dimensions of infrastructures
3. Analyze legislative and regulatory developments in critical infrastructure security
4. Demonstrate in-depth understanding of at least one critical infrastructure sector

Skills and Abilities

1. Write policy briefs on infrastructure development, security, and resilience
2. Perform basic risk assessment and benefit-cost analysis
3. Evaluate information sources on the legislative and regulatory process
4. Apply knowledge of critical infrastructure sectors to explain cause and effect of service disruptions
REQUIREMENTS

**Risk Assessment Exercise (25%)**

Using a simplified risk assessment framework, students will describe a network or system of their choice. The goal is to appreciate strengths and weaknesses of risk management concepts and policies, not assessing the actual risks to a system. The reports should be no longer than five pages double-spaced.

*The policy brief is due by the day indicated on the schedule by noon per email.*

**Policy Brief (25%)**

A policy brief is designed to provide background, options, and possibly, advocacy on a particular policy issue. In this case, it should include a description of the student’s chosen infrastructure sector, a particular problem, and the policy process (actors, legislation/regulation, budgets, etc.) leading to a recommendation how to address the particular problem. The brief should be no longer than five pages double-spaced.

*The policy brief is due by the day indicated on the schedule by noon per email.*

**Research Paper and Presentation (30%)**

A research paper allows more in-depth examination of a particular question or problem. The research paper should include a bibliography of literature covered, interviews (optional), and other sources consulted. It should not exceed 12 pages double-spaced (not including bibliography, tables or figures) and should be prefaced by a one-page executive summary. The presentation should not exceed 15 minutes (not including Q&A).

*The research paper is due by the day indicated on the schedule by noon per email.*

**Participation (20%)**

The criteria include attendance, participation in class discussion, ability to listen and reflect, efforts to build on the contributions of others, thoughtfulness of comments, and other contributions made to the creation of a mutual learning space. In particular, students should be ready to discuss general or sector-specific infrastructure developments at the beginning of each class.
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<td>01/21</td>
<td>Introduction and Overview</td>
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<td>Infrastructure Analysis: Assets, Systems, Functions, Interdependencies</td>
<td>Rinaldi et al.</td>
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<td>02/04</td>
<td>Risk and Risk Analysis</td>
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<td>5</td>
<td>02/18</td>
<td>U.S. Infrastructure Policy: History and Current Planning Framework</td>
<td>Brown (ch.1-5); NIPP, SPP</td>
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<td>International Infrastructure Development: Framework and Challenges</td>
<td>Kreimer</td>
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<td><strong>-Risk Assessment Due by Sunday-</strong></td>
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<td>7</td>
<td>03/03</td>
<td>Selected Problems and Case Studies: 1. Infrastructure Investments</td>
<td>Litan; Moore</td>
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<td>Selected Problems and Case Studies: 2. Information Sharing</td>
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<td>Cybersecurity: Law, Economics, and Policy</td>
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<td>Managing Critical Infrastructures: Normal Accident Theory</td>
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<td>Managing Critical Infrastructures: High Reliability Organizations</td>
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<td>Paradigm Shift: Towards Resilience and Sustainability</td>
<td>Longstaff Wildavsky</td>
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READING LIST

**Required (*) and Recommended Book and Reports:**


**Required (*) and Recommended Articles and Book Chapters:**


Other Sources

Department of Homeland Security Daily Infrastructure Report

Executive Order 13636 and Presidential Policy Directive 21 Documents

North American Electric Reliability Corporation Critical Infrastructure Protection Standards

National Institute of Standards and Technology 800 Series
http://csrc.nist.gov/publications/PubsSPs.html
GENERAL GUIDELINES AND POLICIES

Grading

All written and oral assignments will be judged using the GMU system for grading graduate courses as laid out in the university catalog. Letter grades earned for each assignment will be added numerically (4.00 for A, 3.67 for A-, etc.), and the average will be used to determine the final grade, which allows for the grades of A, A-, B+, B, B-, as well as C, F, and IN.

For this course, the A grade is reserved for sustained outstanding performance in all aspects of the course. A- and B+ grades are assigned to those who demonstrate mastery of the course readings and above average performance in all aspects of the course. The B grade indicates average performance. The B- grade is earned by one who produces a marginal quality of work, while the C grade denotes unacceptable quality for graduate level work. No extra credit will be given.

Written assignments are weighted as follows: Content (e.g., accuracy, relevance, completeness) 40%; Structure (e.g., organization, argumentation) 30%; and Execution (e.g., format, grammar, style) 30%.

Assignments that are submitted late will lead to a grade reduction, up to being marked as missed entirely. Unacceptably frequent periods of absence (missing more than one class) will also result in a grade reduction.

Special Needs

If you are a student with a disability and need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 993-2474. All accommodations must be arranged through the DRC.

Honor Code

George Mason University shares in the tradition of an honor system that has existed in Virginia since 1842. The Honor Code is an integral part of university life. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations.

This course is subject to all policies of the George Mason University Honor Code as laid out in the university catalog. As stated above, the provisions regarding plagiarism are particularly relevant. The best way of avoiding plagiarism charges is rigorous and meticulous documentation and, to the extent possible, retention, of all sources that are used for preparing papers and presentations. While it is not necessary to cite a source for every single statement, it is expected that students reference major sources in a way that allows fellow students and other readers to identify them. This means e.g. when citing an author in the text, the cited work needs to be referenced in full in the bibliography, and the bibliographic citations need to be complete and verifiable.

Policy on Plagiarism

Plagiarism is the use of another’s words or ideas presented as one’s own. It includes, among other things, the use of specific words, ideas, or frameworks that are the product of another’s work. Honesty and thoroughness in citing sources is essential to professional accountability and personal responsibility. Appropriate citation is necessary so that arguments, evidence, and claims can be critically examined.

The faculty of the School of Policy takes plagiarism seriously and has adopted a zero tolerance policy. Any plagiarized assignment will receive an automatic grade of “F.” This may lead to failure for the course, resulting in dismissal from the University. This dismissal will be noted on the student’s transcript. For foreign students who are on a university-sponsored visa (e.g. F-1, J-1 or J-2), dismissal also results in the revocation of their visa.

To help enforce the SPGIA policy on plagiarism, all written work submitted in partial fulfillment of course or degree requirements must be available in electronic form so that it can be compared with electronic databases, as well as submitted to commercial services to which the School subscribes. Faculty may at any time submit student’s work without prior permission from the student. Individual instructors may require that written work be submitted in electronic as well as printed form. The SPGIA policy on plagiarism is supplementary to the George Mason University Honor Code; it is not intended to replace it or substitute for it.