GY 552: Environment Decision Making
Fall 2024

Instructor: Dr. Wanyun Shao
Email: wshao1@ua.edu
Time: 3:30 pm – 6:20 pm T
Location: Farrah Hall 322
Office hours: by appointment
Office: 331D Farrah Hall

Course Description

This seminar surveys various theories and approaches from different disciplines to shed light on the complexity of environmental decision making in the Anthropocene. Specifically, on theoretical perspectives, we will critique the rational choice theory (e.g., expected utility theory). We will review two of the most influential decision theory papers in the last half century: judgment under uncertainty (Tversky and Kahneman, 1974) and the framing of decision (Tversky and Kahneman, 1985). We will look into perceptions of risk (Slovic, 1987), particularly the discrepancies between expert risk assessment and laypersons' risk perceptions, as well as risk/crisis communication theories. We will then examine the political discourse on certain environmental issues (e.g., climate change), and discuss social vulnerability to environmental hazards. We will also discuss how environmental ethics need to be integrated into decision making. Throughout this course, several guest speakers will discuss their approaches in the domain of environmental decision making. In the last section of the course, students will participate in a group project and initiate an individual project by applying the knowledge and skills acquired from this class.

Student Learning Outcomes

This is a reading intensive class. You are expected to read all the material I post on Blackboard. This is also a collaborative class. My role as an instructor is to help you learn through independent inquiry, critical thinking, and collaboration. In addition to completing all the required assignments, you are expected to participate in class discussions, group project presentation, and independent project presentation. The immediate outcomes include:

1. Students have working knowledge of the dominant modes of thinking about environmental decision making
2. Students critically assess the theories of environmental decision making
3. Students apply the working knowledge and their independent and critical thinking to a particular object of concern

Course Materials:

Material will be posted on Blackboard or disseminated in class.

Grade System

As seminar participants are a mixture of undergraduate and graduate students, each class has its own assignments and grading rubrics.

For graduate students (GY552)

- One research proposal due in the middle of the semester for the final paper: worth 50 point (3-3.5 pages excluding references)
- One final paper due at the end of the course: worth 100 point (7 pages excluding references)
    - Presentation of the final paper: worth 30 points (15 minutes)
- Participation (in-class discussions and activities): worth 90 points
- Group project: research portfolio 50, mitigation plan 50, and presentation 30

<u>Research Proposal Structure</u>

1. **Introduction**
    - Background: Provide context for the research topic. Explain why the topic is important and relevant. Discuss any existing literature or background information that highlights the significance of the research.
    - Problem Statement: Clearly define the problem or issue the research will address. This should be specific and focused.
    - Research Questions or Hypotheses: List the main research question(s) or hypotheses the study aims to explore. These should be clear, concise, and researchable.
    - Objectives of the Study: Outline the goals of the research. What do you intend to achieve? Typically, objectives are more specific than the research questions.

2. **Literature Review**
    - Overview of Existing Research: Summarize the key literature related to the research topic. Identify gaps in the existing research that your study will address.
    - Theoretical Framework (if applicable): Discuss the theories or models that will guide the research. Explain how they are relevant to your study.
    - Critical Analysis: Critically evaluate the existing literature, highlighting strengths, weaknesses, and areas for further research.

3. **Research Methodology**
    - Research Design: Describe the overall approach or type of research (e.g., qualitative, quantitative, mixed methods).
    - Data Collection Methods: Explain how you will collect data (e.g., surveys, interviews, experiments). Provide details on the tools or instruments you will use.
    - Sampling: Describe the sample size and selection criteria. Explain how participants or data sources will be chosen.
    - Data Analysis Plan: Discuss how the collected data will be analyzed. Specify the statistical tests or qualitative analysis methods you will use.
    - Ethical Considerations: Address any ethical issues related to the research, including how you will obtain consent from participants, ensure confidentiality, and handle sensitive data.
4. **Expected Outcomes**

- Anticipated Results: Discuss what you expect to find as a result of your research. This section can be speculative but should be grounded in the literature review and theoretical framework.
- Potential Implications: Explain the broader impact of your research. How could the findings contribute to the field? What are the potential practical or theoretical implications?

5. Timeline

- Project Timeline: Provide a detailed timeline of the research process, including key milestones and deadlines (e.g., literature review, data collection, analysis, writing). This helps in planning and demonstrates feasibility.

