

Master of Science in Sustainability Management

SUMA PS5701: WATER GOVERNANCE

Time: Fall 2024

Location: TBD

3 credits

[Area 4: The Public Policy Environment of Sustainability Management]

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Course Overview

Water is widely recognized as the most essential natural resource for both society and Earth's ecosystems. Yet the relationship between society and water is complex. While water is critical for livelihoods, it is also frequently a hazard. Floods, droughts, and contaminated water are formidable threats to human well-being. To deal with this dual nature of water, people have long modified the water cycle through engineering schemes like dams, reservoirs, irrigation systems, and interbasin transfer systems as well as through land use and land-cover change.

We need more than just technical solutions. Society needs a clear and robust plan to manage and govern water given its intertwined relationship with this critical resource. In "Water Governance", we will explore the *political, social, economic, and administrative systems that affect the use, development, and management of water resources*. You will be introduced to current themes that influence water governance including sustainable development, integrated water resource management, water rights and pricing, corruption, and equity for marginal groups. These themes will be explored at the local, national, and international levels to provide you with a broad understanding of water governance issues.

Learning Objectives

The objective of this course is for you to understand the present-day challenges to effective governance and management of water resources. You will gain experience in discussing and crafting solutions to these challenges by assessing the needs of multiple stakeholders and analyzing water resources from a multi-sectoral perspective.

When you complete this course, you will have gained experience in:

- Interdisciplinary research related to water, linking together information from various disciplines and sources;
- Clear and succinct communication of ideas and findings; and
- Debating water-governance issues at the local, national, and international levels.

Course structure

Each session is focused on a small number of key questions that are identified in the syllabus. Readings will be assigned for each session that exposes you to various theories and practical examples related to these questions. Class will begin with a lecture, which will be followed by an extended discussion, led and facilitated by different groups of students each week. The lectures, together with interactive discussions, will develop both your understanding of the specified topics and your communication skills. Lastly, the term paper and presentation will help you hone your interdisciplinary research skills and provide you with experience in succinct communication of ideas and results.

Prerequisites

You should have familiarity with the fundamental concepts of the hydrological cycle and general environmental

policy. Please contact me to discuss if you are unsure, and we can determine if this is the right course for you. You should also be able to write clearly and effectively as most of the assignments involve essay writing.

Course Content

The course includes thirteen sessions; each session is 1 hour 50 minutes. They are listed below with reading but **always check on Canvas for updates.**

1. Course Overview and Expectations: September 4, 2024

Required readings

- The Water Governance Facility (WGF) is a partnership between the United Nations Development Programme (UNDP) and the Stockholm International Water Institute (SIWI). Familiarize yourself with their views on water governance on the WGF website: [What is Water Governance?](#)
- Belo Monte Dam
 - *Leveraging Hydropower for Peace*. August 24, 2022, Emilie Broek & Kyungmee Kim.
 - *Satellites over the Amazon capture the choking of the 'house of God' by the Belo Monte Dam – they can help find solutions, too*. July 18, 2022 Pritam Das et al.

Recommended readings

- *Hydrology*: Having a background in the physical processes will help you in this course, especially when discussing sustainable solutions. A good entry-level book on hydrology is Tim Davie's *Fundamentals of Hydrology*. However, a free, online alternative is available at the USGS website: <https://www.usgs.gov/special-topic/water-science-school> (Links to an external site.).
- *Water & Society*: In terms of understanding the interactions between people and water, good reads include Fred Pearce's "When the Rivers Run Dry, Fully Revised and Updated Edition: Water-The Defining Crisis of the Twenty-First Century" and Peter Gleick's "The Three Ages of Water: Prehistoric Past, Imperiled Present, and a Hope for the Future"
- *Environmental Policy*: For fundamental issues in environmental policy, I recommend "Green Planet Blues: Four Decades of Global Environmental Politics" by Ken Conca and Geoffrey D. Dabelko.

2. Understanding the Water Governance Landscape: September 11, 2024

Required readings:

- *Managing Water under Uncertainty and Risk, The United Nations World Water Development Report 4* (2012), Volume 1, Chapter 1, pp 22-42.
- Håkan Tropp (2007), Water governance: trends and needs for new capacity development, *Water Policy* 9 Supplement 2 19–30.
- Bebbington, A., Chicchon, A., Cuba, N., Greenspan, E., Hecht, S., Bebbington, D. H., ... & Sauls, L. (2020). Opinion: Priorities for governing large-scale infrastructure in the tropics. *Proceedings of the National Academy of Sciences*.

