



Global Learning Using the Lens of Wicked Problems: Supplement

Marja Bakermans

Courtney Kurlanska

Derren Rosbach

Elisabeth (Lisa) Stoddard

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SAMPLE SYLLABUS #1

FY1100 Great Problems Seminar: Extinction: Who will survive?

Worcester Polytechnic Institute, Worcester, Massachusetts

Class Location: Salisbury Labs 305

Class Meetings: Tuesday and Friday 10 am to 11:50 am

1. Instructor Information

Professor: Dr. Marja Bakermans

Professor: Dr. David Spanagel

Office: Goddard Hall 005

Office: Salisbury Labs 239

Email: mbakermans@wpi.edu

Email: spanagel@wpi.edu

Office Hours: Thurs 12-1 or by appointment

PLAs: Kaitlyn Valla; Dylan Felty; Kristen Chan

2. Information about Course Support Staff

This class requires students to find information sources for a research papers or projects. Appropriate sources include scholarly and peer-reviewed journal articles, scholarly books, and well-respected news magazines and newspapers. Ms. Lori Steckervetz is our Research and Instruction Librarian.

3. Course Goals and Learning Objectives

Throughout most of Earth's history, species disappeared at an average rate of 1 to 5 species per year. Fossil evidence shows that five mass extinction catastrophes have occurred. Scientists estimate that we are witnessing the sixth mass extinction; species are currently disappearing at 1,000 to 10,000 times the normal background rate. This Great Problems Seminar will examine scientific debates about past and present causes of extinction, the factors that contribute to vulnerability or resiliency of endangered species, and the consequences of species loss. Where are extinctions currently having the greatest impact? How might conservation efforts prevent extinctions? What can we expect from efforts to revive extinct species? Student project groups will focus on specific extinction-related problems, and develop and present sustainable solution approaches based on their investigations.

This GPS carries 1/3 unit BB1000 credit and 1/3 unit HU1100 credit.

In this class, students will work to accomplish the following:

1. Describe and assess human-related causes of extinction and its consequences.
2. Explain the need for all levels of biodiversity (i.e., genes, species, and ecosystem) in the role of conservation of species.
3. Know the key stakeholders in conservation including scientists, political leaders, business leaders, government officials, philanthropists, hunters, hikers, farmers, ranchers, fishermen, wilderness enthusiasts, and others.



Through our work together, we will meet the following *learning objectives*:

1. **TEAMWORK**: Collaborate effectively on a team
2. **RESEARCH**: Find varied, credible sources, assess their claims and relevance, and use them appropriately
3. **WRITING**: Produce clear, effective, evidence-based writing
4. **PRESENTING**: Prepare and confidently deliver engaging and effective presentations
5. **APPROACH TO PROBLEMS**: When working on complex, open-ended problems, be able to identify answerable questions, and select and evaluate suitable solutions
6. **INTERDISCIPLINARY**: Describe the causes and consequences of the “Great Problem” from an interdisciplinary perspective
7. **CULTURAL AWARENESS**: Understand and articulate the differences in experiences of the “great problem” for people from different races/cultures/regions/gender/economic status
8. **VALUES**: Describe your values and those of others as they relate to the great problem.

4. Required Course Materials

Text: Elizabeth Kolbert, *The Sixth Extinction* Picador reprint (paper, 2015) - ISBN 978-1250062185.

Additional readings will be posted on the course page in Canvas in the Files Folder.

5. Tentative Course Schedule

Session 1 (8/25) Introduction

No Readings due on the first day of class.

Assignment 1: Reflection on Pretest Discussion (Due 8/29)

Session 2 (8/29) TOPIC: Deep History and Mass Extinctions/ ATC Visit on presentations

Assignment 1 due (Pretest Reflection)

Readings due: Prologue and Ch I in *The Sixth Extinction* (Kolbert pp. 1-22);

David M. Raup, Extinction in the Geologic Past chapter from Donald E. Osterbrock and Peter H. Raven, eds., *Origins and Extinctions* (1992) [pdf available on Canvas]

Video: Mass Extinction: Life at the Brink, part 1 [link on Canvas]

Assignments 2 & 3: Species Histories /Annotated Bibliography Assignment (Due 9/5)

Session 3 (9/1) TOPIC: The Revolutionary Discovery of "Extinction" as an Idea / Library Visit

Readings due: Ch II The Mastodon's Molars in *The Sixth Extinction* (Kolbert pp. 23-46)

Video: Mass Extinction: Life at the Brink, part 2 [start - 16:00, link on Canvas]

Session 4 (9/5) Species Histories Presentations

Assignments 2 & 3 due (Species Histories /Annotated Bibliography assignments)

Readings due: Ch III The Original Penguin in *The Sixth Extinction* (Kolbert pp. 47-69)

Assignment 4: Presentation summary (Due 9/12)



Session 5 (9/8) TOPIC: Biodiversity and Current Extinctions

Readings due: E.O. Wilson, Ch3: How Much Biodiversity Survives Today from *Half-Earth: Our Planet's Fight For Life* (2017) [pdf available on Canvas];

Barnosky, *et.al.*, Has the Earth's sixth mass extinction already arrived?, *Nature* 471 (2011): 51-57. [pdf available on Canvas]

Video: Mass Extinction: Life at the Brink, part 2 [time 16:00 - end, link on Canvas]

Assignment 5: Ethics Assignment (Due 9/15)

Session 6 (9/12) TOPIC: The Anthropocene

Assignment 4 due (Presentation summary)

Readings due: Ch IV The Luck of the Ammonites and Ch V Welcome to the Anthropocene in *The Sixth Extinction* (Kolbert pp. 70-110);

Schmidt, *et.al.*, Ethics in the Anthropocene, *The Anthropocene Review* 3 (2016): 188-200.

Assignment 6: Advocacy Group assignment (Due 9/19)

Session 7 (9/15) TOPIC: Consequences of Extinction

Assignment 5 due (Ethics)

Video: Some animals are more equal than others [link on Canvas]

Readings due: Ch VI The Sea Around Us in *The Sixth Extinction* (Kolbert pp. 111-124);

Cheryl A. Logan, A Review of Ocean Acidification and America's Response, *BioScience* 60 (2010): 819-828. [pdf available on Canvas]

Session 8 (9/19) Advocacy Group Presentations

Assignment 6 due (Advocacy Group assignment)

Readings due: Ch VII Dropping Acid in *The Sixth Extinction* (Kolbert pp. 125-147);

Shinzato, *et.al.*, Genome-wide SNP analysis explains coral diversity and recovery in the Ryukyu Archipelago, *Scientific Reports* (online, 2015) [pdf available on Canvas]

Assignment 7: Campus biodiversity assessment (due 9/29)

Session 9 (9/22) TOPIC: Solutions to Current Crisis /Identities, Assets, Communication Styles, and Teamwork

Readings due: Ch VIII The Forest and the Trees in *The Sixth Extinction* (Kolbert pp. 148-172);

Bennett, *et.al.*, Spending limited resources on de-extinction could lead to net biodiversity loss, *Nature Ecology & Evolution* 1 (2017), 0053: 1-4. [pdf available on Canvas]

Video: The Science Behind De-extinction [link on Canvas]

Assignment 8: Critical Reflection on student assets (due 9/29)

Session 10 (9/26): TOPIC: Gambler's Ruin/ Brainstorming project ideas

Readings due: Ch IX Islands on Dry Land in *The Sixth Extinction* (Kolbert pp. 173-192);

David M. Raup, Gambler's Ruin and Other Problems chapter from *Extinction: Bad Genes or Bad Luck?* (1992). [pdf available on Canvas]; and

Reed, et.al., Estimates of minimum viable population sizes for vertebrates and factors influencing those estimates, *Biological Conservation* 113 (2003): 23-34. [pdf available on Canvas]

Pitch a Project (due 10/3)

