

## **GPGN 490: Water Policy**

University of California San Diego

School of Global Policy and Strategy (GPS)

**Winter 2023, Tuesdays and Thursdays, 2:00pm – 3:20pm**

**Class Location:** GPS Gardner Room

### **Instructor:**

Morgan Levy



Office hours: Thursdays 3:30pm – 4:30pm.



### **Description:**

This course will introduce students to contemporary water resources topics from an environmental policy and management perspective. Topics include: an overview of fundamental concepts and data from surface water and groundwater hydrology that are relevant to water policy and politics; water infrastructure within industrial, agricultural, and urban sectors; climate change, land use change, and freshwater adaptation strategies; water institutions and actors at local to global scales; water and human health; and equity dimensions of water policy.

### **Course Prerequisite:**

A quantitative or physical science background is not required and is not necessary to achieve the learning objectives of this course, but may augment student understanding of some material. Students should have GPS graduate student standing; non-GPS graduate and undergraduate students may enroll with consent of the instructor.

### **Learning Objectives:**

After studying all materials and resources presented in the course, students will:

- Gain understanding of terms and concepts fundamental to the understanding of water policy, including concepts from surface water and groundwater hydrology and water management fields.
- Understand key challenges and opportunities in water policy with respect to climate and land use change, water infrastructure, institutions and governance, human health, and equity.
- Develop the skills to apply water data and other information sources to inform water policy decisions and implementation.
- Read, critique, and respond to relevant literature and media coverage of water resources issues.

- Write and present a well-researched policy brief addressing a current challenge or opportunity in water policy, incorporating the use of water data and other information sources.

### **Logistics:**

This course is held in-person, and students are expected to attend in-person except in cases of illness or for another approved excuse (see Assessment). The class may be recorded via Zoom, but neither synchronous nor asynchronous virtual attendance is supported. Any changes in class modality will be communicated via Canvas Announcements. This course uses an online learning management system called *Canvas* to manage content and grades. Navigate to <https://canvas.ucsd.edu/> to locate course content when the quarter commences.

### **Readings:**

Course readings will include select book chapters, academic journal publications, websites, and/or instructor-provided notes. Copies of and/or links to all required readings will be posted on Canvas. There is no textbook for this class. Optional books include:

- Grafton, R. Quentin, and Karen Hussey. Water Resources Planning and Management. Edited by R. Quentin Grafton and Karen Hussey, Cambridge University Press, 2011. Available [online](#) from the UCSD Library (restricted to UCSD IP addresses).
- Hornberger, George M., and Debra Perrone. Water Resources: Science and Society. Johns Hopkins University Press, 2019.

### **Assessment:**

Reading Responses:	20% of course grade
Group Presentation and Discussion:	20% of course grade
Policy Brief Proposal:	10% of course grade
Policy Brief:	40% of course grade
Participation:	10% of course grade

Assignment instructions will be posted to Canvas, and students are expected to submit completed written assignments through Canvas, as instructed. *Working in groups on assignments is encouraged*, but every student must write up and submit his/her own *independent* work (see Academic Integrity, below), except on the group presentation and discussion assignment, for which students will work in a group to give a single class presentation and lead a class discussion.

**Participation:** The participation grade is based on: (i) engagement in class discussions, including during the peer-led discussion following the group presentations; (ii) posting one or more relevant or interesting resources (papers, news, podcasts, etc.) to the Canvas Discussion section; and (iii) providing written

feedback on the Policy Brief proposals of two or more peers via Canvas. Students are expected to attend class in person except when the class is switched to a remote modality (as needed) or in cases of illness or for another approved excuse. Acceptable excuses include illness, which must be documented by the UCSD Student Health Services or another licensed medical provider, or a death or serious illness in the immediate family. Please notify the instructor in writing of your need to miss class, and email documentation to Nancy Gilson ([ngilson@ucsd.edu](mailto:ngilson@ucsd.edu)), *not the instructor*. Students may be excused from attending class in person and be provided a remote attendance option *prior to receiving documentation* upon the *onset* of illness or emergency; students should email the instructor to request this.

**Late Policy:** For assignments turned in late, there will be a 10% point reduction (from the maximum per-assignment points) per day late, for the first 5 calendar days. For example, for an assignment worth a total of 10 points: an assignment turned in 1 day late would receive a maximum of 9 points; an assignment turned in 2 days late would receive a maximum of 8 points, etc. No assignments will be accepted more than 5 calendar days after the due date/time without an approved and documented excuse. Acceptable excuses include illness, which must be documented by the UCSD Student Health Services or another licensed medical provider, or a death or serious illness in the immediate family. No other excuses aside from those recognized by standing University policy are acceptable. Please notify the instructor in writing of your need for an extension on assignments and/or the final project, and email documentation to Nancy Gilson ([ngilson@ucsd.edu](mailto:ngilson@ucsd.edu)), *not the instructor*.