Recommended readings:

- Hoekstra, A.Y. (2011), The Global Dimension of Water Governance: Why the River Basin Approach Is No Longer Sufficient and Why Cooperative Action at Global Level Is Needed, *Water*, 3, 21-46; doi:10.3390/w3010021.
- Lall U., T. Heikkila, C. Brown and T. Siegfried (2008), Water in the 21st century: Defining the elements of global crises and potential solutions, *Journal of International Affairs*, 61(2), 1-17.

3. Exploring IWRM & Alternative Water Resource Management Strategies: September 18, 2024

Required readings

- New York Times. (May 25, 2023). *A Breakthrough Deal to Keep the Colorado River From Going Dry, for Now*
- Hering, J. G., & Ingold, K. M. (2012). Water resources management: what should be integrated?.

Science, 336(6086), 1234-1235.

- Engle, N. L., Johns, O. R., Lemos, M. C., & Nelson, D. R. (2011). Integrated and adaptive management of water resources: tensions, legacies, and the next best thing. *Ecology and society*, 16(1), 19.
- Rhett Larson (2011). Panacea or Platitude: Integrated Water Resource Management – Conceptually Sound But Fundamentally Flawed, *The Sustainability Review*, Issue One, Volume 3.
- Loucks, D. P. (2022). Meeting Climate Change Challenges: Searching for More Adaptive and Innovative Decisions. *Water Resources Management*, 1-11.

Recommended readings

- Giordano, M., & Shah, T. (2014). From IWRM back to integrated water resources management. *International Journal of Water Resources Development*, 30(3), 364-376.
- UNEP (2014). *Towards Integrated Water Resources Management: International Experience in Development of River Basin Organisations*. United Nations Environment Programme.

4. **Understanding Water Institutions: September 25, 2024**

This week, we will define and discuss water institutions. Institutions are organizations or systems that create and enforce rules to regulate behavior. In the context of water management, one example is the Clean Water Act (CWA, <https://www.epa.gov/laws-regulations/history-clean-water-act>), which is federal legislation enacted by the U.S. Congress to protect the waters of the United States. The U.S. Environmental Protection Agency (EPA) is the *institution* responsible for administering and enforcing the CWA.

Required readings

- WWDR (2012) *The United Nations World Water Development Report*
- 4: *Managing Water under Uncertainty and Risk* Volume 1, Chapter 5, pp 141-156. Note: pp. 138-141 discuss IWRM and AM from last class.
- Meinzen-Dick, R. (2007). Beyond panaceas in water institutions. *Proceedings of the National Academy of Sciences*, 104(39), 15200-15205.
- Keiser, D. A., & Shapiro, J. S. (2019). Consequences of the Clean Water Act and the demand for water quality. *The Quarterly Journal of Economics*, 134(1), 349-396. *READ ONLY pp. 349 to 360.*

Recommended readings

- Saleth, R. M., & Dinar, A. (2005). Water institutional reforms: theory and practice. *Water Policy*, 7, 1-19.
- Megdal, S. B., Gerlak, A. K., Varady, R. G., & Huang, L. Y. (2014). Groundwater Governance in the United States: Common Priorities and Challenges. *Groundwater*. (Water Institutions should address GW governance?)
- MacDonnell, L. J., Getches, D. H., & Hugenberg Jr, W. C. (1995). The law of the Colorado River: coping with severe sustained drought. *JAWRA Journal of the American Water Resources Association*, 31(5), 825-836.
- Ken Conca, 2006. "Transnational Dimensions of Freshwater Ecosystem Governance," in A.R. Turton, J. Hattingh, G.A. Maree, D.J. Roux, M. Claassen, and W.F. Strydom, eds., *Governance as a Trialogue: Government-Society-Science in Transition*. Berlin: Springer-Verlag.