Session 11 (9/29) Team formation / Possible visits from Community Partners

Assignment 7 due (Campus biodiversity assessment); and Assignment 8 due (Critical Reflection on student assets)

Readings due: Ch X The New Pangaea in *The Sixth Extinction* (Kolbert pp. 193-216);

Pimm, et.al., The biodiversity of species and their rates of extinction, distribution, and protection, *Science* 344 (2014): 987-997. [pdf available on Canvas]

Project Proposal and Presentations (due 10/10)

Session 12 (10/3) Pitch a project presentations

Pitch a project due

Readings due: Ch XI The Rhino Gets an Ultrasound in *The Sixth Extinction* (Kolbert pp. 217-235);

Soga and Gaston, Extinction of experience: the loss of human-nature interactions, *Frontiers of Ecology and the Environment* 14 (2016): 94–101. [pdf available on Canvas]

Session 13 (10/6) Research Design (qualitative vs quantitative) / Work day / Library consultation

Readings due: Ch XII The Madness Gene in *The Sixth Extinction* (Kolbert pp. 236-258);

E.O. Wilson, Chapters 20 & 21: Threading the Bottleneck and What Must be Done from *Half-Earth: Our Planet's Fight For Life* (2017) [pdf available on Canvas]

Session 14 (10/10) Project Proposal and Presentations due

Readings due: Ch XIII The Thing With Feathers in *The Sixth Extinction* (Kolbert pp. 259-269)

Grading Policy/Summary for A-term (sessions 1-14)

Overall Assignment Grade - 45%

Pitch a Project- 5%

Project Proposal- 20%

Project proposal presentation- 10%

Attendance and Participation- 20%

Session 15 (T 10-24) Teamwork/group problem solving

Readings: CH 3 in *Team Writing* book

Assignment 1: Intersession assignment: Imagine 3017 (Due 10/27)

Assignment 2: Revised proposal (Due 11/3)

Research Notebook: Research Notebook Entry #1 (due 10/27)



Session 16 (F 10-27) Work day / Library in-class work

Assignment 1 due: Imagine 3017

Research Notebook entry #1 due

Readings: CHs 1 & 3 in *Team Writing* book

ALL on Canvas: Understanding Teams (Chap 1); Team Beginnings (Chap 3)

Assignments 3 & 4: Contact assignments, part 1 and 2 (Due 10/31 and 11/10)

Session 17 (T 10-31) Teamwork Equity and Inclusion

Assignment 3 due: Contact assignment, part 1

Assignment 5: Team equity reflection (due 11/7)

Readings: CHs 2 and 4 in *Team Writing* and other Readings on Canvas

Session 18 (F 11-3) Project revision presentation

Assignment 2 due: Revised proposal

Research Notebook entry #2 due

Session 19 (T 11-7) Project Seminars (Teams: Air pollution and Landscaping with native plants)

Assignment 5 due: Teamwork equity reflection

Readings: On Canvas

Readings: CH 8 in *Team Writing* and CH 11 (Problem Solving) on Canvas

Session 20 (F 11-10) Project Seminars (Teams: Seal overpopulation and Piping plovers)

Assignment 4 due: Contact assignment, part 2

Research Notebook entry #3 due

Readings: CHs 5 & 6 in *Team Writing*

Readings: on Canvas

Session 21 (T 11-14) Project Seminars (Teams: Water pollution and Salisbury Pond pollution)

Readings: On Canvas

Session 22 (F 11-17) Project Seminars (Teams: Bats WNS and Soil bacteria)

Readings: CH 7 in *Team Writing*

Research Notebook entry #4 due

Session 23 (T 11-21) Project seminars (Teams: Canada Lynx and Red-bellied Cooter)

Research Notebook entry #5 due

Poster draft (Due 12/1)

Assignment 6: Final poster and presentation (due 12/12)

Assignment 7: Final Report (Due 12/15)

F 11-24 - NO CLASS



Session 24 (T 11-28) Work day / ATC presentation about posters

Session 25 (F 12-1) Present Draft Poster
Research Notebook entry #6 due

Session 26 (T 12-5) Work day

(W 12-06) Submit final poster to ATC by **NOON!** (They will not accept late posters so go early)

Session 27 (F 12-8) Poster Practice Session (pick up posters before class)

Tuesday 12-12 Poster Session 1-3 pm (there is no class earlier in the day)

Session 28 (R 12-15) Discussion and feedback session
Final Report Due before class
Research Notebook entry #7 due - Statement of Learning

IMPORTANT NOTE: The above schedule, policies, procedures, and assignments in this course are subject to change. Professors Spanagel and Bakermans reserve the right to make changes to the Course Syllabus throughout the term.

Grading Policy/Summary for B-term (sessions 15-28)

- Intersession Creative Writing Assignment – 5%
- Revised proposal – 10%
- Contact Assignments – 5%
- Teamwork equity reflection – 5%
- Project Seminar – 10%
- Research notebook (7 total) – 15%
- Final poster and poster presentation – 20%
- Final written report – 20%
- Attendance and participation – 10%

IMPORTANT NOTE: The above schedules, policies, procedures, and assignments in this course are subject to change. Professors Bakermans and Spanagel reserve the right to make changes to the Course Syllabus throughout the term.

6. Teaching Methodology

This course is hands-on and application oriented. By its design, you will have the opportunity to explore, clarify, and strengthen your problem solving skills and group interpersonal dynamics. Please be aware that it is expected that you will experience a certain level of ambiguity and perhaps even a feeling of being overwhelmed at times. We will explore things that will be unclear and uncharted. You will be expected to deal with the ambiguity and have the courage



to explore different ideas without knowing the answers. This course will be presented through a combination of chapter materials, structured group discussions and activities, self-reflection assignments, and group presentations/projects.

Please be aware that it is strongly expected that each student will invest a minimum average of 12 hours per week engaged in outside work for this GPS course. This is consistent with the standard of working three (3) hours outside of class for every one (1) hour of classroom time. You will need to work in groups so you must make yourself available to your group members outside of the scheduled classroom time. To be successful in this GPS course, you must use effective time management and project planning tools.

8. Course Policies / Student Responsibilities

Course Adaptations or Accommodations Because of Disability

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with us, please make an appointment as soon as possible. If you have not already done so, students with disabilities who believe that they may need accommodations in this course are encouraged to contact the Office of Disability (ODS) as soon as possible to ensure that such accommodations are implemented in a timely fashion. The ODS is located in Daniels Hall. Their phone number is 508.831.4908 and email is disabilityservices@wpi.edu.

Student Responsibilities

In this course, each student is expected to:

1. Attend each class session in its entirety, participate in a positive and professional manner that is reasonable of a college student and contribute to all class activities in a purposeful manner that ensures that the course objectives are reached, if not exceeded. If a student misses more than four (4) hours of scheduled classroom time, she/he will be asked to withdraw from the course if possible or earn no credit (NR) for the course. Repeated tardiness (that is, late arrival for more than three class sessions) will result in the lowering of the course grade by one letter grade.
2. Come to class prepared. Specifically, you are to (a) read the assigned readings listed in the section marked 'reading' on the course schedule before coming to class and (b) be prepared to work and contributed in a purposeful manner during each class session.
3. Meet all deadlines as described on this Course Syllabus document or any written addendums to this course outline. There are no make-ups or extra credit assignments. With the exception of extreme emergency conditions, no grade of "Incomplete" will be given.
4. The use of cell phones and similar electronic devices are not allowed during class and should be turned off and put away before entering the classroom. You are welcome to use a computer to take notes, but not for anything else. Students violating these policies will be asked to leave.
5. Do her or his best in this course. You will be responsible for your own work product in this course and your professional reputation stands on its own.
6. Ask for help whenever you have questions.



