Risk Analysis & Environmental Management
OIDD-761 / Fall 2020
Monday and Wednesday 10:30am – 11:50am EST
This course will be taught online in fall 2020.

Instructor: Dr. Carolyn Kousky
Office hours: Thursday 4:15 – 5:30pm (send an email to the course email address to schedule a 15-minute virtual meeting slot)

TA: Emily Snow

Course Email: oidd761.2020@gmail.com
- All questions about the course, including assignments, should be sent to the course email address.
- Requests for an office hours slot should be sent to the course email address.

Course Description
This course will introduce students to concepts in risk governance. We will delve into the three pillars of risk analysis: risk assessment, risk management, and risk communication. The course will spend time on risk financing, including insurance markets. There will be particular emphasis on climate risk management, although the course will also discuss several other examples, including management of environmental risks, pandemics, and terrorism, among other examples. The course will cover how people perceive risks and the impact this has on risk communication and management. We will explore public policy surrounding risk management and how the public and private sector can successfully work together to build resilience, particularly to changing risks.

Notes on Virtual Learning
Students are not allowed to download and repost or share course videos anywhere. Doing so is a violation of the Code of Academic Integrity.

Lectures: The class will be a hybrid of asynchronous and synchronous learning. Students are expected to participate fully in both.

Mondays we will have asynchronous lectures. You can watch these videos anytime between when they are posted the Friday before class and the end of the day on Monday. Students may choose to watch them during the regularly scheduled class time of Monday 10:30 – 11:50 EST. Watching these videos is mandatory.

Wednesday lectures will be synchronous. Students are required to virtually attend Wednesday online at the scheduled class time of 10:30am EST – 11:50EST. Attendance at the lecture will be
taken; please be on time. You will use the chat function to indicate when you have a question or comment. This will be moderated by the TA and at the appropriate time you will be asked to un-mute and ask your question for the class. Please keep your video on through the entire class.

**Readings**: Each day has required readings. You are required to finish the readings before the scheduled class day on which they are listed. Material from the readings may be necessary for completing online discussion assignments or for the weekly quizzes.

**Course Grading**

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<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tr>
<td>Weekly quizzes</td>
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<tr>
<td>Weekly discussion postings</td>
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<tr>
<td>Mid-term blog/oped</td>
<td>25%</td>
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<tr>
<td>At-home final</td>
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**Assignments**

**Weekly Quizzes**: Each week there will be a mandatory quiz. Each weekly quiz needs to be taken sometime on Thursday. Each quiz will be available on Canvas for 24 hours, from Wednesday midnight until Thursday midnight. Each quiz will be 1 - 5 questions and will draw on the lectures and readings of the week. To succeed on the quizzes, you must do the readings and attend the lectures. Quizzes are open-note but they do have a time limit—if you have to look up every answer, you will not have time to finish. You are not to share quiz questions with other students in the course after you take the quiz. Students will not have the option to take quizzes late or to make-up missed quizzes. One missed quiz should not substantially impact your total quiz grade but multiple missed quizzes or many poor performances will lower your grade.

**Weekly discussion postings**: Students will be broken into 2-3 groups for online discussions. Each week, a discussion prompt will be posted on Monday. Students should respond to the prompt sometime before the end of the day Friday. They should also respond to at least 2 other posts of classmates. Students will be graded on both their participation in the discussion (responding to the prompt and responding to at least 2 classmate responses) and will be graded on the thoughtfulness of their responses. Responses to the prompt and to classmates that demonstrate the student has read the course readings, has attended lectures, and is thinking critically about the discussion will receive higher grades. The initial response to the prompt should be target roughly 250-300 words. The responses to peers can be between 50 and 150 words. Discussions will close at midnight Friday and no further responses will be allowed. Students will not be allowed to make up discussion if they fail to post during the week.

