Course Syllabus

About this Course

Course Prerequisites

There are no prerequisites for this course.

Required Text

1. Rosenhead, Jonathan, and John Mingers. 2001. *Rational Analysis for a Problematic World Revisited: Structuring Methods for Complexity, Uncertainty and Conflict.* 2nd Edition. New York: John Wiley and Sons. ISBN-13: 978-0471495239

Other recommended readings, as well as sources for additional information will be listed online and in relevant lessons.

Course Requirements

- "Attendance" and participation in all course activities and group work
- Completion of written assignments
- Completion of assigned group project

Course Organization

This course has two parallel tracks, one focuses on introducing core concepts, methods, infrastructure systems and other on developing familiarity with the MIPM Program, the faculty and students—beginning to develop "community."

The course is organized with three modules:

- Module 1: the first 3 classes focusing on the framework concepts and methods;
- Module 2: the next 6 lessons cover the basic infrastructure systems; and
- Module 3: in the final lesson we will integrate what we have learned, returning to the framework concepts to draw conclusions about the importance and role of infrastructure planning in creating and maintaining healthy and sustainable societies.

The course is organized with the first three lesson focusing on the framework concepts and methods, followed by 6 lessons covering the basic infrastructure systems. In the final lesson we will integrate what we have learned, returning to the framework concepts to draw conclusions about the importance and role of infrastructure planning in creating and maintaining healthy and sustainable societies.

Because this is an introductory course, you will get an overview and introduction to each of topics that will be covered in individual classes, and some of you may want to get into more depth in one or more of

these topics. The term paper is an opportunity to explore more thoroughly a specific topic that interests you. And there will be opportunities in some discussions (on the Discussion Board) to share more explicitly your views or questions.

About the Lessons

Each lesson includes readings from online sources or the required texts. Some lessons also include an assignment such as a short analytical writing response, an online discussion, or work toward the research project.

Lesson 1: Introduction and Core Concepts

In this first lesson we will review the course as a whole and introduce the overall design of the MIPM program. We will define infrastructure and examine the history of how infrastructure systems have developed over time. In this first week we will also discuss goals for creating good communication among students during their engagement in this program. We will begin with exercises that help students get to know one another, including what they each seek from and bring to the program.

We will also introduce and discuss the core concepts related to infrastructure and their management, including their vulnerabilities. We will introduce the vulnerabilities that result from climate change, natural hazards/disasters and man-made threats, and other vulnerabilities that affect infrastructure.

Lesson 2: Methods and Applications

In Lesson 3, we will introduce the key concepts that will be addressed in the methods courses—what they are and how they fit—including finance, policy frameworks, resiliency, and risk assessment and continuity. The effects of climate change on infrastructure systems and how these methods are used to address them will also be explored.

Lesson 3: Systems Theory

This lesson takes you through a more in depth focus on one of the most important theories for infrastructure planning and management: systems theory. In this course and throughout the master's program, you will be prompted to consider the ramifications of your observations and research about infrastructure from the point of view of systems theory.

Within this context of program core concepts and methods and applications, the following weeks will focus on the key infrastructure systems.

Lesson 4: Water Systems

In Lesson 4, we focus on water as an important infrastructure system. This includes describing the elements that comprise a water supply system, issues/problems associated with water resource management, effects of climate change, and tools for water planning and management.

Lesson 5: Energy Systems

This lesson's focus on the energy infrastructure systems will begin with an overview of historical and current energy trends and the future of energy systems regarding global trends with a particular emphasis on impacts of climate change and emerging energy technologies.

Lesson 6: Transportation Systems

We are introduced to transportation systems this week. Beginning with describing the elements that make up transportation infrastructure, we focus on how these systems function, the effects of climate change and of sustainability principles and related policy implications.

Lesson 7: Food Systems

In Lesson 7, we will define the food system, including the links to the system, the players, and how food policy is evolving (the tension between political and technical frameworks), and resiliency in food systems.

Lesson 8: Public Health and Disease Control

This lesson focuses on introducing the public health system, particularly focusing on disease control and emergency systems. We will gain an understanding of the components of public health, epidemiology as a basic foundation to public health and the importance of health in maintaining a resilient society.

Lesson 9: Communications and Cyber Security

This lesson's focus is on communications and cyber infrastructure systems—examining advances to communications and their implications for addressing natural and man-made hazards, and gaining a basic understanding of cyber security as it affects infrastructure systems.

Lesson 10: Wrap Up and Conclusions

We will examine and discuss connections among the systems and relationships to methods and core areas. We will develop a framework for more in-depth study of the systems and methods, sharing insights from the student essay presentations and reflections from the course.

About the Assignments

The course begins by requiring each student to post an introductory PowerPoint presentation and responding to the posts of others (Icebreaker #1), to help us get to know each other as we begin this MIPM program.