SAMPLE SYLLABUS #2

FY1100 Great Problems Seminar: The World's Water Worcester Polytechnic Institute Course Syllabus - A and B terms

1. Instructor Information

2. Information about Course Support Staff

3. Course Goals and Learning Objectives

We are in the midst of a global water crisis. The quantity of freshwater on earth is declining, and much of the freshwater that is available is threatened by pollution. With a changing climate and growing global population, the rising global demand for water has led to higher water costs. This has made the global water crisis an issue of affordability for some. Others lack access to water due to absent or failing water infrastructure due to poverty, mismanagement, and/or devastating wars. This class examines the depth and breadth of these water issues from technical, ethical, political, economic, social, and ecological perspectives. Understanding the diversity and complexity of water issues is the key to becoming effective engineers and effective global citizens of the 21st century.

In this class, students will work to accomplish the following:

- a. Identify and critically analyze local, regional, and global water problems
- b. Identify and analyze established and innovative water technologies
- c. Identify and analyze different approaches to solving water problems via water governance, market-based solutions, and technological-based solutions.
- d. Identify and critically analyze your own role as a water user, polluter, and sustainer; and examine your ability to make positive changes as an individual and as an engineer.
- e. Identify and critically analyze the key stakeholders involved in water, including citizens, business owners, policy makers, non-profit organizations, scientists, plants, and animals.

Learning Objectives (Student Learning Outcomes)

While water is the content focus on this Great Problem Seminar, our learning objectives are as follows:

1. **TEAM WORK:** Collaborate effectively on a team
2. **RESEARCH:** Find a diversity of credible sources, assess their claims and relevance, and use them appropriately
3. **WRITING:** Produce clear, effective, evidence-based writing
4. **PRESENTING:** Prepare and confidently deliver engaging and effective presentations
5. **APPROACH TO PROBLEMS:** When working on complex, open-ended problems, be able to identify answerable questions, and select and evaluate suitable solutions through the application of multiple perspectives and disciplines.

6. CULTURAL AWARENESS: Articulate the differences in experiences of the “great problem” for various stakeholders. This is essential to the development and acceptance of the proposed solution.
7. VALUES: Describe your values and those of others as they relate to addressing the great problem.

4. Information on Readings and Required Course Materials

Required Course Textbooks

1. Wolfe, Joanna. 2010. *Team Writing: a Guide to Working in Groups*. Boston: Bedford/St. Martin's. You can find this at the bookstore, on Amazon for \$18 (used are cheaper), and it is available at the library on reserve.
2. The rest of the texts for the class will be available on our MyWPI page.

5. Teaching Methodology

This course is hands-on and application oriented. By its design, you will have the opportunity to explore, clarify, and strengthen your problem solving skills and group interpersonal dynamics. Please be aware that it is expected that you will experience a certain level of ambiguity and, perhaps, even a feeling of being overwhelmed at times in this Great Problem Seminar. You will be expected to deal with the ambiguity and explore different ideas without knowing the answers. This, according to poet and environmental activist Wendell Berry, is when we get *real work* done -- when we struggle to find answers. Challenges and frustration can lead to innovation and discovery.

This course will be presented through a combination of articles, structured group discussions and activities, self-reflection assignments, and group presentations and projects. Please be aware that it is strongly expected that each student will invest a minimum average of 12 hours per week engaged in outside work for this GPS course. This is consistent with the standard of working three hours outside of class for every one hour of classroom time. You will need to work in groups, so you must make yourself available to your group members outside of the scheduled classroom time. To be successful in this GPS course, you must use effective time management and planning tools.

6. Grading Summary

1. Controversial Water Use Essay (5%)
2. Personal Water Use Log Part and Analysis (10%)
3. Water Infrastructure Micro Project Presentation (10%)
4. Annotated Bibliographies for Three Projects (15%)
5. Two Peer Review Assignments (10%)
6. Water Problems Micro Project Presentation (15%)
7. Water Ethics Documentary Reflection (5%)

8. Problem Proposal Presentation (15%)
9. Problem Proposal (15%)

7. Course Schedule

The schedule is subject to change. Our MyWPI page will have the most up to date daily assignments, readings, and announcements. Students will submit assignments via MyWPI. The specific time and date each assignment is due will be noted on MyWPI under the “Daily Course Schedule”.

Course Schedule

| Date | Topic | Readings/Assignments DUE |
|---|---|---|
| Session 1: What is water security? | | |
| Thurs 8/27 | <ol style="list-style-type: none"> 1. Course Introduction 2. Water security and Sustainability | None |
| Session 2 & 3: Where does our water come from and where does it go? | | |
| Mon 8/31 | <ol style="list-style-type: none"> 1. Team Collaboration Methods 2. Research workshop 3. Tutorial on presenting projects | <ol style="list-style-type: none"> 1. Wolfe, 2010, Ch. 1 Planning Your Collaboration, in Team Writing: a Guide to Working in Groups 2. Controversial Water Use Essay due |
| Thurs 9/3 | <ol style="list-style-type: none"> 1. Students present Water Infrastructure Micro Projects in class 2. Water Sources and Ecosystems | <ol style="list-style-type: none"> 1. Annotated Bibliographies from Water Infrastructure Project Due Wednesday, 9/2 by 11pm 2. Water Infrastructure Micro Projects due in class. |
| Session 4: How do we use water, and why is water scarce? | | |
| Mon 9/7 | No class | <ol style="list-style-type: none"> 1. Read Wolfe, 2010, Ch. 1,2, and 3 in Team Writing: a Guide to Working in Groups 2. Team Charter, Task Schedule and Team manager Due Tuesday 9/8 by 11pm. <i>Use instructions from chapters 1,2, and 3 to choose a team manager and to construct a team charter and task schedule.</i> |
| Thurs 9/10 | <ol style="list-style-type: none"> 1. Types of water scarcity 2. Water Taste Test 3. Discuss personal water use logs | <ol style="list-style-type: none"> 1. Read Robbins et al, 2010, Chapter 13: “Bottled Water” in <i>Environment and Society: a Critical Introduction</i>. Chapter is available on our MyWPI page. |

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| | | <ol style="list-style-type: none"> 2. Read Feldman, 2012, Chapter 4, Section: “The Bottled Water Fetish”: pages 109-115 ONLY in <i>Water</i>. Chapter is available on our MyWPI page. 3. Personal Water Use Log. Due Wednesday, 9/9 by 11pm. |
| Session 5 & 6: How do we use water, and why is water scarce? | | |
| Mon 9/14 | <ol style="list-style-type: none"> 1. Water scarcity and climate change 2. Water Problems Micro Projects for ½ the class | <ol style="list-style-type: none"> 1. Readings TBA (will be posted on MyWPI) 2. Water Problems Micro Projects for 1/2 of class. 3. Annotated bibliographies for those teams due Sunday, 9/13, by 11pm. |
| Thurs 9/17 | <ol style="list-style-type: none"> 1. Water, food, energy nexus 2. Water Problems Micro Projects for ½ the class | <ol style="list-style-type: none"> 1. Readings TBA (will be posted on MyWPI) 2. Water Problems Micro Projects for 1/2 of class. 3. Annotated bibliographies for those teams due Wednesday, 9/16, by 11pm. |
| Sessions 7&8: How do we use water, and why is water scarce? | | |
| Mon 9/21 | <ol style="list-style-type: none"> 1. Water conflicts, ethics, and environmental justice 2. Ethical case study in class | <ol style="list-style-type: none"> 1. Readings TBA (will be posted on MyWPI) 2. Personal Water Use Log Analysis. Due Sunday, 9/20 by 11pm. |
| Thurs 9/24 | <ol style="list-style-type: none"> 1. Water pollution and Environmental justice 2. Visit to Coe’s Pond | <ol style="list-style-type: none"> 1. Documentary TBA (will be posted on MyWPI) 2. Water Ethics Documentary Reflection. Due Wednesday, 9/23 by 11pm. |
| Sessions 9&10: How is water managed? | | |
| Mon 9/28 | Water equity and water governance | Readings TBA (will be posted on MyWPI) |
| Thurs 10/1 | <ol style="list-style-type: none"> 1. Group Project Selection 2. Diagramming successful project proposals 3. Visit from project sponsors | Read and evaluate previous problem proposal (will be posted on MyWPI) |
| Sessions 11&12: Group Project Selection and Work Day | | |
| Mon 10/5 | <ol style="list-style-type: none"> 1. Library Session 2. Work Day | <ol style="list-style-type: none"> 1. Use instructions from chapters 1,2, and 3 to choose a team manager and to construct a team charter and task schedule. Team Charter and Task Schedule and Team manager Due Sunday 10/4 by 11pm 2. Work on first draft of Problem Proposal |