5. **Understanding Water Rights: October 2, 2024**

Required readings:

- Hodgson, S. (2006). *Modern water rights: Theory and practice* (Vol. 92). Food & Agriculture Organization. pp. 1 to 30.
- Sophocleous, M. (2012). *Conserving and Extending the Useful Life of the Largest Aquifer in North America: The Future of the High Plains / Ogallala Aquifer*.
- Miller, J. (2014). California's sweeping new groundwater regulations (Same as it ever was?). *High Country News*.
- Christian-Smith, J., & Abhold, K. (2015). *Measuring What Matters: Setting Measurable Objectives to Achieve Sustainable Groundwater Management in California* (Executive Summary (pg. 1-5)). Union of Concerned Scientists.

Recommended:

Robison, J., & Kenney, D. (2012). Equity and the Colorado River Compact. *Environmental Law*, 42.

6. Water Pricing and Markets: October 9, 2024

Required readings:

- Walton, 2019. Price of Water 2019: Even Without Federal Infrastructure Deal, Cities Continue to Invest, Circle of Blue. <https://www.circleofblue.org/2019/world/2019-price-of-water/>
- Lam, 2015. Finding the Right Price for Water, *The Atlantic*. <https://www.theatlantic.com/business/archive/2015/03/finding-the-right-price-for-water/388246/>
- Schwartz, 2015. Pricing in Two Thirsty Cities: In One, Guzzlers Pay More, and Use Less. *NYTT*.
- Grafton, R. Q., Libecap, G. D., Edwards, E. C., O'Brien, R. J., & Landry, C. (2012). Comparative assessment of water markets: insights from the Murray Darling Basin of Australia and the Western USA. *Water Policy*, 14(2), 17.

Recommended:

- Olmstead, S. M., & Stavins, R. N. (2007). Managing Water Demand: Price vs. Non-Price Conservation Programs. *Pioneer Institute White Paper*, (39).
- Easter, K. W., Rosegrant, M. W., & Dinar, A. (1999). Formal and informal markets for water: institutions, performance, and constraints. *The World Bank Research Observer*, 14(1), 99-116.

7. Water Privatization: October 16, 2024

Required readings:

- Finnegan, W. (2002). "Leasing the Rain" *The New Yorker*, 78(7): 43-53, April 2002.
- Shultz, J. (2009). The Cochabamba water revolt and its aftermath. *Dignity and Defiance: Stories from Bolivia's Challenge to Globalization*. U. of California, Berkeley, 9-34
- Bakker, K. (2013). Neoliberal Versus Postneoliberal Water: Geographies of Privatization and Resistance. *Annals of the Association of American Geographers*, 103(2), 253-260
- Hauter, W (2012). Are We Better Off Privatizing Water? *Wall Street Journal*. 8 October 2012.

Recommended:

- Helm, D. (2020). Thirty years after water privatization—is the English model the envy of the world? *Oxford Review of Economic Policy*, 36(1), 69-85.

8. Tackling Corruption and Promoting Good Governance: October 23, 2024

Required readings:

- Davis, J. (2004). Corruption in public service delivery: experience from South Asia's water and sanitation sector. *World Development*, 32(1), 53-71
- Klopp, J. M., & Sang, J. K. (2011). Maps, Powers, and the Destruction of the Mau Forest in Kenya. *Geo. J. Int'l Aff.*, 12, 125.

Recommended readings:

- WGF (2011). *Training Manual on Water Integrity*. Focus on Modules 2 – 4 and 7.
- Stålgren, P. (2006). Corruption in the water sector: Causes, consequences and potential reform. *Swedish Water House Policy Brief*, 4.

9. From Theory to Reality: Water Governance in the Mekong and Indus Basins: October 30, 2024

Required readings:

- Hoffman, S. J., Baral, P., Rogers Van Katwyk, S., Sritharan, L., Hughsam, M., Randhawa, H., ... & Poirier, M. J. (2022). International treaties have mostly failed to produce their intended effects. *Proceedings of the National Academy of Sciences*, 119(32), e2122854119.
- Bagla, P. (2010). Along the Indus River, saber rattling over water security. *Science*, 328(5983),

1226-1227.

- Briscoe, J. (2010). Troubled waters: Can a bridge be built over the Indus. *Economic and Political Weekly*, Bombay, 45(50), 28-32.