**Grade Changes:** If you believe there has been an error or oversight in the grading of your work, you may petition the instructor to have your grade changed. To do so you must submit a written memo of no more than 200 words explaining the error and request that your grade be reevaluated. Grade change requests must be received no later than 5 calendar days after the graded assignment has been returned to you.

#### Academic Integrity:

Students are expected to submit individual and original work for all assignments unless otherwise instructed (see Assessment, above). *Working in groups on assignments is encouraged*, but every student must write up and submit his/her own work for written assignments. You will appropriately recognize and cite all sources of data or information you use. If you are unsure how to do this, please come to office hours, or ask in class.

GPS takes academic honesty seriously and does not tolerate plagiarism or other forms of cheating or dishonesty. Evidence of information-sharing, non-independent work, and/or plagiarism on the final project will be referred to the Office of Academic Integrity. More information is available at: <https://academicintegrity.ucsd.edu/>.

Students agree that by taking this course, all required papers may be submitted for textual similarity and plagiarism review via Turnitin.com. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the

Turnitin.com service is subject to the terms of use agreement posted on Canvas and the Turnitin.com site.

### Course schedule outline:

This schedule outline provides an approximate timeline for the material covered in the course and is subject to change. Updates to the schedule will be communicated through Canvas.

Week #	Date	Day	Topic	Assign Out	Assign Due (11:59pm PT)	Readings (subject to change)
1	1/10/23	Tuesday	Introduction			Hoekstra and Mekonnen, 2012; Oki and Kanae, 2006; Hornberger and Perrone 2019 Ch.1
1	1/12/23	Thursday	Surface water (SW)			WRPM 2011 Ch. 2; Hornberger and Perrone 2019 Ch.2
2	1/17/23	Tuesday	Activity (water balance model)	Reading Response 1 (week 1-2 readings)		
2	1/19/23	Thursday	Groundwater (GW)			WRPM 2011 Ch. 3; Gleeson et al., 2020; Elshali et al. 2020; Castilla-Rho et al., 2017; Hornberger and Perrone 2019 Ch.3
3	1/24/23	Tuesday	Water quality (WQ)		Reading Response 1 (week 1-2 reading)	WRPM 2011 Ch. 4; Keiser and Shapiro 2019; Allaire et al., 2019
3	1/26/23	Thursday	Climate and land use change			WRPM 2011 Ch. 1; UN Water Policy Brief 2019; Abbot et al., 2019
4	1/31/23	Tuesday	Data and models	Reading Response 2 (week 3-4 reading)		Cantor et al., 2021; Peel and McMahon, 2020; Zogheib et al., 2018; Sheffield et al., 2018
4	2/2/23	Thursday	Water and health			Levy et al., 2009; McMichael et al., 2006; Xu et al., 2020
5	2/7/23	Tuesday	Activity (hydroclimate data and health)	Policy Brief	Reading Response 2 (week 3-4 reading)	
5	2/9/23	Thursday	Institutions and governance			Kellner et al., 2021; Cain et al., 2020; Petit et al., 2016; Fantini et al., 2020
6	2/14/23	Tuesday	"	Group Presentation	Policy Brief Proposal	Ostrom, 2009; Aligica, 2006; OECD, 2018
6	2/16/23	Thursday	Economics and pricing			Loch et al., 2020; Garrick et al., 2020; Dolan et al., 2021
7	2/21/23	Tuesday	Equity and justice		Policy Brief Feedback	Tisdell, 2003; Balazs and Lubell, 2014; Iftekhar and Fogerty, 2017; Gerlak et al., 2022; Osman and Faust, 2021; Mao et al., 2022
7	2/23/23	Thursday	Group presentation/discussion (agriculture)			Cai et al., 2015; Marston et al., 2015; <a href="https://www.oecd.org/agriculture/topics/water-and-agriculture">https://www.oecd.org/agriculture/topics/water-and-agriculture</a>
8	2/28/23	Tuesday	Group presentation/discussion (domestic/residential)			Florke et al., 2018; Larsen et al., 2016; Delgado et al., 2021
8	3/2/23	Thursday	Group presentation/discussion (commercial and industrial)			Meese et al., 2022; Wu et al., 2017; Wakeel et al., 2016
9	3/7/23	Tuesday	Guest speaker: Sara Agahi, Flood Control District Manager, Department of Public Works, County of San Diego. Topic: Flood Control			<a href="https://www.sdcfd.org/content/sdc/sdcfd/about.html">https://www.sdcfd.org/content/sdc/sdcfd/about.html</a>
9	3/9/23	Thursday	Group presentation/discussion (transboundary water)			ICRC, 2021; McCracken & Meyer, 2018; Petersen-Perlman et al., 2017
10	3/14/23	Tuesday	Group presentation/discussion (coastal water)			Chen et al., 2022; Tully et al., 2019; Almar et al., 2021
10	3/16/23	Thursday	Guest speaker: Sarah Ogle, PhD student SIO Climate Sciences and CW3E Program, UCSD. Topic: Reservoir operations and equity			<a href="https://cw3e.ucsd.edu/firo/">https://cw3e.ucsd.edu/firo/</a>
11	3/21/23	Tuesday	No class (Finals week)		Policy Brief Final	
11	3/23/23	Thursday	No class (Finals week)			