The assignments in this course consist of the following:

- postings to 6 required discussion forums and 2 current events forums;
- 2 Icebreaker exercises;

- 3 short written analytical assignments;
- 1 research project, with 4 deliverables;
- and a short group project during Lesson 10.

Assignments are weighted as shown in the table below.

Assignment	Percent/ Points	Description
Class participation	140 points 35%	- Active participation in 6 required Discussion and 3 Current Events Forums (90 points) - Participation in 2 Icebreaker Exercises and Lesson 10 Small Group Exercise (50 points)
Short written assignments	120 points 30%	Three written assignments (40 points each) 2-3 pages each, focusing on an exercise or an analysis of readings and discussion items
Research project	140 points 35%	Deliverables of project consist of research topic (10 points) - outline that includes problem statement, approach, and - initial resources (20 points 8-10 page Research paper (100 points) and 1- - page summary posted in forum (10 points)
Total	400 points 100%	

Discussion and Current Events Forums

You are required to post to six (6) discussion forums in this course. The required forums are

- Discussion forums found in six lessons (Lessons 1,2,5,7,8,9) during the course; and
- Sign up and post to one Current Events Forum (Lessons 3 - 9) and respond to at least 2 other posts.

The discussion topics will be noted within the forums online. You will be required to make a substantive post (usually 200-300 words) by responding to specific questions, offering opinions and insights based on the assigned readings, your own work experience, or outside readings related to the discussion topic.

You must also read the postings of all of your classmates during that week. Where noted, you are required to respond to other students' posts.

Written Analytical Assignments

In the short analytical writing assignment you will write a short (2-3 page) paper on assigned topics.

Research Project

Because an introductory course can cover only a limited number of topics at a relatively general level, you will have the opportunity to go into a topic of your choice in more depth through a short research project.

The main deliverable is your research paper, which should be 8–10 pages long, double-spaced, in 11- or 12-point font. This research paper is based on the lessons (including lectures and class discussion/activities), course readings and resources, and further research.

The research project includes other components that will help you develop, revise, and share your research paper.

The four assignments that comprise your research project will count towards 35% of your course grade, as shown below. See the Research Project Instructions area for a complete description of these assignments.

Short Group Project

In Lesson 10, you will work with a small group to summarize key questions about and themes in this course and will post these in a forum to share with the entire class.

Grading and Assessment

You will receive a numeric grade for this course. The numeric grading system used by the University of Washington relies on a decimal scale between 1.7 (low) and 4.0 (high).

For graduate courses, grades below 1.7 are recorded as 0.0 and no credit is earned. A minimum of 2.7 is required in each course that is counted toward a graduate degree. A 3.0 cumulative average in graduate work is required to receive a graduate degree.

Grading Criteria
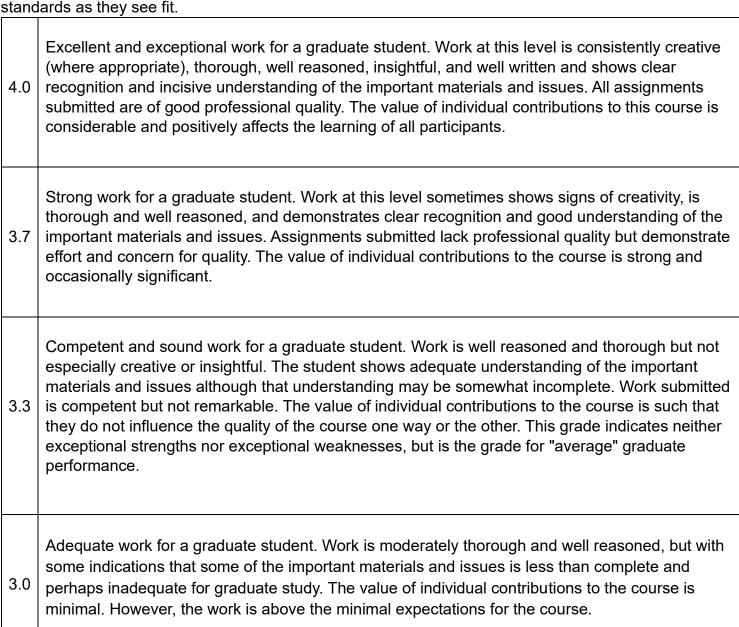
Grades on the assignments will be based on

- addressing all parts of each assignment;

- providing adequate treatment of each part of the assignment (for example, if an item calls for an explanation of factors involved, an answer that lists factors without explaining them will be inadequate);
- relating your work on the assignments to course readings, lessons, discussions, or supplementary readings as appropriate;
- and documenting your sources (that is, providing citations to published material, government documents, personal interviews).

See the Research Project Instructions area for a grading rubric for the outline/bibliography and for the research paper.

