OVERVIEW

Arts & Science Action Research Internship is structured around a two-part mandate. The first draws on established traditions of lively class discussion, critical reading, thoughtful writing, in-depth research, and faculty mentorship. The second expands on these time-honored practices by using them to address real-world problems outside the classroom.

The overall focus of this year’s work concerns urban environmental issues; we’ll concentrate on supporting and enhancing NYU’s commitment to sustainability by looking at urban hydrology – that is, water infrastructure in cities. Specifically, we’ll work toward helping University leadership submit a successful Green Infrastructure Grant to the New York City Department of Environmental Protection (DEP). The proposal will also be a blueprint on which to model continued innovation in support of the University’s sustainability initiatives.

Students will work with and learn from NYU staff and faculty, urban planners, city officials, and industry experts through class lectures, field trips, and research. Class meetings are organized around themes relevant to challenges of local, regional, and international urban hydrology. Readings are drawn from anthropology, history, economics, and urban studies, among other fields. Writing assignments include reflection papers, components of the DEP grant, occasional field reports, and a longer final assessment of the semester’s work. The course culminates in presentations about specific results and larger project goals.

Green Infrastructure Campus Plan

Stormwater management is a pressing issue in any urban context, but it’s especially urgent in New York. The city’s aging sewer system is regularly overwhelmed by as little as three centimeters of rain; when that happens, raw sewage is discharged directly into local waterways. The DEP’s Green Infrastructure Grants intend to help mitigate this harm. NYU could be a prime candidate for such a grant, particularly on the Washington Square campus. The goal of the class is a completed draft of a grant application that the University can submit to the DEP.

Toward that end, students will explore green infrastructure initiatives that encompass a variety of strategies and interventions to address stormwater concerns in the design and maintenance of urban landscapes. They will visit infrastructures relevant to the city’s water supply, assess the feasibility of specific design interventions, and develop a concept plan for a specific site within the Washington Square campus.
LEARNING GOALS – OVER ALL
• Become familiar with some histories of, debates about, and current challenges inherent to urban water infrastructure, particularly as they apply to New York City.
• Design an active, hands-on research plan. This involves collecting data, writing drafts, crafting and sharing visualizations.
• Assess and diagnose variables relevant to a specific environmental challenge.
• Propose solutions, either whole or in part, to that challenge.
• Understand the complexities of bureaucratic structures, and bureaucratic culture more generally, as these both help and hinder the cause.
• Develop collaborative, supportive relationships with classmates. Group work is a key element of the course.

LEARNING GOALS – GREEN INFRASTRUCTURE/STORMWATER MANAGEMENT
• Understand green infrastructure strategies used in cities today.
• Understand the specific green infrastructure needs and challenges of the NYU’s Washington Square campus.
• Develop a green infrastructure campus plan to address those needs and challenges.
• Develop a concept plan for a specific site on NYU’s campus for a green infrastructure project that will form the basis of a DEP Green Infrastructure Grant application.

REQUIREMENTS
Attend each class and complete homework assignments on time. Read, watch, listen to the assigned sources by the dates listed, participate in class discussions, facilitate class discussion of specific texts according to the schedule we establish at the beginning of the semester, meet project element deadlines, participate in field trips, and present your work with your team at our last session.

Writing assignments include reflection essays, elements that build toward the final projects, and a final project document. The final document will include a report to University leadership and a draft of a grant to the city’s Department of Environmental Protection.

Reflection essays are brief – between 250 and 500 words – and are individually written. The final projects are longer – between 500 and 1500 words – and are created collaboratively. These two components of the class will be the basis of presentations in early December.

Class participation includes each student assuming responsibility for leading class discussion about the day’s material at some point during the semester (a schedule will be worked out in the first class meeting). It should include an overview of the week’s themes, specific points from the texts that illustrate those themes, and questions that inspire engaged response. Facilitators should not lecture but should elicit and then guide the class conversation. Discussion facilitation can be organized collaboratively – in other words, do it with a partner if you’d rather not go solo.

Course materials are in NYU Classes. The Resources section is for general references, source material, and other relevant information. Assignments, readings, and schedules are under Syllabus. Post completed writing assignments in Forums, in the appropriate subsections -- one for Reflection Essays, another for Project Elements. Do not submit the writing assignments as attachments; upload or write your text within the Forums portal.
The field trips are an integral part of the semester.

Saturday, Sept 16, 1:00p: Newtown Creek Walking Tour, Brooklyn
Week of Sept 20: Campus sustainability/footprint study with George Reis
Sunday, Sept 24, 1:00p: Kayaking in Hudson, Manhattan
Sunday, Oct 1, 9:45a: Freshkills Park Discovery Day, Staten Island

To be scheduled:
Visit to the Greenwich Village Society for Historic Preservation to see the original plans for the Saskia Garden, Manhattan
Tour of the DEP Archives, Manhattan
Tour of the Newtown Creek Water Treatment Plant, Brooklyn/Queens border

Grades are calculated as follows:
- Class participation (includes leading discussions of course material) – 25%
- Reflection essays (7 in total, each 250-500 words) – 20%
- Project elements (4 in total, each 500-1500 words) – 15%
- Presentations (on the last day of class; a culmination of the semester’s work) – 15%
- Final project (form and format to be determined) – 25%

SCHEDULE
I. INTRODUCTIONS & BEGINNINGS
1. Sept 6 | Ways & Means of Action Research
Who are we, why are we here, what are we intending to do, and how will we get it done?

