ESP802: Human Systems and the Environment

**Time:** Tuesdays 9:10-12:00  
**Location:** Berkey 115

Office hours for class coordinator, E. Moran: Mondays 2-4 pm  
**Location:** 207 Manly Miles Bldg  
Make appointments by emailing: moranef@msu.edu

**Course description:** Anthropological, economic, geographical, legal, political, and sociological concepts of human systems in the context of environmental change

**Course overview:** ESP802 has been redesigned to provide students with disciplinary training in natural sciences and engineering with a broad view of how social sciences address the challenges of environmental change. ESP802 is co-taught by five MSU instructors. The course will include the following components:

1. Four modules providing disciplinary perspectives from different areas of the social sciences: Module 1: Sociology (Prof. Jennifer Carrera); Module 2: Economics (Prof. Joseph Herriges); Module 3: Anthropology (Prof. Lucero Radonic); Module 4 (Prof. Amber Pearson).

2. Focus on a case study that will provide a crosscutting interdisciplinary experience: it could be something like The Social Dimensions of a Water Crisis: Flint and other communities or other topics proposed by students and approved by the instructors. The case study of Flint is a salient one in current events with public policy relevance and will serve as common points of reference for learning in ESP 801, a counterpart course that is structured in a modular fashion but focuses on natural sciences and engineering approaches.

3. At the end of each module, each student will be required to develop one essay (3 to 5 pages) that reflect on the relevance of the specific discipline covered in the module for one of the case studies.

4. The final project is designed as a capstone experience that integrates learning in the four modules. The final product will build on the essays developed by students in the four modules of the class. The report will be published as a part of ESPPulse – a semiannual publication by ESPP.

ESP801 and ESP802 build a foundation for an integrative experience in the ESP804 course where students, having taken ESP801 or ESP 802, work on team-based projects that span the social/natural science spectrum. The new curriculum design reflects ESPP’s objective of

---

1https://reg.msu.edu/Courses/Request.aspx?SubjectCode=ESP&CourseNumber=801&Source=SB&Term=1164#Results
providing an interdisciplinary preparation to a cohort of students from diverse background pursuing an interest in environmental science and policy.

**Recommended background**
Bachelor's or Master's in appropriate discipline for specialization.

**Course learning objectives**

At the end of this course, students will be able to:

1. Describe scopes and main methods of key social science disciplines focused on the environment.
2. Critically evaluate – in essay form - how each such discipline impinges on a specific environmental case of public policy relevance.
3. Synthesize the results of the team inquiry in the form of a professionally-prepared written report for public distribution by ESPP

**Instructors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emilio Moran</td>
<td>Department of Geography, ESPP</td>
<td><a href="mailto:moranef@msu.edu">moranef@msu.edu</a></td>
</tr>
<tr>
<td></td>
<td>Dr. Moran’s research has been on land use change, human-environment interactions, agroecology. He currently leads an INFEWS project “Rethinking Dams” that will develop innovative approaches to hydropower.</td>
<td></td>
</tr>
<tr>
<td>Jennifer Carrera</td>
<td>Department of Sociology, ESPP</td>
<td><a href="mailto:jcarrera@msu.edu">jcarrera@msu.edu</a></td>
</tr>
<tr>
<td></td>
<td>Dr. Carrera’s research focuses on the causes and consequences of impaired access to water and sanitation among low-income populations</td>
<td></td>
</tr>
<tr>
<td>Joseph Herriges</td>
<td>Department of Economics, ESPP</td>
<td><a href="mailto:jah@msu.edu">jah@msu.edu</a></td>
</tr>
<tr>
<td></td>
<td>Dr. Herrige’s research in environmental economics provides a perspective on the economics of water management and water infrastructure, and ways in which economics provides insights on human decisions towards environment</td>
<td></td>
</tr>
<tr>
<td>Lucero Radonic</td>
<td>Department of Anthropology, ESPP</td>
<td><a href="mailto:radonicl@msu.edu">radonicl@msu.edu</a></td>
</tr>
<tr>
<td></td>
<td>Dr. Radonic’s work provides insights from an anthropological perspective on how cultural dimensions impact use of the environment, how</td>
<td></td>
</tr>
</tbody>
</table>
Amber Pearson  
Department of Geography, Environment & Spatial Sciences, ESPP  
*Dr. Pearson’s research utilizes spatial and epidemiological techniques to understand health inequalities at multiple scales*  
apearson@msu.edu

### Grading scheme

- **Module 1:** 15% = 10% essay + 5% participation  
- **Module 2:** 15% = 10% essay + 5% participation  
- **Module 3:** 15% = 10% essay + 5% participation  
- **Module 4:** 15% = 10% essay + 5% participation  
- **Final Research project:** 40%

Essays are due on the Friday after the third class in each module, it should be 3-5 pages in length, and in it each student will discuss how that discipline’s approaches could be used to address research questions of interest to the student but of relevance to environmental science and policy.

A final paper will be due on the day the final exam is scheduled. This will be a research paper, it need not be on the Flint water crisis but it could be. It will follow the format of a research article or a research proposal and will be abundantly referenced, and problem oriented. The final papers will be read and graded by the course coordinator.

**Policy on Plagiarism:**

Plagiarism, or the copying of materials without proper attribution, is unacceptable behavior in the University. Any plagiarized assignment will receive a zero.
Detailed syllabus

Readings
Please refer to the D2L course site for required readings for each module.

Module 1: Sociology Dr. Jennifer Carrera  email: jcarrera@msu.edu

Week One: Undone Science and Critical Perspectives on “Objectivity” (Jan. 10)

Week 2: Citizen Science and Public Participation in Science (Jan. 17)

Week 3: Flint and Detroit Water Crises (Jan. 24)


Module 1 Paper due Jan. 27 to Prof. Carrera by 5 pm.

Module 2: Economics  Dr. Joseph Herriges  email: jah@msu.edu


Week 4: Policy Tools (Jan. 31)


Week 5: Benefit Cost Analysis (Feb. 7)


2 Resources is an RFF publication, accessible from MSU’s library website (e-resources)


**Week 6: Applications (Feb. 14)**

a. Water


b. Transportation


**Module 2 Paper due to Prof. Herriges Friday Feb. 17 by 5 pm.**

**Module 3. Anthropology: Dr. Lucero Radonic**  email: radonicl@msu.edu

**Week 7: The political ecology of water governance (Feb. 21)**


**Recommended additional readings:**


**Week 8: Infrastructure: an anthropological perspective (Feb. 28)**


Recommended additional readings:


**Week 9: spring break (March 6-10)**

**Week 10: The right to water: Applications and debates (March 14)**


Recommended additional readings:


**Module 3 Paper due to Prof. Radonic Friday March 17 by 5 pm.**
Module 4: Geography: Dr. Amber L. Pearson   email: apearson@msu.edu

Week 11: Health and Medical Geography (March 21)


Week 12: Water insecurity: Multiple ways of knowing (March 28)


Week 13: Methods for understanding water insecurity, case studies (April 4)


**Week 14 (April 11) & Week 15 (April 18) Student Presentations**

**Final paper due on first day of Final Exams Week: Friday, April 28**

**HAVE A GREAT SUMMER!!!!**