

Course Syllabus
Sustaining Costa Rica
SPEA E/V 482/582 (3 credit hours)

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Course Description

This course, framed by a social-ecological systems perspective, explores sustainability practices implemented in Costa Rica that reach from the local to the global scale in their social, economic, and environmental footprint. A theoretical foundation in the work of Elinor Ostrom and applied learning which connects students with current experts and managers of Costa Rican sustainability initiatives (from indigenous people to government officials) will allow students to distill best practices and lessons learned regarding sustainable development in this resource rich country. Students will be exposed to a variety of sustainable development projects that speak to the following themes: forests, food & agriculture, resources & energy, and communities. These projects arise out of nonprofits, businesses, governments, and grassroots collectives that work across scales, demonstrating the importance of cross-scale networks for sustainability as well as the many potential career approaches for students' future work. The combination will give students experience and perspective highly desired by graduate schools and employers alike.

Students will have to attend two lectures in Bloomington prior to travel, and lectures and field excursions in Costa Rica. Students will be evaluated on class participation, individual journaling, and group concept mapping and presentation.

This course will count as an elective for many O'Neill, School of Public Health and College majors, particularly those with an environmental and sustainability focus at the undergraduate and graduate level. The curriculum for the undergraduate and graduate courses will be the same, except the graduate student's independent projects will include higher analytical rigor.

Course Learning Goals and Objectives

This course is designed to equip each student with the knowledge and skill sets to successfully analyze the interactions of key factors influencing the sustainability of social-ecological systems broadly and to evaluate such factors for Costa Rica specifically. At the end of the course, students should be able to:

1. Apply Elinor Ostrom's Social Ecological Systems Framework and relevant theory related to common pool resources to be able to...
2. Analyze key factors influencing the sustainability of social ecological systems, and specifically to be able to...
3. Evaluate the key factors influencing a specific sustainability issue facing a community or communities within Costa Rica which requires students to...
4. Understand much of the current and historical social, environmental and economic context of Costa Rica.
5. Understand the myriad career opportunities in sustainability.
6. Remember an amazing experience overseas in a culture and an environment different from home.

These course learning goals will be met through the following objectives:

1. Student engagement in the lectures, service-learning and excursions planned throughout the course will expose the students to the history, culture, economy and the environment of Costa Rica as well as expert analysis of sustainability issues there, offering them an understanding of these topics.
2. Group discussions, the course journal, and group assignments framed by Ostrom's SES framework will give students the ability to apply their experience and understanding within a set of parameters that allow them to analyze sustainability of social-ecological systems generally and will facilitate students' ability to evaluate key factors influencing sustainability issues within Costa Rica.
3. This course is designed to examine a variety of projects associated with sustainability in an attempt to help students determine if a career in this area is of interest to them. Furthermore, hearing from researchers, park rangers, conservation managers, city/government officials, nonprofit managers and community sustainability leaders etc. will give valuable insight into each profession and contacts in these fields.
4. For many students this will likely be their first international experience. The cultural experiences gained from spending two weeks in Costa Rica, eating at local restaurants and meeting local officials and community members will be a significant contribution to the education and growth of each student in ways that can't be replicated in a classroom and will not be forgotten (journaling will contribute to this objective)!

Graded Course Assignments

1. Class participation (25% of final grade)

Class participation is vital to learning in this class because it is experiential in nature. As a result, participation is a significant portion of the grade. The points received are an assessment of your engagement including the expectation that you will attend all pre-trip classes and course excursions and meetings while in Costa Rica and, while present, actively engage by being on time and prepared, staying focused on the activity or discussion at hand, asking questions and offering informed observations that contribute to the collective good, and contributing fully and collaboratively to group work. *The instructor reserves the right to deduct participation points for misbehavior outside of class time which detracts from the learning environment and educational goals of the program.*

Students will be evaluated on participation daily in the following manner: 3 = full credit for strong participation; 2 = moderate participation; 1 = weak participation. Participation grades will be assigned every 3 days on the trip (so “quarterly”). See Presentation Assignment and Rubric in Appendix and Canvas for more details.