2. Sept 13 | History & Specificity
Read

Write
Reflection Essay 1 [250-300 words]
What do you see as the biggest challenge in working toward a DEP grant? Refer to the readings for this week.

Field
Saturday, Sept 16 | 1:00 (meet in Manhattan) or 2:00 (meet at tour start in Brooklyn)
Newtown Creek Walking Tour
Includes lunch before or dinner after, depending on timing
3. Sept 20 | The Goal: A Grant

**CLASS MEETS IN BOBST (exact room TBA)**

We’ll go over the DEP Green Infrastructure Grant Program description and look at the work your peers did this past summer in moving toward a completed grant application.

**Read**

New York City Department of Environmental Protection website, with particular attention to the pages listed here. They are full of important information, so take your time, explore the links, and delve into the details. Be prepared to discuss!

- **Stormwater Grant Program Overview**
- **Green Infrastructure in New York City** (don’t skip the video)

Lowe, Tiffany. 2016. Green Infrastructure Grant Program. Department of Environmental Protection, New York City. / p 1-50

**Write**

- **Reflection Essay 2** [250-750 words]

What did you learn from the DEP website that you didn’t already know? What most surprised you? intrigued you? alarmed you? How did the Newtown Creek tour influence your understanding and interpretation of the DEP information?

**Field**

- **[date/time TBD]**
- Tour the Washington Square campus with George Reis.

Sunday, Sept 24 | 1:00p
Kayak in the Hudson River
**Downtown Boathouse**, Pier 26, Manhattan

4. Sept 27 | Realities of Urban Hydrology

**Read**

- **Villanova Urban Stormwater Partnership** (VUSP)

Villanova has established one of the nation’s premiere centers for research into stormwater mitigation techniques and green infrastructure innovation. Your reading assignment this week is to become familiar with the VUSP website. It will take some time; there is a wealth of material, detail, and practical information, all of which is potentially relevant to our work. When you read, consider possibilities described by VUSP in the context of what you learned when walking the campus with George Reis.

**Write**

- **Reflection Essay 3** [250-300 words]

When considering potential stormwater mitigation strategies for NYU, what specific challenges do you understand now that you’ve walked the campus with George Reis? What examples from VUSP might be useful here and why? Be specific. (You’ll write more about this question next week).
Field
Sunday, Oct 1 | 9:45a -- Meet at the Staten Island Ferry Terminal in Battery Park
Freshkills Park Discovery Day, Staten Island

Fresh Kills was a wetland on the west coast of Staten Island until 1948, when it was chosen as a landfill site. Over time it grew into the largest landfill in the world, and by the late 1990s was the last place where New York could dispose of its trash within city boundaries. It closed in March of 2001, was opened in September of 2001 for investigation and recovery work related to the September 11 attacks, and is now becoming a remarkable park. Though much of it is still off limits, the annual Discovery Day invites the public to stroll, hike, bike, jog, kayak, ride horses, make art, hear music, fly kites, and generally explore.

II. CHALLENGES, SEEN & UNSEEN
5. Oct 4 | Logistics
Guest speaker: Richard Mueller -- Director, Legislative Affairs, DEP

Read


Write
Project Element 1 [500-750 words]
Using examples from VUSP, from your campus walk, and from this week’s readings as your guide, propose a possible green infrastructure/stormwater mitigation project for NYU’s Washington Square campus. Be prepared to fully explain and defend your choice in class.

Choose one, or do both for extra credit: [250-300 words each]

Reflection Essay: Freshkills or Kayaking
Freshkills: What’s your take-away from that adventure? How did the Discovery Day inform your understanding of green infrastructure?

Kayaking: What’s it like to experience New York as a paddler? How did it change your perspective on urban life? What insights did it give you for the consequences of living in a city that has CSO infrastructure?
6. Oct 11 | Invisible Labors
Read
Reid, Donald. 1991. Cesspool Cleaners and Sewermen and Conclusion. From *Paris Sewers and Sewermen: Realities and Representations*. Cambridge, MA: Harvard UP. / p 87-106 & notes, p 207-211; p 179-182 & notes, p 229-230. [If the links don’t work, find the chapters by going through Bobst.]

Sewage Treatment Worker Exam Notice, Department of Citywide Administrative Services, City of New York; 2011. (3 pages)


Write
Reflection Essay 4 [250-300 words]
If you were a sewer treatment worker, what would be your biggest challenge? What risks might you encounter, and how would you keep yourself safe? What realities of your work would you want the public to understand?