### Intellectual Property:

Lectures and course materials (including those of any guest lecturers), including slides/presentations, problem sets, exams, and similar materials, are protected by U.S. copyright law and by university policy. Instructors are the exclusive owners of the copyrights of the materials they create. You may take notes and make copies of course materials for your own use. You may also share those materials with another student who is enrolled in or auditing this course. You may not reproduce, distribute or display (post/upload) lecture notes or recordings or course materials in any other way —whether or not a fee is charged — without the appropriate express prior written consent of the instructor. You also may not allow others to do so. If you do so, you may be subject to student conduct proceedings under the UC San Diego Student Code of Conduct. Similarly, you own the copyright to your original writing (your submitted problem sets, reading discussion posts, and exams). If the instructor is interested in posting your submitted assignments to the course web site (e.g., as an example), the instructor will ask for your

written permission. See: <https://copyright.universityofcalifornia.edu/resources/systemwide-resources.html>.

#### Commitment to Open Discussion and Privacy:

Please note that class sessions may be recorded and posted to Canvas to accommodate students who cannot attend class in real time. The instructor is committed to free inquiry and open discussion. However, with everything recorded and made available online, please be aware that your record of in-class participation may be accessible to unintended audiences. If you are concerned about this, please contact the instructor to discuss alternative ways of participation for privacy protections during class.

#### Accommodations:

If you have a disability for which you are or may be requesting accommodations, please contact the Office for Students with Disabilities (OSD) (<https://osd.ucsd.edu/>). Students requesting accommodations for this course due to a disability must have a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD: <http://disabilities.ucsd.edu>), which is now located on the 3rd Floor of Pepper Canyon Hall. AFA letters are now provided to Faculty electronically by OSD, per student request. Requests for accommodation must be made at least two weeks in advance of the date upon which the student would like receive accommodations. Contact Nancy Gilson ([ngilson@ucsd.edu](mailto:ngilson@ucsd.edu)), *not the instructor*, for further information.

#### GPS Writing Tutor:

**Contact:** Katy Norris ([kenorris@ucsd.edu](mailto:kenorris@ucsd.edu))

**Location:** Room 3132 or on Zoom at <https://ucsd.zoom.us/j/3379089703>. Email in advance if you plan to join office hours via Zoom rather than in-person.

**Times:** Monday and Wednesday 1:00 pm – 3:00 pm; Tuesday and Thursday 11:00 am – 1:00 pm

Any GPS student may drop by the Writing Tutor's office hours for general questions, brainstorming, or discussion of your work. If you would like to discuss a specific draft of your written work, you may schedule an appointment during office hours via the [Calendly page](#). Please email the prompt and your draft to the Writing Tutor at least 24 hours before the appointment to ensure a meaningful and constructive discussion. Please note that the Writing Tutor cannot give feedback on the content of your work but can provide feedback on the strength of your argument, clarity, organization, writing style, and citations. The job of the Writing Tutor is not to copy edit, so the tutor will not provide extensive grammar edits. If you seek immediate feedback or are working on a tight deadline, you are welcome to drop-in during office hours, although feedback will be less thorough. For feedback on structure, clarity, and/or citation protocols over email, please send the prompt and your draft to the Writing Tutor, who will provide feedback over email within 48 hours of receiving the draft.

Other Resources:

Other resources available to students, in-person and/or remotely, include:

- UCSD Teaching and Learning Commons (<https://commons.ucsd.edu/for-students/>)
- UCSD Mental Health Services (<https://caps.ucsd.edu/>)