2. Course Journal (25% of final grade)

Daily (July 8 – July 16), students will be responsible for one journal entry addressing a single course excursion/issue addressed that day (see itinerary for a full list). The main goal of each journal entry is to facilitate documentation, research and reflection that will support group concept mapping assignments. More generally, journal entries allow students to record meaningful experiences, to see writing as a tool for cultural exploration and self-discovery, and to integrate experiences and reflections into academic learning and personal growth. Students will likely need to utilize a field journal / pen or pencil to take journal notes while on excursions which can be transferred to a digital submission via uploaded photo (but only if the handwriting is legible!) or transcribed to a Word document and uploaded.

Students will submit their journal entries daily; nine entries are to be submitted and five of those entries will be graded at random for each student. When graded, a journal entry will be evaluated in the following manner: 3 = full credit; entry is submitted and demonstrates strong effort; 2 = submitted and entry demonstrates moderate effort; 1 = submitted but entry is shallow, demonstrating weak effort. See Journal Assignment and Rubric in Appendix and Canvas for more details.

3. Group concept maps and presentations (25% of final grade)

On a daily basis during the trip, groups will produce a concept map that diagrams the social-ecological system (SES) at play for one of the issues addressed that day. Groups will utilize individual members' journal entries along with any reputable outside resources (scholarly articles, books, objective news, expert testimony, NGO

or government data/reports) they would like to call upon to diagram the system. Groups will present and receive grades on three of their concept maps and related presentations over the course of the trip. So most days (either over lunch or before dinner), two groups will offer a 5 to 10-minute presentation of their work to the class for discussion and feedback. The presented concept maps will be graded according to the Group Concept Map Assignment and Rubric in Appendix and on Canvas.

4. Final group concept map and presentation (25% of final grade)

During the final two days of the course, student groups will be asked to return to one of their submitted group concept maps to refine and expand upon it for formal presentation during the final class session (last day of the trip). University for Peace faculty and community members that were engaged in the course will be invited to participate in the final class session. Each group will offer a ~10-minute presentation on their sustainability issue of focus as well as a polished concept map that refines the map components and connections incorporating external resources. The presentation will be framed by the Social-Ecological Systems Framework and informed by drawing together the lessons they've learned through their experiences as well independent research efforts. The same Group Concept Map and Presentation Rubric on Canvas will be utilized for scoring this assignment **but with higher expectations in terms of substantive content, polished (digital) product, and a longer, more refined oral presentation.**

Course Grades

Course grades will follow the scale:

Letter grade	Percentage	Letter grade	Percentage
A+	97-100	C+	77-79.9
A	93-96.9	C	73-76.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	67-69.9
B	83-86.9	D	63-66.9
B-	80-82.9	D-	60-62.9

Course assignment contribute to course grades in the following manner:

Assignment	Percentage of Overall Grade
1. Individual course journal	25%
2. Individual class participation	25%
3. Group concept maps and presentations	25%
4. Final group concept map and presentation	25%
Total	100%

Course Schedule and Itinerary

Class Meeting	Topic	Readings and Assignments (all on Canvas)
July 1 6:00 – 8:00pm	Trip and scholarship preparation <ul style="list-style-type: none"> Welcome and introductions (~20 min) Primer for travel to Costa Rica: Itinerary overview and what to expect (~40 min) Syllabus and major assignments overview (~15 min) Frameworks and theories for class scholarship (~40 minutes) 	Read ahead: Ostrom 2009; Anderies and Janssen 2013 (Chapters 1 - 4, 7)
July 2 6:00 – 8:00pm	Trip and scholarship preparation <ul style="list-style-type: none"> Frameworks and theories for class scholarships 	
July 7	Travel day Arrive in Costa Rica and settle into hotel.	Read ahead: Martin (2004); Sengupta and Villegas (2019)
July 8 AM 8:30am pickup	UN-mandated University for Peace overview <ul style="list-style-type: none"> Welcome to UPEACE and overview of week Guidelines for Engagement Background on UPEACE Teambuilding and Leadership activities LUNCH: UPEACE	Due: 1. Journal Entry #1
July 8 PM 8:30am pickup	Costa Rica's Social-Ecological System Overview <i>Costa Rica Environmental History</i> This talk by UPEACE professor Jan Breitling will set the backdrop for the program. Prof. Breitling will give us a brief history of Costa Rica's environmental movement, highlighting the national parks system and some of the more positive advances in the country. <i>Overview of Environment & People in CR</i> Marco Quesada, Director of Conservation International will talk about the major environmental problems in the country, and some of the projects under way to mitigate them. DINNER: <i>Welcome dinner!</i>	