Recommended:

- Dore, J., Lebel, L., & Molle, F. (2012). A framework for analyzing transboundary water governance complexes, illustrated in the Mekong Region. *Journal of Hydrology*, 466, 23-36.
- Abas, N., Khan, N., Saleem, M. S., & Raza, M. H. (2019). Indus Water Treaty in the doldrums due to water–power nexus. *European Journal for Security Research*, 4(2), 201-242.
- Hecht, J. S., Lacombe, G., Arias, M. E., Dang, T. D., & Piman, T. (2019). Hydropower dams of the Mekong River basin: A review of their hydrological impacts. *Journal of Hydrology*, 568, 285-300.

10. The Water-Energy-Food Nexus: November 6, 2024

Required readings:

- *Energy*: Opperman, J. J., J. Royte, J. Banks, L. R. Day, and C. Apse. 2011. The Penobscot River, Maine, USA: a basin-scale approach to balancing power generation and ecosystem restoration. *Ecology and Society* 16(3):7.
- *Food*: Allan, J. A. (2003). Virtual Water-the Water, Food, and Trade Nexus. Useful Concept or Misleading Metaphor? *Water International*, 28(1), 106-113.
- *Energy & Food*: Tilman, D., Socolow, R., Foley, J. A., Hill, J., Larson, E., Lynd, L., ... & Williams, R. (2009). Beneficial biofuels– the food, energy, and environment trilemma. *Science*, 325(5938), 270.

Recommended:

- D'Odorico, P., Davis, K. F., Rosa, L., Carr, J. A., Chiarelli, D., Dell'Angelo, J., ... & Rulli, M. C. (2018). The global food-energy-water nexus. *Reviews of Geophysics*, 56(3), 456-531.

11. Water Conflicts: Beyond the Headlines: November 13, 2024

Required readings:

- Barnaby, W. (2009). Do nations go to war over water? *Nature*, 458(7236), 282-283.
- Serageldin, I. (2009). Water: conflicts set to arise within as well as between states. *Nature*, 459(7244), 163-163.
- Kelley, C. P., Mohtadi, S., Cane, M. A., Seager, R., & Kushnir, Y. (2015). Climate change in the Fertile Crescent and implications of the recent Syrian drought. *Proceedings of the National Academy of Sciences*, 112(11), 3241-3246.
- Selby, J., Dahi, O. S., Fröhlich, C., & Hulme, M. (2017). Climate change and the Syrian civil war revisited. *Political Geography*, 60, 232-244.

Recommended readings:

- Eyler, Brian and Weatherby, Courtney. “New Evidence: How China Turned off the Tap on the Mekong River”. April 13, 2020. The Stimson Center: <https://www.stimson.org/2020/new-evidence-how-china-turned-off-the-mekong-tap/>
- Rahaman, M. M. (2012). Water wars in 21st century: speculation or reality? *International Journal of Sustainable Society*, 4(1), 3-10.

12. Water Governance Ahead: November 20, 2024

Required readings:

- Gupta, J., Akhmouch, A., Cosgrove, W., Hurwitz, Z., Maestu, J., & Ünver, O. (2013). Policymakers’ Reflections on Water Governance Issues. *Ecology and Society*, 18(1), 35.
- Gleick, P. H., & Palaniappan, M. (2010). Peak water limits to freshwater withdrawal and use. *Proceedings of the National Academy of Sciences*, 107(25), 11155-11162.
- David Zetland, To centralize or not to centralize? *Aguanomics* blog, 11 April 2013, <http://www.aguanomics.com/2013/04/to-centralize-or-not-to-centralize.html>

13. Term-Project Presentations: December 4, 2024

The culmination of your term project will take place during our final class session. This session is designed to showcase your research and foster engaging discussions among peers. Here's what to expect:

- **Pre-Class Preparation:** Create a 5-minute video summarizing your research findings. Submit this video by Sunday, December 1, 2024, at 11:59 p.m. This early submission allows your classmates to view your work before the final session, enabling more informed and dynamic in-class discussions.
- **In-Class Presentation:** During the final class, you'll present a brief summary of your research. You'll then lead a discussion based on your findings, engaging with questions and comments from your peers and instructors.
- **Visual Aid:** Prepare one slide to support your in-class presentation. Add this slide to our shared class Google slides file (link to be provided). Deadline for adding your slide: Tuesday, December 3, 2024, at 12:00 p.m.