6. References

- Citations: List all the sources cited in your proposal. Use a consistent and appropriate academic style (e.g., APA, MLA, Chicago) as required by your institution.
- Bibliography: You may include additional sources that you plan to consult, even if not directly cited in the proposal.

Research Paper Structure

1. Title Page

- Title of the Paper: A concise and descriptive title that reflects the content of the research.
- Your Name: The student's name.
- Institution: Name of the college or university.
- Course/Department: The specific course or department for which the paper is being submitted.
- Date: The date of submission.

2. Abstract

- A brief summary (150-250 words) of the research paper, including the research question, objectives, methodology, key findings, and conclusions. The abstract provides a quick overview of the entire paper.

3. Introduction

- Background Information: Introduce the research topic and provide relevant background information. Explain why the topic is important and interesting.
- Problem Statement: Clearly define the problem or issue the research addresses. This sets the stage for the research question.
- Research Question(s) or Hypotheses: State the main research question(s) or hypotheses that the paper will explore.
- Objectives: Outline the specific goals of the research.
- Thesis Statement: Present the main argument or position that the paper will support.

4. Literature Review

- Summary of Existing Research: Review the relevant literature on the topic, summarizing key findings from previous studies.
- Critical Analysis: Critically evaluate the literature, identifying gaps, inconsistencies, and areas where further research is needed.
- Theoretical Framework (if applicable): Discuss the theories or models that guide your research and how they relate to your study.

5. Methodology

- Research Design: Describe the overall approach or type of research (e.g., qualitative, quantitative, experimental).
- Data Collection: Explain how data was collected, including the tools, instruments, or procedures used (e.g., surveys, interviews, experiments).

- Sampling: Describe the sample population or data sources, including the sample size and selection criteria.
- Data Analysis: Outline the methods used to analyze the data (e.g., statistical analysis, content analysis).

6. Results

- Presentation of Findings: Present the findings of the research in a clear and logical order. Use tables, graphs, and charts where appropriate to illustrate the data.
- Interpretation of Data: Provide a narrative that explains the data, highlighting key trends, patterns, and relationships.
- Statistical Analysis (if applicable): Include the results of any statistical tests performed and their significance.

7. Discussion

- Interpretation of Findings: Discuss the implications of the results in the context of the research question or hypothesis.
- Comparison with Existing Literature: Compare your findings with those from the literature review, noting any similarities or differences.
- Explanation of Unexpected Results: If any results were unexpected, offer explanations or hypotheses as to why they may have occurred.
- Limitations of the Study: Acknowledge any limitations in the research, such as sample size, methodology, or external factors that could affect the results.
- Suggestions for Future Research: Offer recommendations for further studies that could build on your findings or address the limitations.

8. Conclusion

- Summary of Key Findings: Recap the main findings of the research in relation to the research question or hypothesis.
- Implications: Discuss the broader significance of the findings for the field of study, practice, or policy.
- Final Thoughts: Provide a concluding statement that reinforces the importance of the research and its contributions to knowledge.

9. References

- Citations: List all the sources cited in the paper using a consistent academic style (e.g., APA, MLA, Chicago). Ensure that all references are properly formatted and complete.

Group Project Description: Coastal Flooding Mitigation Planning Activity

Students will undertake a role-playing exercise simulating the process of doing a coastal flooding mitigation plan. The class will be divided into stakeholder groups, each representing different interests and expertise areas. The project aims to foster collaboration, negotiation, and problem-solving skills as students navigate the complexities of coastal hazard mitigation. Particularly, knowledge co-development will be integrated into this group project. Knowledge co-development means that students will not only collaborate among themselves but also work with external experts to generate shared understanding and innovative solutions.