July 9 AM	<p>Big Agriculture & Agrochemicals in Costa Rica 9-10:30am</p> <p>In this talk with Ana Lopez, an agronomist who currently works with Conservation International, we'll learn about large-scale agriculture in Costa Rica. Mono-cropping and the heavy use of agrochemicals is promoted by giant, international companies, yet has a dire effect on the environment and farmers themselves.</p> <p>Rutas Urbanas 10:45 – 12:15pm</p> <p>Rutas Urbanas works to connect people to the city through the use of natural areas. They are working to connect more than 25km of San Jose with walking, running and biking trails using rivers and other natural spaces.</p> <p>LUNCH: UPEACE</p>	<p>Due:</p> <ol style="list-style-type: none"> 2. Journal Entry #2 3. Group Concept Maps
July 9 PM	<p>Waste Management in La Carpio 1:45pm</p> <p>Tapping into the expertise of our partners from CISG, who we'll visit later in the trip, they will lead us into an informal community called La Carpio to learn about waste management in vulnerable areas. La Carpio is one of the biggest informal settlements in Costa Rica with very low socioeconomic indicators overall and additionally holding the top position on the least percentage of green areas available to its citizens and least physical space per person. The community is bordered on one side by one of the country's largest waste landfills, and on the other by the wastewater treatment plant for San Jose.</p>	
July 10	<p>Payment for Environmental Services – Costa Rica as a model for the world</p> <p>Costa Rica was a pioneer in the global carbon offset trading movement, starting a 'Payment for Environmental Services' program quite early to help small landholders make the decision not to cut down their forests for other reasons. This innovative program, focusing on preventing destruction instead of restorative programs like reforestation, has encouraged the country to shape its environmental program and promote sustainable tourism. We'll speak to Silvia Rojas of the Sustainable Biodiversity</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #3 2. Group Concept Maps

	<p>Fund to learn about the program, and then we'll visit a small landholder involved in this program to hear firsthand about the experience from the community perspective.</p> <p>LUNCH TBD</p>	
July 11	<p>Community based renewable energy</p> <p>Erick Brenes is a specialist in sustainability, alternative development and community development, Over the past three years, he has been on the board for ACEM, dedicated to growing community-based renewable energy alternatives in Latin America. During the day we'll have the opportunity to visit two different sources of alternative energy – a wind capture project and a bio-digester. At these sites we'll not only learn about alternative energies and how they are produced, but also but Costa Rica's drive to be one of the first countries to obtain carbon neutrality and cut emissions.</p> <p>LUNCH TBD</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #4 2. Group Concept Maps
July 12	<p>Nacientes Palmichal (rural community tourism)</p> <p>Nacientes Palmichal was a pioneer in the 'rural community tourism' movement in Costa Rica, using tourism as an income-generator for the community and a driver to help sustain biodiversity and importance water sources. Beyond learning about the organization, we'll have the chance to take a beautiful hike, visit a small dairy and coffee farm, and learn about rural life in Costa Rica.</p> <p>LUNCH: Nacientes Palmichal</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #5 2. Group Concept Maps
July 13 AM 8:30am pickup	<p>Sustainable coffee farming</p> <p>El Toledo is a small coffee farm, led by a family that has been growing organic coffee for the last two decades. We will have tour of the coffee plantation and learn about sustainable coffee production and processing.</p> <p>LUNCH: El Toledo</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #6 2. Group Concept Maps
July 13 PM	<p>Quitirrisi Indigenous Reserve</p>	