**Mid-term blog/oped**: Each student will write one blog or oped on a topic relevant to the course. The blog/oped should be between 600 and 1,000 words. Please note that substantially
longer pieces will be marked down; staying in the word limit is part of the assignment. These pieces should be submitted on Canvas by the end of the day on November 16th. Assignments will receive a one-third of a letter grade deduction for each 24 hours that the assignment is late. Blogs/opeds will be graded on the following criteria:

- Staying within the word count and submitting on-time
- Choosing a topic that is clearly related to the course
- Well-written and well organized: It should be easy for a reader to follow the development of your argument and material should be presented logically.
- Citations to relevant research: Your piece should be informed by research, which can include course readings. You should footnote these sources using a proper citation method. ANY statistic or finding in the piece MUST have a citation to support it. Demonstration of research will lead to a higher grade.
- A clear argument: Your piece should have a clear argument, thesis, or unique perspective that you are presenting and that you support through your writing. A simple summary or “101” of a topic will NOT receive a high grade. Demonstration of analysis and critical thinking are required to score highly on this assignment.

At-home final: Students will have an open note, at-home final exam. This will be done via Canvas. It will be a 90-minute exam that can be taken at any point in a 24-hour period. Questions will be largely short-answer but will also be some other question formats. Students are to work independently on the exam and not speak to classmates about the questions or answers. The exam may cover any reading or lecture in the course.

Collaboration and Plagiarism Guidelines
Students are to work individually on all assignments. Students are encouraged to discuss course themes and topics with each other, but all research, idea generation, and writing for the blog and final exam must be done individually.

All literature or other work used in assignments must be documented using a standard citation format accompanied by a reference list at the end of the paper. See guidelines online here. Plagiarism is taken seriously and will be dealt with according to university policy. Students must adhere at all times to the University of Pennsylvania’s Code of Academic Integrity.

Course Outline and Readings

1. September 2 (W): Introduction to Risk Management
   Readings:
   - Global Risks Report 2020, World Economic Forum
Topic 1: Risk Identification and Risk Assessment

2. September 7 (M): Labor Day – No Class

   Readings:

4. September 14 (M): Risk Assessments
   Readings:
     → You are only required read Chapter 3, pages 65-73.

5. September 16 (W): Uncertainty in Risk Assessment
   Guest Lecture from Roger Cooke, TU Delft and RFF
   Readings:
   - Expert Judgement Provides Better Understanding of the Effect of Melting Ice Sheets

6. September 21 (M): Flooding in the U.S.
   Readings:
Topic 2: Risk Perceptions and Risk Communication

7. September 23 (W): Behavioral Decision-Making
   Guest Lecture from Howard Kunreuther, University of Pennsylvania
   Readings:
   → You are only required read Part I.

8. September 28 (M): Comparative Risk Perceptions
   Readings:

9. September 30 (W): Risk Communication
   Readings:

Topic 3: Structuring a Decision Problem

10. October 5 (M): Making Choices with Decision Analysis
    Readings:
11. October 7 (W): Benefit Cost Analysis and Risk Regulation
Readings:

12. October 12 (M): The Politics of Risk and the Risks of Politics
Readings:

Topic 4: Risk Management

Readings:

14. October 19 (M): Managing Through a Crisis
Readings:
15. October 21 (W): Public Sector Risk Management
Readings:
- UK National Risk Register

16. October 26 (M): The Precautionary Principle
Readings:

17. October 28 (W): Disaster Risk Management in the U.S.
Readings:

18. November 2 (M): Horizon Scanning and Scenario Planning
Readings:

November 3: Election Day: VOTE!

Topic 5: Risk Transfer
19. November 4 (W): Overview of Insurance and Risk Transfer
Readings:

20. November 9 (M): ILS and Cat Bonds
Readings:

Guest Lecture from Paul Huang, Assistant Administrator for Federal Insurance, FEMA
Readings:

22. November 16 (M): Innovations in Risk Transfer for Escalating Extremes
*BLOG/OPED DUE ON CANVAS*
Readings:

Topic 6: Current Risk Challenges

23. November 18 (W): Equity and Risk
Readings:
• Henisz, W. (2020). “Why We Need a Social Solidarity (i.e., Wealth) Tax to Recover from COVID-19.” LinkedIn, April 16.
24. November 23 (M): Managing Pandemics
Readings:

25. November 25: Thanksgiving – No Class

26. November 30 (M): Climate Change Impacts
Readings:
- The Economic Risks of Climate Change in the United States
- https://drawdown.org/solutions/ (choose half a dozen to read in detail)

27. December 2 (W): Systemic Threats
Readings:
- Futures Platform. Key Success Factors of a Foresight Program.

28. December 7 (M): Our Planet’s Life Support Systems
Readings:

29. December 9 (W): Wrap up