This format allows for a comprehensive sharing of your work through the pre-recorded video, while the in-class component promotes interactive dialogue and deeper exploration of your research topic. Be prepared to not only present your findings but also to engage in thoughtful discussion about your work and its implications in the field of water governance.

Textbook and Readings

All readings will be posted on Canvas in the "Syllabus" section. You do not need to purchase a textbook for this class, although some of the recommended readings will be from books that you might want to purchase. Each session will have its own page, so please be sure to check there before each class for relevant readings and other announcements. You should read this material before each class (i.e. the readings should be done by the start of the lecture that it is associated with).

Resources and Software Packages

Canvas will be used for communication of assignments, course material, and other information throughout the course. The Columbia University Libraries will be the primary resources for course material.

Academic Integrity

Columbia University expects its students to act with honesty and propriety at all times and to respect the rights of others. It is fundamental University policy that academic dishonesty in any guise or personal conduct of any sort that disrupts the life of the University or denigrates or endangers members of the University community is unacceptable and will be dealt with severely. It is essential to the academic integrity and vitality of this community that individuals do their own work and properly acknowledge the circumstances, ideas, sources, and assistance upon which that work is based.

Academic honesty in class assignments and exams is expected of all students at all times. SPS holds each member of its community responsible for understanding and abiding by the SPS Academic Integrity and Community Standards posted at <http://sps.columbia.edu/student-life-and-alumni-relations/academic-integrity-and-community-standards>. You are required to read these standards within the first few days of class. Ignorance of the School's policy concerning academic dishonesty shall not be a defense in any disciplinary proceedings.

Accessibility

Columbia is committed to providing equal access to qualified students with documented disabilities. A student's disability status and reasonable accommodations are individually determined based upon disability documentation and related information gathered through the intake process. For more information regarding this service, please visit the University's Health Services website: <http://health.columbia.edu/services/ods/support>.

Course Requirements and Evaluation

Attendance and Late Assignments: Students are expected to attend all class sessions and actively participate in class discussions. Assignments should be submitted by the stated deadlines to ensure that you can fully engage with the course material and benefit from feedback. Late assignments will incur a penalty of 10% per calendar day, starting immediately after the assignment deadline. Extenuating circumstances, such as illness or family emergencies, should be brought to the attention of the Professor as soon as possible. These will be considered on a case-by-case basis, and documentation may be required.

Relative Contribution of Assignments and Final Grade

Your final grade for the course will be calculated based on the following components:

- Participation: 15%
- Short-answer essays with critical AI analysis: 25%
- Discussion lead and summary: 15%
- Term paper and presentation: 45%

The final course grade will be computed using a weighted average of these components and then converted to a letter grade scale from A+ to F. All assignment due dates will be posted on Canvas.

Participation (15%)

Your participation grade will be based on submitting 1-paragraph summaries of class discussions for **10 out of the 12 sessions**. These summaries should capture key points, insights, and your reflections on the material covered.

Grading Structure

- Each acceptable summary is worth 1.5% of your final grade (15% total)
- Summaries are graded pass/fail
- To pass, a summary must demonstrate genuine engagement with the material, including key points from the discussion and thoughtful reflection
- Submissions that are overly brief, lack substance, or show minimal effort will not receive credit
- You must submit for at least 10 sessions; only 10 will count towards your grade if you submit more
- Due the day after the class.

Active participation in class discussions is strongly encouraged to enhance your learning experience and inform your summaries.

Short-Answer Essays with Critical AI Analysis (25%)

Starting in Week 3, you will complete a set of short essays that incorporate critical analysis of AI-generated content. You must complete four sets by the end of the course. You may submit up to five (5) sets; the highest 4 grades will count towards your final course grade. **Each essay is due by 6:00 p.m. on the day of class.**

Objective: To encourage deep thinking about course material, develop skills in prompt engineering, and critically analyze AI-generated content.

Format: Each essay set will consist of:

1. **Initial Response:** Write your initial thoughts on the given question(s) before consulting any AI tool.
2. **AI Interaction:** a) Create a prompt for ChatGPT related to the question. b) Include ChatGPT's response.
3. **Critical Analysis:** a) Compare and contrast your initial thoughts with ChatGPT's response. b) Identify strengths and weaknesses in the AI's answer. c) Explain how the AI's response has influenced or challenged your thinking. d) Discuss any ethical considerations or biases you notice in the AI's response.
4. **Synthesis and Reflection:** a) Synthesize your initial thoughts, the AI's input, and course materials to form a comprehensive response to the original question. b) Reflect on how this process affected your understanding of the topic. c) Discuss what you learned about effective prompt creation and AI interaction.