	<p>Quitirrisi is located just outside of San Jose. We will learn about the traditions orally passed down through the generations, and then the family will share with us the age-old tradition of basket-weaving. After learning how materials are procured and prepared, each student will weave their own small coaster to take home. This visit will bring up questions of displacement, cultural shifts and loss of languages & traditions.</p>	
<p>July 14 AM 7:30am pickup</p>	<p>Tarcoles Sustainable Fishing Village</p> <p>We will spend the morning at Tarcoles, a community renowned for its sustainable fishing practices. They have worked with Conservation International to work on artisanal fishing, and will talk to us about their journey as leaders in the fight for sustainable fishing regulations. After the talk, we'll get to try our own hands at artisanal fishing as we go out in small boats with the local fishers!</p> <p>LUNCH: Tarcoles</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #7 2. Group Concept Maps
<p>July 14 PM</p>	<p>Palm Plantation tour (after drive to Ciudad Neily)</p> <p>Ciudad Neily is approximately 4 hours from Tarcoles. Once we arrive, CISG has arranged for a rare tour of a palm plantation. We will consider the ecological and economic impacts of the industry.</p> <p>DINNER: Hotel Andrea</p>	
<p>July 15</p>	<p>Connecting community health and the environment</p> <p>Inter-American Center for Global Health (CISG) offers innovative training programs that contextualize global health so they can integrate the essential concepts and master the required skills and abilities to understand and solve the complex relationships between health, development, politics, the environment, and the socio-cultural context. This workshop provides a window for cultural immersion and community interactions that are real, responsible, ethical, and based on the needs of vulnerable populations in the region.</p> <p>On Day 1, we'll look at land use change and its effects on local populations, health and food security. We'll focus on</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #8 2. Group Concept Maps

	<p>the growth of the African palm oil industry in Costa Rica, a prosperous industry that offers many local jobs, but at the same time has detrimental effects on health and the environment. We'll visit palm oil farmers and the Ministry of Health, and then do a workshop to help process the day's findings.</p> <p>LUNCH / DINNER: CISG</p>	
July 16	<p>2nd day with Inter-American Center for Global Health</p> <p>On Day 2 with CISG, we'll visit the site of the proposed Diquis Hydroelectric Dam in Terraba. This dam is proposed to be the largest hydroelectric dam in Central America, generating electricity for more than one million consumers and employing more than 3,000 people. That said, the dam is sited to displace more than 1,500 people from their lands, the majority of whom are indigenous Costa Ricans being asked to leave their territories. We'll visit the site and talk to the communities, and then have a thought-provoking afternoon workshop that ties together the day's themes.</p> <p>LUNCH / DINNER: CISG</p>	<p>Due:</p> <ol style="list-style-type: none"> 1. Journal Entry #9 2. Group Concept Maps
July 17 AM	OTS Botanical Garden Tour	Focused group work day
July 17 PM	Drive to Manuel Antonio (approximately 3 hours)	
July 18 <i>7:45am pickup</i>	<p>Manuel Antonio National Park</p> <p>In the morning, students will tour the famous national park to learn about the government's conservation efforts through the park system. The afternoon will be free!</p>	Focused group work day
July 19 AM	<p>Rainforest Spice Farm</p> <p>Tour Rainforest Spice Farm and learn about processing of vanilla, cacao and other products. This program was started by an ex-Peace Corps volunteer, and we'll have the opportunity for a Q & A session with him as well.</p> <p>LUNCH: Rainforest Spice Farm</p>	

July 19 PM	Return to San Jose. Stop at an artisanal shop on the way home for gifts! Final Dinner and Concept Map Presentations	Due: Final Concept Map and Presentation
July 20	Departure day <i>Drive from the beach to the airport, planning an early arrival. Departures after 11am.</i>	

Course Policies

You are required to read, understand and comply with all Indiana University O'Neill Overseas Course policies.

In terms of communication between instructors and students, I am always approachable; if you have any concern, question, or problem regarding the course or travel, please see me. I welcome anything you would like to share regarding the course. In order to verify the identity of all parties involved all email communication must originate from an Indiana University email account. Instructions for forwarding your IUB email to another account can be found at: <http://kb.indiana.edu/data/beoj.html?cust=687481.87815.30>

Behavioral policies of course:

You are expected to function as a civil* person and quality representative of the United States and Indiana University while in Costa Rica. Of course, this means you must follow all laws of the country and strive to understand and respect norms of behavior. Should you break any laws, you will immediately be sent home at your own expense; if you are arrested, you will be on your own to manage the consequences. For other offenses that are not necessarily illegal but may impact the safety and well-being of yourself or others, the program instructor and support staff reserve the right to send you home at your own expense or to hold you under “room arrest” should you wish to stay in the program. Room arrest means that you are required to stay at the hotel(s) in your room outside of class excursions/activities. Being sent home will result in an automatic F for the course.

