**CRSN 151A: Sustainability Praxis in the Natural and Built Environment
Winter 2021  (satisfies** GE PE-T )Tuesday/Thursday 11:40am-1:15pm

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**Land Acknowledgement**

“The land on which we gather is the unceded territory of the Awaswas-speaking Uypi Tribe. The Amah Mutsun Tribal Band, comprised of the descendants of indigenous people taken to missions Santa Cruz and San Juan Bautista during Spanish colonization of the Central Coast, is today working hard to restore traditional stewardship practices on these lands and heal from historical trauma.”

**Goals of the Course:**

The goal of this 5 unit class is for students to understand the cultural, societal, economic, political, environmental and technological factors that implicate sustainability. Learners will be introduced to the concepts, methods, practices and “tools of the trade” for conceptualizing sustainability praxis in built and natural environments. The course challenges students to engage in structured decision making around “wicked” sustainability problems from a holistic perspective while engaging diverse worldviews.

This course is meant to provide a high level view of the issues surrounding sustainability; a concept that means different things to different people. Our aim is to analyze sustainability from the systems level using an extant case study, integrating the different views, outcomes and perceived tradeoffs through different lenses

In class activities and analysis of a featured case study will allow students apply decision making practices and concepts used by professionals for planning and implementation in localized community scenarios and in relation to development policy. We will examine a case study focused on water management options currently under consideration in the Monterey Peninsula Water Management District. After a comprehensive review of relevant context and chronology leading up to current events and efforts already underway, students will be challenged to present and defend their own recommendations for an optimal water management portfolio for the district. This class empowers students with practical employable skills that can be taken directly to the field. Students will consider how social norms around resource flows, usage and distribution patterns are impacting ecological footprints, adoption of innovations and policymaking.

**Learning** **Objectives:** Students completing the course should be able to

1. Articulate and define actionable sustainability criteria
2. Associate sustainability criteria with measurable indicators and impacts
3. Demonstrate proficient use of techniques and tools for estimating resource flows.
4. Illustrate and quantify relationships among supply, demand, and distribution of  resources through the human-built-natural environment
5. Apply concepts and skills to reveal how social norms, cultural practices and human behavior (i.e. habits, norms, repertoires of practice) govern the potential for sustainable praxis or human centered design.
6. Identify, monitor and show evidence of ecological impacts and true costs to distinguish sustainable uses of physical and biological resources from non-sustainable uses.
7. Identify, monitor and show evidence of ecological impacts and characterize risks (.e.g biodiversity, pollution, invasive species, and habitat destruction).
8. Understand and apply concepts characterizing systemic extractive vs inclusive infrastructural relationships
9. Explain how extractive vs. inclusive relationships differentially value potential solutions for wicked problems

**Course Requirements & Materials:**
All readings will be available on CANVAS.

**Grading:**
Attendance & Post Class Questions: 20%
Reading & Homework Assignments: 20%
Group Presentation: 25%
Group Rebuttal: 10%
SWOT Analysis + Final Paper: 25%

**Attendance & Post Class Questions:** Ideally you will be able to attend zoom meetings.  If you need to take this class asynchronously, you can watch recorded zoom meeting.After each class, you will answer questions to get credit for attending.

**Reading & Homework Assignments:** Reading / Videos & Questions for each class will be posted via the Canvas Syllabus.  Please check regularly for changes and updates. Homework assignments must be submitted on Canvas before you come to class to receive full credit.  The questions will be a combination of post class synthesis & pre class analysis.

**Group Presentation:** During the last two weeks of class teams of four students will give 20 minute presentations using visual aids to define optimal water portfolios to meet demands and requirements in the Carmel River Valley Basin and Monterey Bay Peninsula water district.  Priorities and recommendations should account for implications of the four lenses as reviewed during the course. Portfolios will need to account for the current policy and legal requirements as explained in the case study.

**Group Rebuttal:** Experts will be recruited to review and challenge recommendations in a Q & A during the initial presentation. Subsequently each team will be expected to prepare and present a rebuttal to any of the challenges or queries raised during the Q & A. During the final class each group will give a rebuttal to the alternate water portfolios.

**SWOT Analysis & Final Paper:** Strenghts / Weaknesss and Opportunities / Threats Analysis (SWOT) of all portfolios.Individuals will submit a final analytic paper discussing the SWOT of a recommended portfolio. Due March 15 at midnight.

**2021 Class Schedule:** subject to change

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| Date | Lens  | Topic  |
| 5-Jan | Intro | 1\_Course Logistics, Sustainable Design for Wicked Problems, Case Study approach |
| 7-Jan |  Intro | 2\_Environmental Regulations |
| 12-Jan | Key Concepts | 3\_Four Lens Approach to Design Process,  Human Centered Design, Regenerative Design  |
| 14-Jan | Key Concepts |  4\_ Wicked Problems & Sustainable Groundwater Management Act 2014 |
| 19-Jan | Key Concepts | 5\_Water Crisis |
| 21-Jan | SOC/ECON | 6\_Intro to Case Study, Policies & Regulations |
| 26-Jan | POL | 7\_Competing Water Demands |
| 28-Jan | ENVS/ SOC |  8\_Endangered Species Act & Structured Decision Making |
| 2-Feb | ENVS / POL  | 9\_Water Portfolios  |
| 4-Feb | ENVS/POL | 10\_Alternative Sources of Water / Intro to Desal |
| 9-Feb | ENVS/POL | 11\_Desal Environmental Impacts |
| 11-Feb | ECON/TECH | 12\_Groundwater replenishment |
| 16-Feb | TECH/ENVS  | 13\_Low impact Design & Decentralizing Water Supply/ Alt Water Sources |
| 18-Feb | TECH/POL | 14\_Alternative Sources for Water Supply: example of a water supply portfolio. |
| 23-Feb | ENVS  | 15\_SWOT Analysis |
| 25-Feb | Synthesis | Presentation Workshop |
| 2-Mar | Synthesis  | Student Presentations:  |
| 4-Mar | Synthesis  | Student Presentations:  |
| 9-Mar | Synthesis  | Student Presentations: rebuttal |
| 11-Mar | Curtis | Key Concepts | State of the State 2021 |
| 15-Mar |  |  | SWOT Analysis & Final Paper Due |