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| Thurs 10/8 | Work Day | <ol style="list-style-type: none"> 1. Problem Proposal first draft due Friday, 10/9, at 11pm. 2. Annotated bibliographies for Problem proposal first draft due Friday, 10/9, by 11:59pm. |
| Sessions 13&14: Work Day and Project Problem Proposal Presentations | | |
| Mon 10/12 | <ol style="list-style-type: none"> 1. Peer Discussion of Problem Proposal Peer Reviews 2. Group Discussion of Problem Proposal Peer Reviews | <ol style="list-style-type: none"> 1. Peer review due Sunday, 10/11, by 11pm 2. Wolfe, 2010, Ch. 6 Revising with Others, in Team Writing: a Guide to Working in Groups |
| Thurs 10/15 | Project Problem Proposal Presentations | <ol style="list-style-type: none"> 1. Project Proposal Presentations due in class. 2. Project Proposals due Friday, 10/16, by 11pm. |

B Term

| Date | Topic | Readings/Assignments DUE |
|--|---|--|
| Sessions 1&2: Introduction to B term & Market and Policy Based Solutions to Water Problems | | |
| Tues 10/27 | <ol style="list-style-type: none"> 1) Introduction to B Term 2) Go over assignments due 3) Market based solutions to water problems | None |
| Fri 10/30 | <ol style="list-style-type: none"> 1) Policy solutions to water problems 2) Project goals and objectives (SMART goals) 3) Workshop on Interviews | <p>Interview Contact Assignment PART 1 due Thursday, 10/29, by 11pm: List of three potential interview participants, with a rationale of why an interview with them will benefit your project. Speculate about how they might help you think about the problem or potential solutions? SPONSORS DO NOT COUNT. Post list and rationale to MyWPI.</p> <p>Problem and Goal Statement Assignment due Thursday 10/29 by 11pm</p> <p>Second Interview Contact Assignment PART 2: Based on our feedback, send an introductory email to two people your group would like to interview. You must cc Prof. Stoddard and Rosbach on the emails in order to get credit for the assignment. Send by 11pm on Friday, 10/30. A sample email has been</p> |

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| | | posted to “Course Resources” on our MyWPI page. |
| Sessions 3&4: Technology Presentations, Data collection and Analysis | | |
| Tues 11/3 | Technology and Policy Solutions Presentations | Research Notebook Entry #1 due Sunday, 11/1, by 11pm Technology and Policy Solutions Presentations due in class |
| Fri 11/6 | <ol style="list-style-type: none"> 1) Workshop on data collection and analysis 2) Final Report Expectations 3) Peer review of interview questions and revise questions as a team. | First draft of interview questions due in class |
| Sessions 5&6: Project Progress and Team Conflict | | |
| Tues 11/10 | Progress Presentations | Final draft of interview questions due Monday, 11/9, by 11pm Progress Presentations due in class Research Notebook Entry #2 due Wednesday, 11/11, by 11pm |
| Fri 11/13 | <ol style="list-style-type: none"> 1) Workshop on team conflict with Charlie Morse 2) Workshop on data and interview analysis with Prof. Ingrid Shockey | Read chapter on team conflict in <i>Team Writing</i> for class Second draft of proposal/report due Friday, 11/13, by 11pm Interviews should be complete by Friday 11/13 |
| Sessions 7&8: Ethics in research and progress presentations | | |
| Tues 11/17 | <ol style="list-style-type: none"> 1) Individual team meetings to discuss progress, questions, problems 2) Ethical considerations in research <ol style="list-style-type: none"> a) Who does your solution benefit and potentially harm? b) Is it culturally appropriate? | Interview Transcribing and Analysis Assignment Due on Tuesday, 11/17, by 11pm |

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| Fri 11/20 | Progress Presentations | Research Notebook Entry #3 due Thursday, 11/19, by 11pm Progress Presentations due in class |
| Sessions 9&10: Poster Design and Revised Report sections | | |
| Tues 11/24 | ATC workshop on poster design | Third draft of report due Tuesday, 11/25, by 11pm |
| Fri 11/27 | No class! | None |
| Sessions 11&12: Working and Drafting Poster | | |
| Tues 12/1 | Project Work Day | Project Work Day |
| Fri 12/4 | Present Draft Poster | Present Draft Poster |
| Sessions 13&14: Mock Poster Presentations | | |
| Tues 12/8 | Work Day | Tuesday, 12/9 submit final poster to ATC. Your poster should be in Power Point, and it should be saved to a thumb drive/USB and delivered to the main office at Fuller Labs. You must drop off the USB in person before 12pm. The ATC staff will review the poster with you before you go. |
| Fri 12/11 | Mock Poster Presentations | Prepare for Mock Poster Presentation |
| Poster Day, Session 15, and Final Report Due | | |
| Mon 12/14 | Poster Day | Poster Day |
| Tue 12/15 | 1) Last day of class: awards and feedback session 2) Work on Final Report/Profs available for questions | Work on Final Report |
| Fri 12/17 | Final Project Report due by 11:59pm | Final Project Report due by 11:59pm |

FY1100 Livable Cities

City Interview Assignment

Learning Objectives: teamwork, presenting, cultural awareness, values

Assigned in week 3 and given 2 weeks to complete

Part 1: Questions and Interviewees

The first phase of this assignment is to be completed on an individual basis. Reflect upon what you think makes a city livable. Then, considering those factors, make up a list of interview questions that you might ask of a city-dweller about the joys and problems associated with city life. What city dwellers do you know who could answer questions about city life? You are urged to think of demographic differences potential interviewees might have: age, income, gender, race, geographic location of city, etc. You should also think about whom you would be willing to contact as a participant. Prepare a list of 8-10 questions that you think will provide good information and food for thought about the joys and problems of city life. This list is to be brought to class on 9/11. Also, include a list of potential interviewees and their demographic details class on 9/11. During that class, we will move to the next phase of the project that involves group work.

See the Interview Tips at <http://blogs.kqed.org/education/files/2014/03/9a-Interview-Tips.pdf> for assistance.

To help you prepare questions, here are some things to consider:

Below are some aspects of city life you might consider in your questions. These are just suggestions. You should also think of some questions on your own that would help shed light on city livability.

Environmental: What kinds of environmental problems might this city have? How many kinds of living beings are affected by these problems? Does a certain problem involve a whole city, or just a particular part of a city? Is the environmental problem one whose scope is neighborhood extensive, city extensive, region extensive? What types of impacts does the issue have on the land/sea/living things of this city? What are the impacts to plant species? What are the impacts to local wildlife or ecosystem services?

Social: What are the big social issues facing local communities (i.e. income inequality, crime, public education, housing, transportation, etc.)? Is everyone in the community equally impacted? Are the impacts unevenly distributed? If the latter, explain this distribution (i.e. - are there groups of individuals that are harmed, or more harmed, by the issue? Are there groups that benefit?) What solutions are being offered? Whom do they benefit/harm?