***Civility:** Civility is important in an academic community to ensure that all parties—students, staff, and faculty—are working in an environment that fosters achievement of the individual's and community's goals and objectives. Civility requires all parties to demonstrate personal integrity and conduct themselves in a manner that shows respect, courtesy and tolerance to others. Examples of discourteous behaviors during class include

reading the newspaper, listening to headphones, talking or laughing with others, chronically arriving late, and so forth. These behaviors are distracting to the instructor and classmates, and we will address these problems as they arise. Pursuant to the Indiana University Student Code of Conduct, disorderly conduct which interferes with teaching, research, administration, or other university or university-authorized activity will not be tolerated and will be immediately reported to the Office of The Dean of Students for appropriate disposition which may result in disciplinary action including possible suspension and/or expulsion from the university.

We adhere to a “dry campus” rule in regard to the shared bedrooms, community kitchens and indoor/outdoor living rooms we may use on the trip. As a matter of respect, refrain from storing or consuming alcohol in these shared spaces. This policy does not apply to the shared space of food and beverage service businesses (only our “campuses”).

Academic Policies:

You are required to read the syllabus and understand all policies and dates of submission for all assignments. There will be no extra-credit assignments. ***All late assignments will be penalized (-25%) each day they are late.***

I will not tolerate cheating, plagiarism, or any other form of academic dishonesty or misconduct. If you have not done so, you should read the IUB *Code of Student Rights, Responsibilities, and Conduct*, which can be accessed at <http://www.iu.edu/~code/code/index.shtml> so you will be sure to understand what these terms mean and what penalties can be issued for academic dishonesty. Academic dishonesty can result in a grade of F for the class (an F for academic dishonesty cannot be removed from the transcript). Significant violations of the Code can result in expulsion from the University.

Plagiarism is using another person's words, ideas, artistic creations, or other intellectual property without giving proper credit. According to the *Code of Student Rights, Responsibilities, and Conduct*, a student must give credit to the work of another person when he/she does any of the following:

- a. Quotes another person's actual words, either oral or written;
- b. Paraphrases another person's words, either oral or written;
- c. Uses another person's idea, opinion, or theory; or
- d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

Important Indiana University Policies

Students with Learning Disabilities

Students with a learning disability, hearing impairment, speech impairment, or any other disability that may affect their ability to fulfill a requirement of the College should contact the Disability Services for Students in Franklin Hall 096, (812) 855-7578, prior to registering. Requirements will not be waived for students with disabilities; however, some modifications may be made within specific courses.

Religious Holidays

To ensure freedom of religious observance throughout our increasingly diverse population, a set of Calendar Principles were approved by the Bloomington Faculty Council, including a Religious Holidays Policy. This policy requires instructors to make reasonable accommodation when a student must miss an exam or other academic exercise because of a required religious observance. Under IU policy, students are required to request accommodation for religious observance before, not after, it occurs. Instructors should include information about accommodation and the deadline for requesting it in their syllabi. Students are not required to supply evidence of their attendance at the religious services or events in order to qualify for any accommodation granted to them.

Appendix: Rubrics

Assignment 1: Participation

Daily, students are expected to engage fully in all class and group activities and discussions. Engagement means being on time and prepared, staying focused on the activity or discussion at hand, asking questions and offering informed observations that contribute to the collective good, and contributing fully and collaboratively to group work. The instructor reserves the right to deduct participation points for misbehavior *outside of class time* which detracts from the learning environment and educational goals of the program.

Students will be evaluated on participation daily in the following manner: 3 = full credit for strong participation; 2 = moderate participation; 1 = weak participation. Participation grades will be assigned every 3 days on the trip (so quarterly). See attached journal rubric for more details.