Citation Policy: Cite all sources, including AI-generated content, following the MLA style guide for AI

sources.

Grading (Scale 1-10):

- Quality and originality of initial response
- Thoughtfulness of AI prompt creation
- Depth of critical analysis
- Integration of course concepts in final synthesis
- Reflection on the process and learning outcomes

Discussion Lead and Summary Form (15%)

This assignment has **TWO** parts designed to foster thoughtful discussion and engagement with weekly readings. Groups of 2-3 students will lead discussions starting from Class 3.

Sign-up: Use your Columbia email to access the sign-up sheet: [TBD Google Sheets Link]

PART 1: Discussion Lead (In-Class)

- Responsibility: Guide a focused discussion on a specific aspect of the week's readings.
- Roles: Assign facilitator(s) and a note-taker within your group.
- Time: Plan for a 30-minute discussion segment.
- Format: Avoid PowerPoint. Use creative methods like role-playing, debates, or interactive tools (e.g., Kahoot).
- Approach: Use open-ended questions to stimulate thought and guide discussion.
- Evaluation: Based on integration of reading ideas and fostering active participation.

PART 2: Google Forms Summary (Pre-Class)

- Submission: Complete the Google Form summarizing your discussion plan: [Google Form Link]
- Deadline: Submit at least 48 hours before your scheduled session.
- Grading: Scored 1-10 based on the rubric below.

Criteria	Poor (1-2)	Satisfactory (3-4)	Good (5-6)	Excellent (7-10)
Engagement with Readings	Minimal reference	Some references, not well-integrated	Good integration	Excellent, adds depth
Facilitation and Methodology	Ineffective, uncreative	Moderate, some creativity	Good, creative methods	Outstanding, highly creative
Clarity and Organization	Unclear, disorganized	Moderately clear	Clear, well-organized	Exceptionally clear
Coverage of Key Components	Many elements missed	Some covered, lacks depth	Good coverage	Comprehensive, insightful
Goals, Outcomes, and Depth	Unclear goals, shallow	Somewhat clear, moderate depth	Clear goals, good depth	Exceptionally clear, deep insights

Term Paper and Presentation (45%)

The term paper is a semester-long project focused on a case study in water governance. The aim is to select a topic

that is not only academically engaging but also career-enriching. The term paper should be approximately 2,500–3,000 words, not including figures, tables, and references.

- Example Paper: An example paper from a previous semester will be posted.
- Example Topics: See lecture slides from Week 2.
- Grading: A detailed grading rubric is provided below.

Milestones: Check-ins with TA and professor are highly encouraged. Below are some important milestones:

- Class 4 (Sept. 25): Thesis statement due
- Class 8 (Oct. 23): First draft due for peer review
- Class 12 (Nov. 20): Draft due for TA/professor comments
- Upload 5-minute video (Dec. 1st)
- Upload 1 slide for your term-project discussion
- Class 13 (Dec. 4): term-project discussions
- Final paper (Dec .20 at 11:59 p.m.)

Video and Presentation:

- Submit a 5-minute video summarizing your findings by **Sunday, December 1, 2024 at 11:59 p.m.**, so that your classmates can view your video prior to the final class session.
- During the final class, present a brief summary and lead a discussion on your research findings. You should add 1 slide to our class Google slides file (to be added) by **Tuesday, December 3, 2024 at 12:00 p.m.**

Criteria	Poor (F-D)	Satisfactory (C-B)	Excellent (A-A+)
Thesis & Argument Structure	Lacking cohesion and focus	Mostly coherent but could be more focused	Highly coherent and persuasive
Evidence and Analysis	Sparse or irrelevant data	Adequate evidence but lacking in-depth analysis	Comprehensive and insightful analysis
Clarity and Organization	Disorganized and unclear	Well-organized but some sections unclear	Exceptionally organized and easy to follow
Originality & Relevance	Topic or argument lacks originality or relevance	Topic or argument has some originality or relevance	Topic or argument is highly original and relevant
Integration of Class Concepts	No or limited integration of class concepts	Some integration but not comprehensive	Seamless integration of class concepts into the paper
Solutions to Governance Challenges	No or superficial solutions presented	Solutions presented but lack depth or feasibility	Thoughtful, feasible solutions backed by evidence
Presentation	Incoherent, rushed or disengaging	Clear but lacks engagement or is not comprehensive	Engaging, comprehensive, and clear