Political: What are the political stakes involved in tackling the issue(s) you decide to focus on? Are there differing political views involved in attempts to mitigate the issue? What are these?

Economic: What are the economic costs of the issue(s)? What are the costs of the ways in which the issue is being addressed? Do the costs of addressing the issue in certain ways make those ways unsustainable? Are some ways of addressing the issue more cost effective than others? How could we assess this?

Cultural: Why might your interviewee love living in this particular city? What might your interviewee hate about city life? What aspects can be made better or might be enhanced or best left alone?

Part 2: Video

Phase two of the assignment requires group work. After being assigned to a group in class, plan to meet together in and out of class to compare your lists of questions and your ideas of potential interviewees. As a group, plan to contact by Skype (or similar app) several people you know who live in cities. Ask permission of the interviewee and explain what you plan to do before you contact them for the actual interview. There should be at least five contacts for your group. Try to select interviewees that have some variety in terms of age, demographics, and city discussed. Capture your phone interviews. (ATC is here to help us learn to do that. PLAs will also be great sources for help.)

As a group, you should ask each interviewee a uniform list of questions. Use the Interview Worksheet that is found at http://ww2.kqed.org/quest/wp-content/uploads/sites/39/downloads/2011/06/interview_tips.pdf. The goal is to have the interview reveal the ups and the downs of living in a city and the quality of life and resources those particular cities have to offer. Your interviews may also show the contrasting problems that city dwellers experience.

With technical aid from the ATC, edit your interview videos into a short edited film of no more than 8 minutes. Be critical of the material you keep in your video. You will need to post these videos to a YouTube account (ATC can also help with this) and EMAIL a link to both professors and upload that link here in Canvas. We will compile a list of ALL of the links on Canvas in the Modules folder.

Part 3: Peer evaluation

EACH person will watch the videos (except the one your team produced) and complete a peer evaluation. That means you will have to watch nine videos and evaluate each one. The best video, as determined by the instructors, will be shared with a broader audience. You will lose points if you do not complete the peer evaluations. You can find a link to the rubric you should use for the peer evaluation in the Canvas Files/Extras folder. The link to the survey for peer evaluations can be found at:[insert survey link here].

You may have to copy and paste this link into the address/navigation bar. Once you complete a peer evaluation close the website and go to the link again to start a new evaluation.

Summary: For this assignment: one member of your team **MUST** email the link of your YouTube video to both professors **AND** EACH person must complete nine peer evaluation forms (via a qualtrics survey). Attached to this assignment is a rubric to grade the videos and the questions you will see in the peer evaluation.

Rubric for Cities Interview Assignment



Assignment total = 30 points: Professors' rating = 25 points (using rubric below); 5 points from average of peer/PLA surveys (Qualtrics surveys)

| | Not Completed 0 pts | Unacceptable 1 pt | Needs Improvement 2 pts | Acceptable 3 pts | Very Good 4 pts | Excellent 5 pts |
|---|--|---|---|--|---|---|
| Interview questions: 5 points The list of interview questions should be uniform for each person interviewed. They should be planned with an eye to eliciting useful information about the possibilities and problems of living in a city. | No interview questions prepared on contacts made. | Interview questions not well formulated and planned. | Interview questions show only partial success in formulation and plan. | Interview questions are adequate and contacts made. | Interview questions are clear to those interviewed and elicit helpful information. | Interview questions are well formulated and purposefully planned. Participants are contacted, permission obtained, and purpose of interview explained. |
| Content: Choice of interviews as information sources 5 points The people selected to interview present a good sample in terms of the project goal of saying what makes a city good or problematic. | There is no attempt to edit the number or thematic content of interviews used in the film. | Too many or too few interviews are used to make the video clip effective and informative. | The quantity of interview clips used is appropriate to the time limitations, but there is no attempt to select a variety of points of view. | An acceptable number of interviews are used relative to the time limitations, but the interviews chosen fail to show any range of responses. | There is an attempt to choose interview clips in a meaningful way, but the attempt is not totally successful or has room for improvement. | Interviewees are drawn from a variety of age, geographic, and gender demographics and arranged in such a way as to make or suggest a problem or theme subject to demographic variation. |
| Content: Editing for interpretive meaning 5 points A good interview video uses the responses of those interviewed to emphasize and illustrate one or more important points about the joys or problems of city life. | Interviews are randomly selected or cut as raw uninterpreted data. | It is completely unclear how the students interpreted the interview data they have presented. | An attempt at interpretive editing was made, but was not effective. | An attempt at interpretive editing was made with a modicum of success but clear room for improvement. | An interpretive vision is apparent in the video editing, but the meanings conveyed opened up no new ideas about human aspects of city life. | The viewer takes away some interesting points to ponder after seeing the video due to the design of the film. These points give viewers a new or wider understanding of human aspects of city life. |
| Production: 5 points Includes editing, sound and light, special effects. | Unable to see and/or hear the video well enough to evaluate it. | Defects in sound and/or lighting quality make it difficult to watch and understand, and significantly detract from the final product. | Some defects in editing, sound quality or lighting quality detract somewhat from the viewer's experience. | Editing, sound and lighting do not interfere with the viewer's experience, but neither do they enhance it. | Students made an effort to enhance the quality of the finished product with sound, lighting, effects and/or editing. | Outstanding effort was clearly made to produce a polished product. Very easy to see and hear. The team went above and beyond in production, editing, and/or effects. |
| Creativity: 5 points The team attempted to present the information from a new or different point of view. The finished product is entertaining and interesting to watch. | Clear lack of effort put into production of the final video. | Presentation lacks in creativity. | The presentation is dry, or is too complicated or abstract for the viewer to follow. | The team attempted to present the interview responses from a new or different point of view. | Topic is presented from an interesting or different point of view. | The presentation was both interesting and enjoyable to watch. The team truly went "outside-the-box" to create a fresh and innovative way to present their project. |

The Qualtrics survey you will fill out will roughly follow the guidelines below. The average of the class responses and your PLAs will all be combined to arrive at the final 5 points of the grade.

Your Name:

Group number of the video you are reviewing:

Your opinion of this video (you will click the appropriate buttons on the online survey form for each question):

| Question | Strongly Disagree (1) | Disagree (2) | Neutral (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------|--------------|-------------|-----------|--------------------|
| The topic is clear and easy to understand | | | | | |
| The interviews presented evidence to support the argument is convincing | | | | | |
| The evidence is explained in a way that is easy for a non-scientific audience to understand | | | | | |
| The possibilities and difficulties of city life were well-portrayed | | | | | |
| I learned something from this video | | | | | |
| I feel that my classmates made an honest effort to do their best in creating this video | | | | | |
| I enjoyed watching this video | | | | | |

FY1100 Livable Cities

Resilient Cities Assignment

Learning Objectives: research, presenting, writing, teamwork, cultural awareness

Assigned week 1 and given 1 week to complete

INDIVIDUAL ASSIGNMENT

This assignment involves conducting research on a city, its resiliency, and changes at that location over time. It is expected that you use 1) your city's resiliency plan (see <http://www.100resilientcities.org/strategies/>) and 2) outside sources to research your topics. You must cite your sources. You will use APA citation format and you must **BE CONSISTENT** when citing sources. Jessica O'Toole, the Research Librarian, will come to class and provide assistance but you are **STRONGLY ENCOURAGED** to meet with or contact her for this and future assignments.

This assignment will have 2 components: an *individual* component where each student completes their own, unique work, and a *team* component where group members work together to complete one product.

INDIVIDUAL COMPONENT:

This is an **individual component and you need to turn in 1 document for each person** (via myWPI) that provides the annotated bibliography for your portion of the project. Put all of the citations in appropriate format (APA) using the information that the research librarian, supplied or a google search for APA citation format.

The expectation is that there will be at least 3 annotations of different, acceptable sources.