Assessment Rubric – Participation			
	Strong participation (3pts)	Moderate participation (2pts)	Weak participation (1pts)
	Student is on time and prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.	Student falls short on any one of the following: on time and prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.	Student falls short on more than one of the following: on time and prepared; focused on the activity or discussion at hand; asking questions and offering informed observations that contribute to the collective good; contributing fully and collaboratively to group work.

Total possible points = 3/day or 9/quarter

Assignment 2: Individual Journaling

Daily (July 8 – July 16), students will be responsible for one journal entry addressing a single course excursion/issue addressed that day (see itinerary for a full list). The main goal of each journal entry is to facilitate documentation, research and reflection that will support group concept mapping assignments. More generally, journal entries allow students to record meaningful experiences, to see writing as a tool for cultural exploration and self-discovery, and to integrate experiences and reflections into academic learning and personal growth. Students will likely need to utilize a field journal / pen or pencil to take journal notes while on excursions which can be transferred to a digital submission via uploaded photo (but only if the handwriting is legible!) or transcribed to a Word document and uploaded.

Students will submit their journal entries daily; nine entries are to be submitted and five of those entries will be graded at random for each student. When graded, a journal entry will be evaluated in the following manner: 3 = full credit; entry is submitted and demonstrates strong effort; 2 = submitted and entry demonstrates moderate effort; 1 = submitted but shallow, demonstrating weak effort. See Journal Assignment and Rubric in Appendix and Canvas for more details.

Assessment Rubric – Individual Journaling			
	Strong effort (3pts)	Moderate effort (2pts)	Weak effort (1pts)
Document	Entry displays a strong effort to provide thorough notes. Student notes several key issues with scale and time in mind, key stats /data, suggested contacts and resources, and photos (if allowed at site).	Entry displays a moderate effort to provide notes but fails to cover key issues with scale and time in mind, key stats /data, suggested contacts and resources, or photos (if allowed at site).	Entry is scant. Student does not record any key issues, stats/data, and suggested contacts or resources.
Research	Students demonstrate they made a strong effort to do quick outside research on some aspect of the issue at hand. The information they provide is relevant, briefly summarized and documented with at least one reputable reference provided.	Students demonstrate they made a moderate effort to do quick outside research on some aspect of the issue at hand. The information they provide is not clearly relevant, not clearly summarized or not referenced.	Students do not include any evidence of outside research on an aspect of the issue.
Analyze	Entry includes logical and complete draft concept map of SES factors involved and their key interactions.	Entry includes illogical or incomplete draft concept map of SES factors involved and their key interactions.	No draft concept map is attempted.
Reflect	Student describes in detail a personally meaningful or relevant experience that supports or challenges their values, understanding, or world view as it relates to sustainability.	Student identifies personally meaningful or relevant experience that supports or challenges their values, understanding, or world view as it relates to sustainability but fails to offer much detail or description.	Student does not identify a personally meaningful or relevant experience that supports or challenges their values, understanding, or world view as it relates to sustainability.

Total possible points = 12

Assignment 3: Group Concept Maps and Presentations

On a daily basis during the trip, groups will produce a concept map that diagrams the social-ecological system (SES) at play for one of the issues addressed that day. Groups will utilize individual members' journal entries along with any reputable outside resources they would like to call upon to diagram the system (scholarly articles, books, objective news, expert testimony, NGO or government data/reports). Groups will present and receive grades on three of their concept maps and related presentations over the course of the trip. So most days (either over lunch or before dinner), two groups will offer a 5 to 10-minute presentation of their work to the class for discussion and feedback. The presented concept maps will be graded according to the attached rubric.

In choosing the issue you will address on your concept map, ***specify your topic***. More often than not, you will start with an outcome that you have observed – a sustainable or unsustainable situation – that you'd like the concept map to help explain. For example, if you visit a sustainable fishing village and you want to map it, you would specify (as your topic) that you are mapping *the system factors that result in a sustainable fishing village*.

Your concept map should ***include a social-ecological systems perspective*** that identifies and labels influential factors from Ostrom's IAD or SES Framework. This includes both first tier factors (e.g. *resource system, resource units, actors and governance factors*) and second tier factors (e.g. *resource unit mobility or group size*).

