

INTERDISCIPLINARY & TEAM TAUGHT COURSES

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What is Interdisciplinary Teaching?

- Integration of analytical frameworks from multiple disciplines to examine a question or topic (*Pedagogy in Action, SERC*)

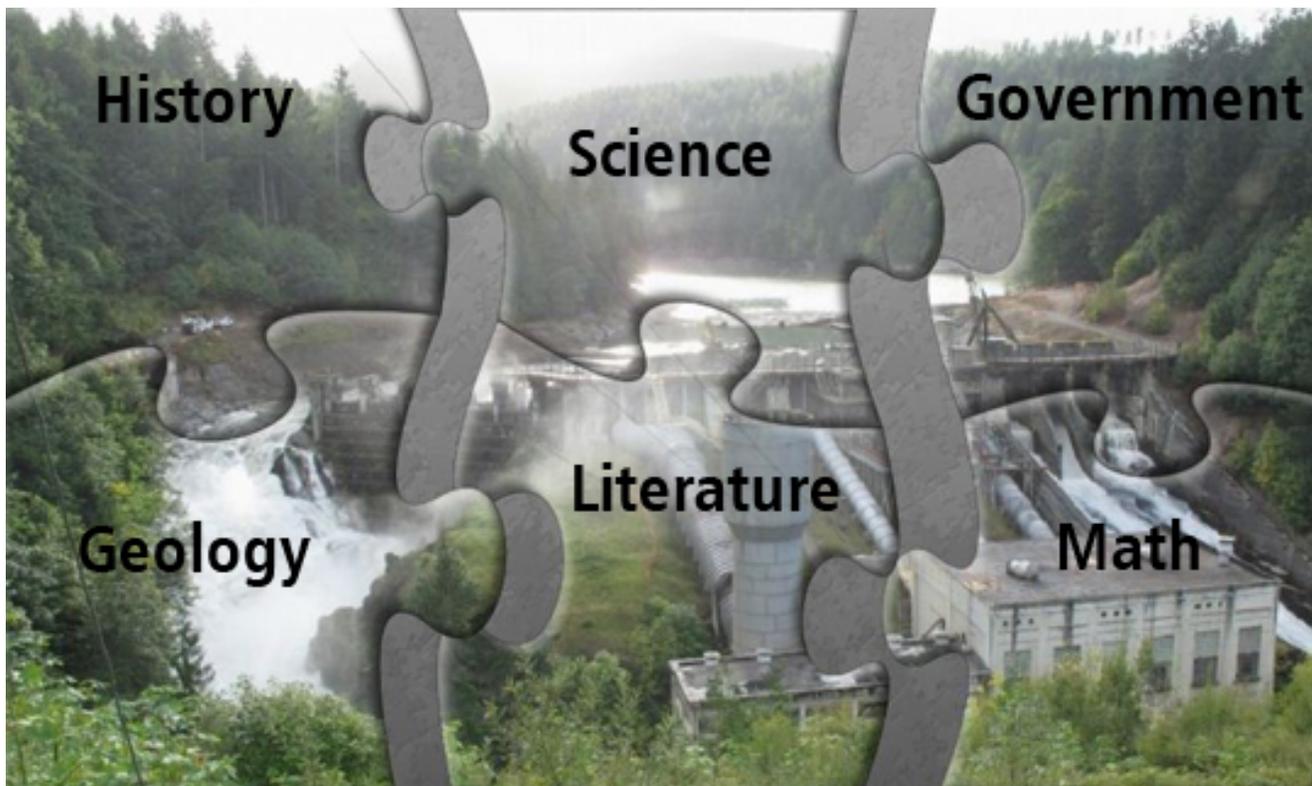


Image: Elwha Dam (<https://www.naturebridge.org/blog/research-brief-interdisciplinary-learning-environmental-education>)

Motivation

- For you:
 - Geosciences are interdisciplinary
 - Increase enrollments
 - Staying relevant
 - Building networks / finding colleagues
 - Flexible scheduling
- For your students:
 - Critical thinking
 - Ethical considerations
 - Prepare to solve problems
 - Appeal to student interest
 - New perspectives