Legitimate sources include the following:

1. Scholarly journal articles (i.e., a peer-reviewed academic journal article)
2. Popular press such as newspapers or magazines
3. Government, university, or professional association reports, extension papers, or websites
4. Books

Guidelines for annotated bibliography:

1. **Proper Article Citation:** At the top of each entry, you should cite the article according to proper APA style.
2. **Annotation:** The annotation should be given in paragraph form and should do three things. First, it should summarize the main point or argument that the source offers (and briefly discuss the support offered for it), Second it should assess/evaluate the source (How useful/important do you think the source is? Is it biased? How does strong is the evidence presented for the main point? Does it seem objective or biased?). Finally, you should say something about how this source does or would fit in to a research project on the topic you have chosen- in what way is it helpful? Does it lend support to your own view of the topic? Does it challenge or change your view? How and why?

For further instructions/information on writing annotated bibliographies (including examples) take a look at <http://owl.english.purdue.edu/owl/resource/614/01/>

TEAM ASSIGNMENT

This assignment involves conducting research on a city, its resiliency, and changes at that location over time. It is expected that you use 1) your city's resiliency plan (see <http://www.100resilientcities.org/strategies/>) and 2) outside sources to research your topics. You must cite your sources. You will use APA citation format and you must **BE CONSISTENT** when citing sources. Research Librarians, will come to class and provide assistance but you are **STRONGLY ENCOURAGED** to meet with them (jrotoole@wpi.edu) for this and future assignments.

This assignment will have 2 components: an *individual* component where each student completes their own, unique work, and a *team* component where group members work together to complete one product.

TEAM COMPONENT:

We have specific questions below that you must answer, but you are **NOT** limited to just those responses. Your responses to the questions should take the form of a *short essay* written in a uniform style and must be supported by evidence from scholarly sources. All sources for evidence, quotations, or paraphrased arguments should be fully cited (in text); citations should be in APA style. Reports should be about 5-7 pages (not including supplemental figures and bibliography). In addition, your team will **present your information** as a group to the class. Each group will have 5 minutes to highlight some of their most interesting findings.

Guidelines for the report's content:

Provide some basic information about the location. For example: Where is it located? What are the current demographics? How have demographics changed (what are the trends)? How are they expected to change in the future? What is the main economic source of this city? Has this changed over time, and if so, how? Why? What is the identity of your city? What is it known for? What is the biological/environmental significance of this city? How has the environment shaped the city?

Explain the main components that are targeted in your city's resilience plan. What challenges does the plan identify? What are the strategies the plan will use to address these challenges? How does this relate to economics, demographics, social dynamics, identity of the city, geography, environmental attributes, and so on? What aspects do you think the resilience plan lacks or does not address fully?

Considering all of the above questions, weave a narrative of your city that links causes and consequences of the factors above with the resilience plan and additional sources. Don't forget to support all information and claims.

Your team is required to submit one report and one presentation of the completed assignment on Canvas. Be clear in your communication about who will submit this **ON TIME**. Also, with this, as with ANY group work, **EACH** individual is responsible for the content that is handed in and each person should approve and have a copy of the final product that is to be turned in to be graded. In other words, if 1 person plagiarizes or turns in poor quality work for a section, the **ENTIRE** group gets the same grade (or further academic dishonesty penalties).

To help you write this assignment:

1. Your responses to the questions should take the form of a short essay.
2. You should make sure that your team's answers to the questions are written in a uniform style.
3. You should make sure that you have edited your response, that it is grammatically correct and free of spelling errors.
4. All citations should be in APA style.
5. You should cite (in text) anything that you use directly from your sources or that you paraphrase.
6. Your bibliography should include all references used in gathering your information.
7. In addition to your regular bibliography, each individual must turn in an annotated bibliography (that is the individual component of the assignment).
8. An authorship page should indicate some sense of the division of labor among the group members (could be framed as percentages out of the total work for the assignment, if you like). Alternatively, you may want to provide a listing of which research, writing, and presentation preparation contributions were made by each group member. Every group member must sign the authorship page, which can then be scanned and included as an image in the report document, or else as a separate submission.

FY1100 Extinction: Who Will Survive

Advocacy Group Jigsaw

Learning Objectives: teamwork, research, writing, presenting, cultural awareness, values
Assigned in week 3 and given 1 week to complete

We have assigned each team to learn about one of the following advocacy groups that works toward reducing threats to biodiversity in some capacity.

- Berkshire Natural Resources Council
- Grafton Land Trust
- US Fish & Wildlife Service
- Turtle Survival Alliance
- Environmental Defense Fund
- Panthera
- Xerces Society
- Wildlife Conservation Society
- Ocean Conservancy
- The Nature Conservancy
- Working Dogs for Conservation

Gather and prepare the following information as directed in a report AND to share with your classmates. You'll be working in small teams on your topic but then we will split each team up to work in a larger group. In these larger groups, you will teach everyone about your specific topic. This jigsaw will happen during class on September 18th. Submit your written report to us on Canvas (**one per team**).

Instructions for the written portion of this assignment:

1. Your responses to the questions should take the form of an essay (complete sentences, paragraphs linked together in one continuous narrative - not numbered "answers" to the questions).
2. You should write this essay in a uniform style.
3. You should edit your essay so that it is grammatically correct and free of spelling errors.
4. All sources for evidence, quotations, or paraphrased arguments should be fully cited (in text); citations should be in APA style.
5. Your bibliography should include all references used in gathering your information.

Guidelines for your report's content:

Summarize the intention of your advocacy group and explain its main focus on reducing extinction or promoting conservation. Describe the scale at which this advocacy group works. What groups of organisms does this group impact? Does it impact people? If so, how? What types of data does this group collect? Who has collected these data? How was the data collection funded? Do you trust these data – why or why not? How do you know (i.e., what evidence do you look for to evaluate trustworthiness)? Summarize and present data from or supported by the advocacy group and explain how its efforts to mobilize evidence moves conservation forward.

What are some of the potential consequences of the evidence you reviewed? We want to hear beyond ecological consequences and think about ethical, social, and political consequences. How does this information compare to information in your assigned readings? Elaborate on specific connections or contradictions.

Each team must use at least 4 *scholarly* sources (see Assignment 2 for more information on what constitutes a scholarly source) to support your claims and information. Your previous class readings should be used to support your responses but do NOT count toward the requirement of 4 additional scholarly sources. This requirement also does not include citing the website of your advocacy group.

IMPORTANT: When your group comes to class on Sept. 18th, each individual must have access to your report (printed or electronic) to share with your classmates. EACH member of your group needs a copy and needs to be ready to explain all of the above questions to their classmates because we will split your group up and combine group representatives to form several larger groups.

GPS: The World's Water
Professor Stoddard and Professor Rosbach
Worcester Polytechnic Institute
Global Water Cultures: Assets, Vulnerabilities, Hazards, and Solutions
Fall, 2018

Instructions: Mapping water Assets and Vulnerabilities

Work together to answer the following questions. Each member of the team should write up the answers to submit individually at the end of class.

- 1) What are the regional water resources of your community?
- 2) What are the current common sources of water pollution in the region? From where, and what types?
- 3) What are the potential sources of water pollution in the region? From where, and what types?
- 4) What are the community's sources of strength and wealth? What natural (forests, wetlands, rivers, etc.) and social/cultural resources does the community have? (e.g. strong churches/religion; high employment; great public services-police, fire, etc.; close knit community groups; natural disaster preparedness)
- 5) What are the common sources of employment or expertise in the community?
- 6) What other resources might be valuable to the community during a natural disaster and/or water crisis?

Instructions: Water Pollution Disaster

Work together to answer the following questions. Each member of the team should write up the answers to submit individually at the end of class.