Your concept map should ***relate these factors with well-developed linkages and interactions grounded in theory and/or evidence***. Linkages will generally be represented by arrows; more information about the strength of relationships can be communicated with variable sizes of arrows or directional symbology to understand causal relationships and/or feedbacks. Labels and/or text boxes can be used to name interactions and offer details about them, including citations as necessary.

In the best case scenario, the maps should also ***use critical analyses that may facilitate a thesis or argument*** that underpins your map. The rubric defines that your critical analyses should identify "leverage points" in the system (labeled on the map) that represent opportunities for intervention and potential threats to the system given a specific outcome (e.g. *sustainability or ecosystem service resilience*). But go beyond this if it you'd like!

Your maps will be produced under variable conditions and time constraints but to the best of your ability, they should ***present as a scholarly product***. Likely, you will produce them on large white post-it paper with markers so a final product may need to be redrawn to be legible, labeled, referenced, and edited for spelling/grammar. Utilizing visuals – images, cartoons, or graphs – is expected. Oral presentations should be 5 – 10 minutes, include a clear statement of the topic, SES factors identified and how they interact, critical analyses of leverage points, and references as appropriate. Presenters should use appropriate volume, enunciation, and physical openness to the audience; humor and storytelling is encouraged with an overarching professional tone. Group members should share the stage during oral presentations. Presenters should engage the class in follow-up discussion.

Assessment Rubric - Concept Maps and Presentations			
	Expert (3pts)	Intermediate (2pts)	Novice (1pts)
Topic / Thesis	Students clearly define the issue being explored / their thesis. The issue/thesis is specific enough to support a detailed but concise map with relatively clear boundaries.	The issue or thesis is somewhat vague; student struggle to be specific in an issue or thesis statement and therefore struggle to define the system boundaries and offer concise depth in their analysis.	The issue or thesis is so unclear or is so general that it doesn't support a deep mapping; the boundaries of the system are not defined or are ill defined.
SES Components	Students map multiple factors from all of the 1 st tier and some of the 2 nd tier variables of the SES framework; these factors are appropriately categorized, logically chosen and clearly support the exploration of issue / thesis.	Students map some factors from all of the 1 st tier and some of the 2 nd tier variables of the SES framework; they fall short of being appropriately categorized, logically chosen or clearly supporting the exploration of the issue / thesis.	Students map few SES factors and do not cover all of the 1 st tier and some of the 2 nd tier variables; multiple factors are inappropriately categorized, illogically chosen or unrelated to the issue / thesis.
Interactions and linkages	Students' map components are all well-arranged and logically linked*; all connections are well-defined* in terms of strengths and directional affects. *Based on theory or evidence.	Some but not all map components are well-arranged and logically linked*; some but not all connections are well-represented in terms of their strengths and directional affects. *Based on theory or evidence.	Students' map components are not well-arranged / logically linked; connections are ill-defined in terms of strengths and directional affects.
Theoretical foundation / evidence	Students reference reputable theory and evidence appropriately and consistently (scholarly articles, books, objective news, experts, NGO/Gov data).	Students reference theory and/or evidence; some references may not be reputable, may be misinterpreted/ misunderstood or are inconsistently cited.	Students do not reference any theory or evidence on map.
Critical analysis	After mapping, students demonstrate critical analysis based on course content to point to opportunities for intervention and to the threats to the system given a specified outcome (e.g. sustainability).	Critical analysis of opportunities and threats is weak based in misunderstanding of course content or unspecified outcome (e.g. sustainability).	Critical analysis is missing.
Presentation	Map is totally legible, labeled, referenced, edited & includes some images, graphics, cartoons, etc. AND Oral presentation utilizes best practices for speakers and includes introduction stating thesis, details map components, interactions, critical analyses with references / justifications.	Some parts of map are not legible, labeled, referenced, edited, or inclusive of images, graphics, cartoons, etc. OR Oral presentation is lacking in best practices for speakers or in providing the following: an introduction stating thesis, detail of map components, interactions, critical analyses with references / justifications.	Most of map is not legible, labeled, referenced, edited, and does not include images, graphics, cartoons, etc. AND Oral presentation does not utilize best practices for speakers and does not include introduction stating thesis, details of map components, interactions, critical analyses with references / justifications.

Total possible points = 18