Goals for Interdisciplinary Courses

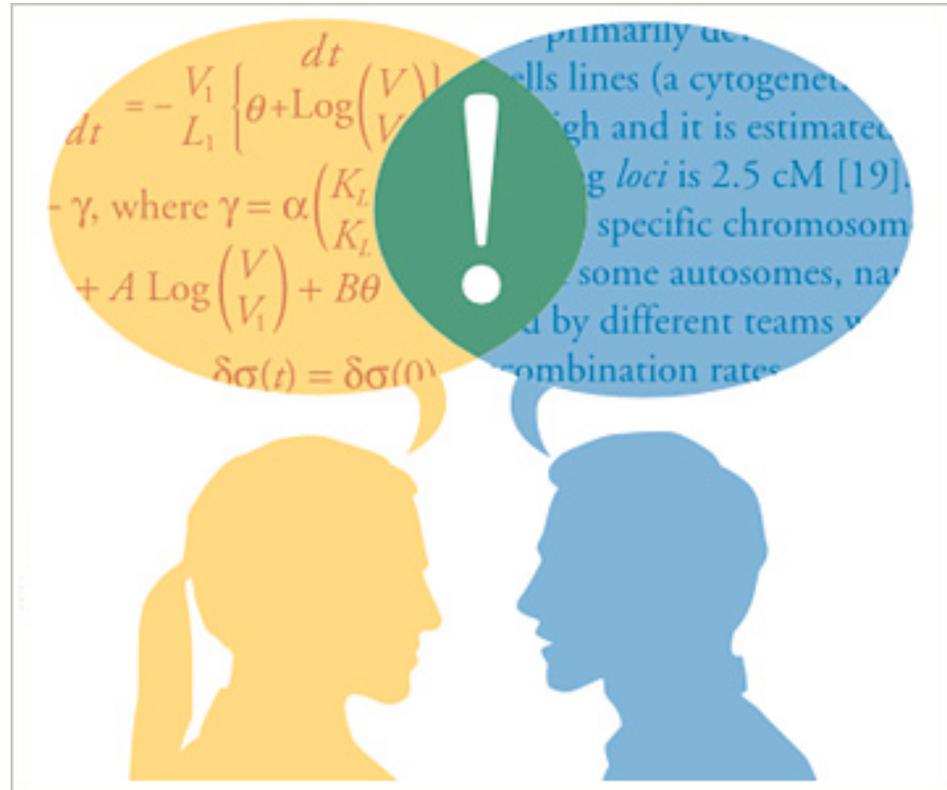
- What do you want students to gain from the interdisciplinary experience?

Think – Pair - Share

- What are some advantages of interdisciplinary teaching?
- What are some disadvantages of interdisciplinary teaching?

Integration by Design

- Identify points of intersection
- Capitalize on strengths of others
- Provide meaningful context



Start Small

- Identify & talk with faculty and community partners
- Guest speakers in your class and other classes
- Field trips
- Partner with faculty from your department
- Partner with faculty from other departments
- Partner with others outside your college/university



Thinking bigger

- Linked courses
- Organize a symposia on important and/or local issues
- Learning communities
- Team teaching
- New courses: One time special seminar vs. new course integrated into curriculum
- New major/minor/program



Examples: Field trips

- Geology & History of Colorado Plateau
- Geology & Environmental Ethics in California
- Western Water Resources & Photo-journaling
- Geology & Oceanography of Hawaii
- Fluvial Geomorphology & Fluid Dynamics



Examples: Linked Courses

- Geology and Culture of Chilean Patagonia
 - Concurrent courses, option to enroll in both
 - Shared readings, assignments, field trip
- Environmental Science & Cultural Anthropology – *campus landscaping*
 - Concurrent courses, option to enroll in both
 - Shared readings, (some) class meetings, research project



Examples: Learning Communities

- Residence for Earth and Environmental Living and Learning (REELL)
 - Freshmen & sophomores
 - All majors, co-curricular



Examples: Team Teaching

- Undergraduate class Life in the Universe
 - Physics, Geoscience, and Biology Faculty
 - Systems Thinking; Influence of life on planets and vice versa
 - ~1/4 of lectures per faculty member and ~1/4 for all three instructors
 - Integrated final projects and exams
- Graduate class Water Resources Management
 - Two members of same department
 - One geoscientist & one social scientist
 - ~1/4 of lectures were joint and alternated the rest individually
 - Comprehensive assignments and paper

Challenges?

- Approaches: piecemeal vs. integrated sequential learning
- Teaching what you don't know
- Different expectations/language/styles/perspectives
- Finding partners
- Words of caution – institutional / department values, “ownership” of classes

Solutions

- Find common interests
- With a course, start with 1 or 2 people as the complexity grows quickly
- Communication
- Planning
- Flexibility
- Embrace the unexpected

Develop Your Own Course/Module

- On your poster...
 - What course / module do you propose?
 - Audience for course / module?
 - What disciplines integrated?
 - Approach?
 - Resources needed? (personnel, facility, other?)
- Post It note comments on peer posters...
 - Strengths?
 - Suggestions?
 - Other considerations?

Resources

- Interdisciplinary Approaches to Teaching:
<http://serc.carleton.edu/sp/library/interdisciplinary/index.html>
- Interdisciplinary Teaching: Designing for Success:
http://serc.carleton.edu/integrate/teaching_materials/interdisciplinary.html