As members of a community (Mobile), each stakeholder group is expected to identify community vulnerabilities to coastal flooding, and develop a mitigation plan. Each student will be assigned to a group with a specific role. Depending on their roles, students will work representing various stakeholders. Each stakeholder group's responsibilities are provided as follows:

a. Stakeholder groups:

- **Local Government Officials**: Focus on policy, zoning, and infrastructure.
- **Environmental Scientists**: Provide insight into the ecological impact and sustainability.
- **Civil Engineers and Urban Planners**: Design physical mitigation measures and urban planning considerations.
- **Local Business Owners**: Represent economic interests and the impact on local commerce.
- **Community Representatives**: Voice the concerns and needs of local residents.
- **NGOs and Environmental Advocates**: Focus on long-term sustainability and environmental protection.

b. Background research:

Each stakeholder group will conduct background research by reviewing relevant local policies and documents that are available online and scientific publications.

c. Engagement with external experts and stakeholders to co-crate the mitigation plan:

Each stakeholder group will identify at least one local expert/stakeholder to consult with their expertise/experience through virtual meetings.

d. Project deliverables:

Research Portfolio: Each group submits a portfolio of their research and analysis, based on their background research and consultation with the local experts/stakeholders.

Mitigation Plan Document: Students work together to integrate the insights and solutions into a comprehensive plan detailing strategies, implementations, and stakeholder contributions.

Presentation: A collaborative presentation of the mitigation plan to the class, simulating a public hearing.

e. Specific Roles for Graduate and Undergraduate Students:

Graduate students: Graduate students will lead a stakeholder group by identifying and outlining major tasks as well delegating these tasks.

Undergraduate students: Undergraduate students will support and assist graduate students in delivering all three products.

Note: students are required to attend each class, participate in discussions and activities, and complete all assignments. Failure to complete all of the required assignments may result in a grade of F for the course. Points will be deducted for any work that is turned in late. 10% of the entire points for that particular assignment will be taken off if one day late. 25% of the entire points will be deducted if two-five days late. 50% of the entire points will be deducted if five-seven days late. You will get 0 for that assignment if you submit your work over a week late. A make-up paper/written report will be considered only upon receipt of proper/official documentation for an absence.

Semester Grades Are Determined Using This Scale

Numerical Grade	Letter Grade
≥ 90.0	A
≥ 80.0	B
≥ 70.0	C
≥ 60.0	D
< 60.0	E/F (Fail)

Attendance Policy
Students must attend every class. Participation in classroom activities and demonstration of preparedness will boost your participation grade.

Communication with the Instructor outside the Class
Communication with the instructor outside the class is equally important given that this is an upper level class. Throughout this course, students are encouraged to discuss their research projects with the instructor during her office hours or upon appointment.

Email Policy
I WILL NOT respond to messages sent by any email service other than UA E-mail. AND ALWAYS PUT the course number on the subject line.

Notification of Changes
The instructor will make every effort to follow the guidelines of this syllabus as listed; however, the instructor reserves the right to amend this document as the need arises. In such instances, the instructor will notify students in class and/or via email and will provide reasonable time for students to adjust to any changes.

Plagiarism: Plagiarism is a serious offense that is relatively easy to trace and determine. I have various means of identifying and tracing plagiarism. If you have questions about plagiarism, please contact me for further details and/or view official university websites. In addition, we have the Turnitin Policy.

Turnitin Policy: The University of Alabama is committed to helping students uphold the ethical standards of academic integrity in all areas of study. Students agree that their enrollment in this course allows the instructor the right to use electronic devices to help prevent plagiarism. All course materials are subject to submission to Turnitin.com for the purpose of detecting textual similarities. Assignments submitted to Turnitin.com will be included as source documents in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. Turnitin.com will be used as a source document to help students avoid plagiarism in written documents.

The UAct
The University of Alabama is committed to an ethical, inclusive community defined by respect and civility. The UAct website (www.ua.edu/uact) provides a list of reporting channels that can be used to report incidences of illegal discrimination, harassment, sexual assault, sexual violence, retaliation, threat

assessment or fraud UA's primary communication tool for sending out information is through its web site at www.ua.edu. In the event of an emergency, students should consult this site for further directions. Additional course information will be posted using Blackboard.

Severe Weather Guidelines

The guiding principle at The University of Alabama is to promote the personal safety of our students, faculty and staff during severe weather events. It is impossible to develop policies that anticipate every weather-related emergency. These guidelines are intended to provide additional assistance for responding to severe weather on campus.

UA is a residential campus with many students living on or near campus. In general classes will remain in session until the National Weather Service issues safety warnings for the city of Tuscaloosa. Clearly, some students and faculty commute from adjacent counties. These counties may experience weather related problems not encountered in Tuscaloosa. Individuals should follow the advice of the National Weather Service for that area taking the necessary precautions to ensure personal safety. Whenever the National Weather Service and the Emergency Management Agency issue a warning, people in the path of the storm (tornado or severe thunderstorm) should take immediate lifesaving actions. When West Alabama is under a
severe weather advisory, conditions can change rapidly. It is imperative to get to where you can receive information from the National Weather Service and to follow the instructions provided. Personal safety should dictate the actions that faculty, staff and students take.