AI Usage Policy for Term Project

In recognition of the evolving landscape of academic work and the increasing prevalence of AI tools, the following guidelines are provided for the use of AI in your term project:

- **Transparency:** If you use AI tools (such as large language models or other AI-assisted writing tools) in any part of your work, you must explicitly state this in your paper. Include a section detailing which parts of your work involved AI assistance and how it was used.
- **Original Thinking:** While AI can be a useful tool for research, idea generation, or proofreading, the core arguments, analysis, and conclusions in your paper must be your own original work. AI should not be used to generate the main content of your paper.
- **Fact-Checking:** If you use AI to help gather information, it is your responsibility to verify all facts and claims. AI can make mistakes or present outdated information, so cross-reference with reliable academic sources.
- **Citation:** If you use AI to help with literature reviews or to find sources, you must still read and properly cite the original sources. Do not cite the AI as a source.
- **Writing Style:** Your paper should reflect your own writing style. While you may use AI for proofreading or suggestions, the final product should be in your own voice.

- Ethical Considerations: Consider and discuss any ethical implications of using AI in water governance, if relevant to your topic.

Academic Integrity and AI Use:

Appropriate use of AI tools as writing aids, research assistants, or for brainstorming is permitted when properly disclosed. However, submitting AI-generated content as your own work without substantial modification or critical engagement is considered a violation of academic integrity.

Examples of prohibited uses include:

- Having AI write entire sections of your paper without significant input or revision from you.
- Using AI to paraphrase sources without proper citation.
- Submitting AI-generated analysis or conclusions without your own critical evaluation and expansion.

Remember, the goal of this project is to demonstrate your understanding, analytical skills, and ability to engage with the course material. AI should be used as a tool to enhance your work, not replace your own critical thinking and effort. If you're unsure about whether your use of AI is appropriate, please consult with your instructor.

Policies and Expectations from SPS Sustainability Management

Accessibility Statement – Contact disability@columbia.edu for learning accommodations.

Names/Pronouns – You deserve to be addressed in a manner that reflects your identity. You are welcome to tell me your pronoun(s) and/or name (if different from University records) at any time, either in person or via email.

Discrimination – We embrace the diversity of gender, gender identity & expression, sex, sexual orientation, race, ethnicity, national origin, age, religion, disability status, family status, socioeconomic background, and other visible and non-visible identities. Columbia University does not tolerate unlawful discrimination, discriminatory harassment, sexual assault, domestic violence, dating violence, stalking, or sexual exploitation and all such conduct is forbidden by Columbia University Policy.

Duty to Report – You deserve a University community free from discrimination, harassment, and gender-based misconduct including sexual harassment, sexual assault, domestic and dating violence, stalking, and sexual exploitation. It is therefore University policy to require Columbia faculty and staff to report to EOAA any instance or allegation of prohibited conduct involving any undergraduate or any graduate student that is disclosed to, observed by, or otherwise known to that employee. This requirement to report is in place to help ensure that students are provided appropriate resources and to allow the University to mitigate harm to our community.

Confidential Resources - There are confidential resources on campus who do not have a Duty to Report, including:

- Sexual Violence Response & Rape Crisis/Anti-Violence Support Center (SVR)
- Ombuds Office
- Medical Services
- University Counseling and Psychological Services
- University Pastoral Counseling
- Columbia Office of Disability Services

University employees working in a confidential capacity will not report information shared with them.

Inclusion - In the M.S. in Sustainability Management program, faculty, and staff are committed to the creation and maintenance of “inclusive learning” spaces – classrooms and other places of learning where you will be treated with respect and dignity, and where all individuals are provided an equitable opportunity to participate, contribute, and succeed.

In this classroom, all students are welcome regardless of race/ethnicity, gender identities, gender expressions, sexual orientation, socio-economic status, age, disabilities, religion, regional background, Veteran status, citizenship status, nationality, and other diverse identities that we each bring to class.