- 1) Considering your community's water vulnerabilities and water threats, what are your concerns associated with this disaster?
- 2) Considering your community's assets, what assets, strengths, skills, experiences, and resources (tangible or not) does the community have that would lend itself to addressing these problems?
- 3) What additional resources, that may lay outside the community, might they need to help address this issue? For example, additional sources of knowledge, expertise, resources, etc.
- 4) How might the community and those with additional resources collaborate to address the problem as a team with multiple and diverse strengths?

Instructions: Water Scarcity Disaster

Work together to answer the following questions. Each member of the team should write up the answers to submit individually at the end of class.

- 1) Is this a case of hydrological scarcity? Techno-economic scarcity? Or both?
- 2) Considering your community's water vulnerabilities and water threats, what are your concerns associated with this disaster?
- 3) Considering your community's assets, what assets, strengths, skills, experiences, and resources (tangible or not) does the community have that would lend itself to addressing these problems?
- 4) What additional resources, that may lay outside the community, might they need to help address this issue? For example, additional sources of knowledge, expertise, resources, etc.
- 5) How might the community and those with additional resources collaborate to address the problem as a team with multiple and diverse strengths?

GPS: The World's Water
Professor Stoddard and Professor Rosbach
Worcester Polytechnic Institute
Water Problems Micro Project
Fall, 2018

Learning Outcomes, Assignment Goals, and Micro Project #1 Overview

Targeted Learning Outcomes

- teamwork
- research
- presenting
- cultural awareness

Assignment Goals

- To learn about issues of water borne illness, industrial and agricultural water pollution, and water scarcity.
- To learn about different communities across the globe and their cultural, socio-economic, political, and ecological relationships with water.

Project Overview

You and your team will be learning about a particular community, their water resources and vulnerabilities, and then you will work together to develop a community asset map, as well as a list of your community's water vulnerabilities and potential threats. With this map, you will work with your team to assess how your community can address particular water disasters, with a focus on waterborne illness, water pollution, and water scarcity. You will then present your findings in a 7 minute presentation to the class.

1. **Due end of class on Friday, 8/24:** to start, you and your team will choose a community to research.
2. **Due Tuesday, 8/28, by 2:45pm:** then each member of your team will read the same assigned short article on your chosen community and answer some questions about your community. Each member of your team will also read two assigned articles, one on waterborne illness and another on industrial and agricultural water pollution, and answer some associated questions. This is an individual assignment.
3. **Due Friday, 8/31, by 2:45pm:** next, each member of your team will complete an annotated bibliography for two sources on your community that you find on your own through research.
4. **In class on Friday, 8/31,** each member will share their annotated bibliographies, and the team will use the combined information to **create a community asset map, as well as a list of water vulnerabilities and potential water threats.** Each team will then be presented with two disasters, and you will use your map and list to determine the threats to your community and how you might use your community's resources to address them.
5. **Due on Tuesday, 9/4 for microproject teams 1-5,** you give a compelling 7 min presentation to share your community's asset map, vulnerabilities, potential threats, one of the disasters you faced, it's

impacts, and how you used your community's resources to address it. Your peers in teams 6-9 will provide you with feedback on your presentation, and your team will give them advice, based on what you learned from your experience.

6. **Due on Friday, 9/7 for microproject teams 6-9**, you give a compelling 7 min presentation to share your community's asset map, vulnerabilities, potential threats, one of the disasters you faced, it's impacts, and how you used your community's resources to address it. Your peer in teams 1-5 will provide you with feedback on your presentation, and your team will give advice based to next year's GPS students, based on what you learned from your experience.

Part 1: INSTRUCTIONS

Read the articles and the short description of your community then answer each set of questions listed below the table.

Readings to Complete

- *Article about your chosen community*
- *Waterborne Illness: Hasten, M., et al (2017). Water pollution and human health. Environmental Risk Assessment and Remediation, 1(3).*
- *Industrial Pollution: Types, Effects and Control of Industrial Pollution*
- *Agricultural Water Pollution: Poisoned Waters Documentary (watch first 40 minutes, the rest is encouraged but optional)*

Answer these questions in a total of 1-2 paragraphs:

1. Describe the community you read about: ethnic background, cultural background, religious background, livelihoods/jobs. Do they have any specific cultural practices around water?
2. Describe where they live: geography, ecology, climate, etc.
3. Did you learn anything about the community's history? Have they always lived in this region? Have they been impacted by war or politics? Are they a majority or minority ethnic/religious/cultural group?
4. What is their current social and economic standing in the region? Meaning, are they lower-income? Higher-income? A group who has or lacks power in their region?
5. Where do they get their water for drinking, cooking, washing?
6. What do they do with their human waste (sewage)?
7. Anything else that you learned that was interesting or important, when learning about a community and their water access, quality, or cultural and practical practices?

Questions about Waterborne Illness Based on the Reading Assigned

Answer these questions in one short paragraph:

1. This article focuses mostly on water borne pathogens and associated illnesses. However, it does discuss other types of water pollution and illnesses. We want you to focus on waterborne pathogens and diseases while you are reading this.
2. What is a waterborne illness?
3. What are the major sources of water pollution that cause waterborne illness?
4. What are the three categories of diseases caused by waterborne pathogens? What are some examples in each category?

Questions about Industrial Water Pollution

Answer these questions in a total of 1-2 paragraphs:

1. What two broad groups can industrial waste be divided into?
2. What are the basic differences between the two?
3. Where or how, in general, can these wastes can be prevented?
4. How can biomagnification lead to increased exposure for certain types of plants, animals, or people?

Questions about Agricultural Water Pollution

Answer these questions in a total of 1-2 paragraphs:

1. Based on the Poisoned Waters documentary, what are the main causes of agricultural water pollution?
2. Who are the main polluters?
3. What are the main effects of agricultural water pollution on the environment? on people's health and livelihoods?
4. Why is it so difficult to address this problem and prevent this type of pollution?

Part 2: Annotated Bibliography Instructions:

Each team member must write **two** annotated bibliographies for two legitimate sources that you found while you were researching your community and their water resources for your Microproject Presentation.

For each article include:

1. **Proper Article Citation:** At the top of each entry, you should cite the article according to proper APA style.
2. **Summary:** In approximately one paragraph, summarize the main points and arguments of the source along with the key supporting facts.
3. **Analysis:** Explain how the article helps you to answer the questions and create a narrative associated with your project. One or two paragraph.

Part 3: Presentation Requirements

1) Content, Length, and Style of Presentation

Content

In your presentation, answer the questions below using a thoughtful and compelling narrative about the water problem.

1. What are your community's assets?
2. What are their water vulnerabilities?
3. What are their potential sources of water threats?
4. Discuss one disaster you faced during the in-class simulation.

5. How did your communities water vulnerabilities and threats impact how the disaster played out?
6. How did you address this disaster using the resources within the community?

Length

- The presentation should be a total of 7 minutes long. Presentations that are significantly shorter will have points deducted. Presentations that are longer will be stopped and points will be deducted.
- You must have at least 6 slides and no more than 11 slides in your presentation. The general rule in good presentations is about one slide per minute.
- The last slide should list your image and reference citations

Style

- The presentation should start with a "hook". Try starting with a story about a person or a case; use a prop to exemplify an issue; or start by asking the audience questions, etc. After the hook, provide an introduction-your names, the name of your presentation, what you are going to cover. This should be very brief (maybe 30 sec of your total 7 minutes). Use clear reason and evidence to explain the problem in a compelling narrative.
- Your slides should be primarily images and graphics. It should not be all words.
- Try to discuss the issue with us, instead of reading off of cards. However, if you feel most comfortable reading off of cards, make sure to read with a lively voice and make eye contact.

2) Sources

- You must have at least 2 quality sources per team member plus the article(s) we provided for you.
- These sources must be listed on the last page of your presentation. They must be cited properly. Please use the APA style. For image sources, please provide links only.