The Office of University Relations will disseminate the latest information regarding conditions on campus in the following ways:

Weather advisory posted on the UA homepage
Weather advisory sent out through UA Alerts to faculty, staff and students
Weather advisory broadcast over WVUA at 90.7 FM
Weather advisory broadcast over Alabama Public Radio (WUAL) at 91.5 FM
Weather advisory broadcast over WVUA-TV/WUOA-TV, and on the website at http://wvuatv.com/content/weather. WVUA-TV Home Team Weather provides a free service you can subscribe to which allows you to receive weather warnings for Tuscaloosa via e-mail or cell phone. Check http://wvuatv.com/content/free-email-weather-alerts for more details and to sign up for weather alerts.
In the case of a tornado warning (tornado has been sighted or detected by radar; sirens activated), all university activities are automatically suspended, including all classes and laboratories. If you are in a building, please move immediately to the lowest level and toward the center of the building away from windows (interior classrooms, offices, or corridors) and remain there until the tornado warning has expired.

Classes in session when the tornado warning is issued can resume immediately after the warning has expired at the discretion of the instructor. Classes that have not yet begun will resume 30 minutes after the tornado warning has expired provided at least half of the class period remains.

Policy on Academic Misconduct

All students in attendance at The University of Alabama are expected to be honorable and to observe standards of conduct appropriate to a community of scholars. The University of Alabama expects from its students a higher standard of conduct than the minimum required to avoid discipline. At the beginning of each semester and on examinations and projects, the professor, department, or division may require that each student sign the following Academic Honor Pledge: “I promise or affirm that I will not at any time

be involved with cheating, plagiarism, fabrication, or misrepresentation while enrolled as a student at The University of Alabama. I have read the Academic Honor Code, which explains disciplinary procedure resulting from the aforementioned. I understand that violation of this code will result in penalties as severe as indefinite suspension from the University." See the Code of Student Conduct for more information.

Disability Accommodations

The University of Alabama is committed to ensuring the full participation of all students in its programs. If you have a documented disability (or think you may have a disability) and need reasonable accommodation(s) to participate in this class, contact the Office of Disability Services (or ODS; 205-348-4285, ods@ua.edu, Houser Hall 1000, www.ods.ua.edu) as soon as possible. If you have been approved to receive accommodations through ODS, please meet with me during office hours or by appointment to submit your accommodation letter and discuss how accommodations can be implemented in this course.

Generative AI Tools

Students are allowed to use generative AI tools such as ChatGPT for specific assignments, as designated by the instructor. However, for these specific assignments, students should follow the "verify everything" approach to the content generated by these AI tools. These tools learned the models from the public internet, which means they may reproduce substantial text from other sources. It is the student's responsibility to check the original sources to be sure they are not plagiarizing someone else's work. Students should also cross-check the content and citations generated by these tools to ensure they are accurate and properly referenced.

Students should incorporate the subsequent statement in their assignments when using a Generative AI Tool: "For this assignment's preparation, the author(s) have utilized [Generative AI Tool Name], a language model created by [Generative AI Tool Provider]. Within this assignment, the [Generative AI Tool Name] was used for purposes such as [e.g., brainstorming, grammatical correction, writing paraphrasing, citation, specific sections of the assignment]."

Schedule

GY 452/552: Environmental Decision Making

(Subject to Changes)

August 27	Introduction: Syllabus, Schedule, and Stuff
September 3	Judgment under Uncertainty
September 10	Risk Communication
September 17	How to measure flood susceptibility, social vulnerability, and flood risk
September 24	Framing of Decisions and the Psychology of Choice
October 1	Risk Perception; proposal due
October 8	Social Bases of Environmental Concern
October 15	Political Discourse on Environmental Issues
October 22	Social Vulnerability
October 29	Environmental Ethics
November 5	Group Project Presentation and Discussion
November 12	Student Individual Presentation I
November 19	Student Individual Presentation II
December 2	Individual Paper Peer Review
December 11	Final Paper Due