7. Oct 18 | Shared Labors
Read


Write
Project Element 2 [500 words]
Your final project requires specific components. What are those components, what are your plans for putting them together, and how are their necessary labors divided amongst your team members?
8. Oct 25 | “Natural” Disasters?
Read

Write
Reflection Essay 5 [250-500 words]
Last August, floods inundated parts of South Asia, Sierra Leone, and Texas. Consider a city in one of these locations. How might green infrastructure or/and stormwater management infrastructure have helped mitigate the devastation? What specific measure(s) could have made a difference?

III. URBAN FLOWS
9. Nov 1 | Regional Confluences
Guest speaker: Melissa Enoch -- Senior Policy Analyst, Department of Environmental Protection
Read

Tracking
How much water do you use in a day? Choose one 24-hour period and take note of how often you use water, and for what task. Showering? Washing clothes? Brushing your teeth? Look to the [USGS](https://water.usgs.gov/services/data/watuse), [Three Actions](https://www.epa.gov/watersense/water-use-in-3-ways), and the EPA [WaterSense Calculator](https://www.epa.gov/watersense) for guidance.

Write
Reflection Essay 6 [250-500 words]
Stormwater runoff would be a slightly smaller environmental crisis if New Yorkers used less water in the first place. Based on this week’s readings and on your experience tracking your own water use, give three suggestions that your fellow city-dwellers could follow to minimize their (our) water use.
10. Nov 8 | Global contexts
Read


Write
Project Element 3 [250 – 500 words]
Write a detailed outline of your section of the DEP grant. Be as specific as possible; draw on insights from last week’s presentation by Melissa Enoch.

11. Nov 15 | Cultures of Bureaucracy
Read


Write
Reflection Essay 7 [250-500 words]
What to you anticipate is the most difficult challenge in the DEP grant process? Explain your thinking in detail. Refer to specific sources (class discussions, source material, field trips, guest lectures, etc.)

12. Nov 22 | Case Studies
NOTE: Class does not meet but you’re responsible for the readings.
Read
US Environmental Protection Agency. 2010. Green Infrastructure Case Studies: Municipal Policies for Managing Stormwater with Green Infrastructure. [This is about 70 pages long; break it into sections and delegate across your group.]


**IV. INTO THE FUTURE**

13. Nov 29 | Practicalities

**Read**


**Write**

Project Element 4 [500-1000 words]
Put together a draft of your full proposal that combines the contributions of your whole team.

14. Dec 6 | Debrief & Presentation Prep

Today we'll discuss the dynamic of our time together. What has worked well? What can be improved? We'll also fine-tune your presentations. What roles and responsibilities have you set up within your teams? What rough outline have you crafted for your presentations? What sources, images, and platform are you using?

**Write/Organize**

A complete draft of your presentation; be ready to do a run-through in class.

15. Dec 13 | Presentations

Invite guests!

NOTE: Final draft of DEP Grant Proposal due by 5:00p on Wednesday, December 20.
regard to any University program or activity. The Henry and Lucy Moses Center for Students with Disabilities (CSD) determines qualified disability status and assists students in obtaining appropriate accommodations and services. Any student who needs a reasonable accommodation based on a qualified disability is required to register with the CSD for assistance.

NYU Writing Center
411 Lafayette, 4th Floor | 212-998-8866 | writingcenter@nyu.edu
Writing is hard work. The Writing Center can help you clarify what you’re trying to communicate, teach you skills that make all writing projects a little less daunting, and equip you to be a better writer in all your classes. The key: reach out to them early and get on their schedule! If you wait until later in the semester, their available appointments may already be filled.

NYU Information Technology Services
10 Astor Place, 4th Floor | 212-998-3333 | AskITS@nyu.edu

NYU Library Services
70 Washington Square South | 212-998-2505

NYU Office of Global Services
561 LaGuardia Place | 212-998-4720 | ogs@nyu.edu

NYU Wellness Exchange
726 Broadway & various other locations | 212-443-9999 | wellness.exchange@nyu.edu
Departments include the Student Health Center; Counseling and Wellness Services; Health Promotion Office; and the Office of Lesbian, Gay, Bisexual, and Transgender Student Services.

ACADEMIC INTEGRITY
Institutions of higher learning are built on knowledge that has been shared across centuries. They are one of humankind’s most enduring and important achievements. Sharing knowledge within and across a range of intellectual communities continues to be the hallmark of higher education today. It is a time-tested dynamic that relies on good will, hard work, and deep trust.

That trust is maintained by honoring rigorous standards of academic integrity. Both Liberal Studies and the College of Arts & Science address this in detail. The LSP guidelines are found here; CAS, here. These documents make clear that academic integrity violations have grave and lasting consequences.

One violation in particular is given special attention, and both guides are unambiguous: plagiarism is theft and will be treated as such. The penalty for plagiarism and for other violations of academic integrity in this class is a failing grade for the assignment in question. In some cases it will result in a failing grade for the class itself; depending on the severity, it can be grounds for dismissal from the University.