3) Work must be Shared Equally and Equitably by Group Members

- Divide tasks equally and equitably
- Make time to work together as a group
- Make time to practice at least once together

Part 4: Presentation Feedback Guide

How did it go? (5 minutes)

Instructions for Teams presenting: *Take a moment to think about how your first presentation went, write down a few thoughts, then share your thoughts with the other team you have been paired with. Use the following questions to guide your self-evaluation and discussion about what went well with your presentation and what you hope to improve for your next presentation.*

1. How well did you transition from one team member to the next?

2. Did the timing of individual parts and the entire presentation work out as you planned? Or did some sections end up going longer or shorter than you anticipated? *Ask the team giving you feedback how well the transitions and timing went from their perspective as the audience.*
3. Did your images and technology support your presentation as expected or were there challenges/issues that you did not anticipate?
4. As a team, do you feel you relayed the information you intended?
5. How about your individual part?
6. Do you think the presentation worked well to relay your main message?

How did they do? (8 minutes)

Instructions for teams giving feedback on the presentation:

Use this worksheet to take notes on the team you were assigned during their presentation.

After the team you are paired with finishes reflecting on their presentation, use the following questions and the notes you took during the presentation as a guide to provide feedback on their performance. Feedback during the feedback session should be in the form of conversation and discussion - not written.

Main Message and Supporting Evidence:

- What was the main message of the presentation? *Ask the presenters if this is the message that they intended. If it was, tell them what worked well to convey that message. If it was not, provide feedback about how they might have made their message clearer. Share why you thought their message was different than what they intended.*
- What points (claims and assertions) did they make throughout the presentation?
- Did these support the main message? *Explain why or why not.*
- What evidence (facts, data, figures, observations, etc.) did they provide to support their points (claims, assertions)?
- Was there a clear narrative story linking the main message to the supportive claims and evidence, or did you (the audience), have to work to see how all the pieces fit together? *Explain. Give the presenters feedback about how clear their points were, how well they linked their claims to the main message, and how well they supported them with evidence.*

Audience Engagement:

- Did they engage the audience from the start? Did you feel engaged emotionally at any point? *Give the presenters feedback about how effectively they engaged or did not engage the audience and any suggestions you have for improving engagement for the next time.*

Media:

- What kinds of media and visuals did they use in the presentation? Were some more effective than others? *Give the presenters feedback about their use of media in the presentation and any suggestions for next time.*

Mentoring and Advice to your partner team (7 minutes) Instructions for team that presented:

Now that you have worked on a team to research, develop, practice, and give a presentation about a water problem, what advice can you give your partner team so they can learn from your experience (and so you can make improvements for your next project)?

Here are some topics you might discuss:

- Dividing responsibilities
- Preparing and practicing
- Communicating with each other
- Managing limited presentation time and transitions during the presentation
- Presentation techniques and practices that work well
- Things you saw in others' presentations that you were really impressed by that you'd like to try in another presentation

FY1100 Shelter The World

Design and Research Notebook Assignment

Learning Objectives: Research, Approach to Problems, Interdisciplinary
Assigned in week 4 and given 4 weeks to complete

Design and Research Notebook Assignment

One of the key learning objectives of all GPS courses is to develop strong research skills, another is to approach problems from a holistic and creative perspective, while a third is to develop strong teamwork skills. In this ongoing assignment you will record how you tackle the complex problem of shelter, the strategies you use to research, write about, and advance the team project as a whole, and how your efforts contribute to the project overall.

Goals of the Assignment

- Learn and record research/design strategies
- Evaluate and reflect upon personal research skills and contributions
- Document personal contribution to the group assignment

During the second half of A-Term (once you have been placed in your permanent teams) you will be required to complete a minimum of 5 entries in a research notebook. A couple of weeks before the end of the term the PLAs will review your notebook to make sure you are on the right track and highlight any strengths or weaknesses they find in your entries.

Sample Entry Template

Date

Length of Time Spent on Research: (30 min, 45 min, 1 hr) etc

Goal of the research/design session:

This should be brief but specific, it could highlight a specific topic you were researching, a part of the paper that you were writing, a section you were editing, an aspect of the design you were refining, or even a brainstorming session. Keep in mind, however, that this is meant to reflect individual work.

What did you accomplish and how did it advance the overall group project:

Above you wrote what you wanted to do, what actually happened? Did you sit down to write the introduction and ended up editing a different section of the report? How many words did you write? How many paragraphs did you edit? How many sources did you find on the topic you were researching? How many modifications did you come up with? How did your contribute to the overall project? Again this should be brief, a few sentences.

Additional Notes/Resources/Links

In this section you should include things that will be useful the next time you return to continue your research or meet with your group.

- Keyword search strings
- Links to useful resources

- Design/idea Sketches
- Issues/topics/questions on which you need to follow-up
- Notes to share with your research team

FY1100 Shelter The World

Contacts and Interview Questions

Learning Objectives: Research, Approach to Problems, Cultural Awareness

Assigned in week 5 and given 1 week to complete

Ask An Expert

Identifying Contacts and Preparing Interview Questions

This assignment contains two interrelated parts, identifying potential contacts and designing interview questions. While this is an individual assignment you are working as part of a team, therefore each member of the team will focus on a different domain of knowledge. Each member of the group must select a DIFFERENT one of the following areas of expertise for this assignment:

- Cultural (for the specific location)
- Design (for the type of shelter/housing you are creating)
- Development
- Disaster

Part 1: Locating experts. Using the power of the internet and research you have already conducted in this class, identify four living experts on the topic within the domain of expertise that you have selected. (Make sure you tell me your domain of expertise). You need to be able to identify the individual, where they are employed and current contact information (e-mail or phone number at a minimum). Please include a sentence as to why you selected this expert.

Part 2: Drawing on the Schensul and LeCompte reading, create a semi-structured interview schedule that you could potentially administer to all four of your contacts. Because these individuals are experts in the field, it is important to design a series of questions that are at the appropriate level of knowledge. You want to be able to get to the important and unique insights that they can provide for your project, but you also want to be able to analyze their responses in relation to others.

Evaluation:

This assignment will be evaluated on the following factors:

- Experts selected
 - Are they appropriate representatives of the domain of expertise?
 - Did you provide accurate contact information?
 - Did you justify your selection of this individual.
- Ability to design and write semi-structured interview questions
 - Are the questions open ended?
 - Are they asking questions that relate to the interviewees expertise and are they relevant?
 - Are the questions ordered appropriately?
 - Are the questions organized to create an effective transition from one topic to the next?

- Will the questions provide you with the kind of information you are looking for?

Designing Semi-Structured Interview Questions

Semi-Structured interviews are a method of qualitative data collection that can be used at various stages in the research, however, they are most often used to gather specific types of information on specific topics or themes that have emerged during exploratory research. When analyzing semi-structured interview data the researcher looks for themes and patterns that are similar across different respondents. Another valuable product of semi-structured interviews are the unexpected responses that open up new areas of inquiry.

Semi-Structured interviews follow what is called an interview guide. It directs the conversation between the researcher and the informant (interviewee) but is flexible enough to allow the informant to introduce new topics that are relevant to the research into the conversation.

- 1) Be clear about the purpose of the interview. What are you trying to learn from the set of questions you are preparing?
- 2) Considering the focus of the interview, what are the different categories, areas, or domains of information that you want to focus on during the interview?
- 3) What kinds of questions should you ask the interviewee to acquire that information?

Resources:

<https://www.quirkos.com/blog/post/semi-structured-interview-guide-qualitative-interviews>

<http://designresearchtechniques.com/casestudies/semi-structured-interviews/>

<http://www.tools4dev.org/resources/how-to-do-great-semi-structured-interviews/>

A Study of GPS:

What do you want to know about the GPS experience?

What categories of people would you want to interview?

Based on class discussion, what are the main categories the interview should explore?

Write a couple sample questions that might be used on a semi-structured interview guide about the GPS experience