Assignments that are partially completed will not be graded.

Here are descriptions of the criteria for your performance in this class. If you meet these criteria for all your work, you will be graded appropriately. Instructors may "interpolate" grades between these standards as they see fit.

4.0	Excellent and exceptional work for a graduate student. Work at this level is consistently creative (where appropriate), thorough, well reasoned, insightful, and well written and shows clear recognition and incisive understanding of the important materials and issues. All assignments submitted are of good professional quality. The value of individual contributions to this course is considerable and positively affects the learning of all participants.
3.7	Strong work for a graduate student. Work at this level sometimes shows signs of creativity, is thorough and well reasoned, and demonstrates clear recognition and good understanding of the important materials and issues. Assignments submitted lack professional quality but demonstrate effort and concern for quality. The value of individual contributions to the course is strong and occasionally significant.
3.3	Competent and sound work for a graduate student. Work is well reasoned and thorough but not especially creative or insightful. The student shows adequate understanding of the important materials and issues although that understanding may be somewhat incomplete. Work submitted is competent but not remarkable. The value of individual contributions to the course is such that they do not influence the quality of the course one way or the other. This grade indicates neither exceptional strengths nor exceptional weaknesses, but is the grade for "average" graduate performance.
3.0	Adequate work for a graduate student. Work is moderately thorough and well reasoned, but with some indications that some of the important materials and issues is less than complete and perhaps inadequate for graduate study. The value of individual contributions to the course is minimal. However, the work is above the minimal expectations for the course.

2.7	Borderline work for a graduate student. Work barely meets the minimal expectations and may occasionally fall below them. Understanding of the important materials and issues is incomplete or has not been demonstrated. There is little positive value in the individual contributions to the course and there may even be negative effects on the overall learning. Consistent overall performance at this level would be below that of adequate graduate student performance.

The following table is a conversion chart that you can use to convert any grade you receive to the University of Washington 4.0 grading system:

Per Cent	G. Point	Letter
100-99	4.0	
98-97	3.9	
96-95	3.8	A
94-93	3.7	
92-91	3.6	
90	3.5	
89	3.4	
88	3.3	
87	3.2	
86	3.1	
85	3.0	B
84	2.9	
83	2.8	
82	2.7	
81	2.6	
80	2.5	
79	2.4	
78	2.3	

77	2.2	
76	2.1	
75	2.0	C
74	1.9	
73	1.8	
72	1.7	
71	1.6	
70	1.5	
69	1.4	
68	1.3	
67	1.2	
66	1.1	
65	1.0	D
64	.9	
63	.8	
62	.7	
61	.7	
60	.7	

Academic Honesty

Of course, we expect work turned in by you to be done by you. Just for clarity, however, plagiarism is defined as the use of creations, ideas or words of publicly available work without formally acknowledging the author or source through appropriate use of quotation marks, references, and the like. Plagiarizing is presenting someone else's work as one's own original work or thought. This constitutes plagiarism whether it is intentional or unintentional. The University of Washington takes plagiarism very seriously. Any student who is uncertain whether his or her use of the work of others constitutes plagiarism should consult the course instructor for guidance before formally submitting the course work involved. At

minimum, visit the following site, which articulates and expands on University policy in this regard: https://depts.washington.edu/grading/pdf/AcademicResponsibility.pdf

Plagiarism is not acceptable, so we advise each of you to read a style manual in order to learn how to avoid it. There are also style sheets and websites that may guide you, but you, as the author of your paper, are ultimately responsible for this. Anyone found to plagiarize will be given a failing grade for this assignment and their case reported to the Associate Dean for Academics and Operations for formal review.

Study Tips

Exercises from this class use are open-book, so no memorization is involved in the course. The course is designed for you to learn from readings and from completing the assignments. Some hints:

- Pace yourself.
- Set aside time each week that is dedicated exclusively to the course.
- Do the readings and explore the topic using the link(s) in the lesson.
- Begin assignments as soon as possible after completing the readings. Use all available resources, including your fellow classmates.
- For the assignments, select an infrastructure system that you have a real interest in. Systems close to home may be easier in term of obtaining information.

About the Course Developer

Marty Curry, AICP

Marty Curry is an affiliate instructor in the University of Washington's Urban Design and Planning Program and an independent planning consultant (Curry Consulting) to local government, community, and non-profit organizations. She brings over 30 years of experience as a professional planner, including 12 years as the Seattle Planning Commission's Executive Director. Her work has focused on developing and engaging the community in policy development and planning processes on a wide range of planning issues. She has taught classes in the Urban Design and Planning Department/Interdisciplinary Undergraduate program and has assisted with graduate courses for ten years. Ms. Curry has also been a consultant to foundations, community-based heath and community development organizations, and local government transportation agencies.