



## Greening PSU's Curriculum: Addressing challenges inherent in sustainability courses

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- ▶ ***The process of education*** will emphasize active, experiential, inquiry based learning and real-world problem solving *on the campus and in the larger community.*
  - ▶ Higher education would ***practice and model sustainability.*** A campus would "*practice what it preaches*" and model economically and environmentally sustainable practices in its *operations, planning, facility design, purchasing and investments,* **and tie these efforts to the formal curriculum.**

--Cortese (2009)

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# Miller Project Goals

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- ▶ To explain what students find valuable in their sustainability experiences (curricular and co-curricular) and where they see room for improvement.
- ▶ To understand sustainability course design challenges based on a review of syllabi
  - ▶ relationship between learning outcomes and key course components
  - ▶ extent to which sustainability courses involve CBL, fieldwork, field trips, etc.



# Student Focus Groups

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- ▶ Purpose: To learn about students' experience of sustainability at Portland State (curriculum and co-curriculum).
- ▶ Six focus group sessions: January – April 2010
- ▶ 38 students (18 G, 20 UG, 16 student leaders)
- ▶ Recorded and transcribed
- ▶ Grounded Theory guided basic coding



# Results: Curriculum

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- ▶ **Course content**
  - ▶ theoretical framework
  - ▶ whole systems, basic ecology
  - ▶ community development
  - ▶ social sustainability
  - ▶ current issues & specific topics (e.g., permaculture)
- ▶ **Pedagogical approaches**
  - ▶ applied & experiential learning
  - ▶ solutions-oriented
  - ▶ inter- and multi-disciplinary



# Results: Curriculum

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## ▶ **Assignments**

- ▶ case studies
- ▶ well integrated CBL components
- ▶ campus projects
- ▶ teaching others

## ▶ **Tools/skills**

- ▶ creative/critical/systems thinking
- ▶ building social capital and creating community
- ▶ building relationships
- ▶ building capacity to facilitate change
- ▶ leadership skills
- ▶ behavior change



## Results: Co-Curriculum

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- ▶ Opportunities to apply learning in the community and on campus
- ▶ Leading and teaching others
- ▶ Positive solutions
- ▶ Incorporate the whole community in sustainability education
  - ▶ free community lectures
  - ▶ professional development and continuing education opportunities for people in the workforce
- ▶ Provide institutional support for student-initiated and student-run projects



# Results: Other

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- ▶ **Undergraduate students:**

- ▶ importance of feeling “empowered” to make changes, be leaders, teach others (family & friends)
- ▶ applied skills (lifestyle and personal behavior change)

- ▶ **Graduate students:**

- ▶ theoretical knowledge and application of skills to career

- ▶ **All students:**

- ▶ wanted sustainability integrated into courses
- ▶ recommended at least one sustainability-oriented course as a graduation requirement
- ▶ found sustainability courses, curricular, and co-curricular opportunities difficult to identify



# Syllabi Analyses: Why Focus on Learning Outcomes?

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- ▶ A campus would "*practice what it preaches*" and model economically and environmentally sustainable practices in its *operations, planning, facility design, purchasing and investments*, **and tie these efforts to the formal curriculum.**
- ▶ Effective course design connects learning outcomes and course components.
  - ▶ classroom activities
  - ▶ assignments
  - ▶ assessment and evaluation



# Campus-wide Learning Outcome: Sustainability

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- ▶ Students will identify, act on, and evaluate their professional and personal actions with the knowledge and appreciation of interconnections among economic, environmental, and social perspectives in order to create a more sustainable future. (March 2009)



# Collection and Analysis of Syllabi

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- ▶ **Syllabi identified three ways:**

- ▶ course descriptions and interviews with faculty members
- ▶ EcoWiki dedicated to sustainability courses
- ▶ online survey of general education faculty teaching sustainability courses

- ▶ **Syllabi analyzed to understand the:**

- ▶ relationship between learning outcomes and key course components
- ▶ extent to which sustainability courses involve CBL, fieldwork, field trips, etc.



## Results: Analyses of syllabi

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▶ Explicit connection	53	
▶ Implicit connection	<u>74</u>	
▶ Total syllabi		127

▶ *Explicit:* Global Political Ecology: Analyzing and teaching controversial sustainability issues

▶ *Implicit:* Leadership in Natural Resource Management



## Results: Analyses of syllabi with connections to sustainability (N=127)

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▶ Learning outcomes	40	31%
▶ Goals or objectives	24	19%
▶ Learning outcomes tied to assignments	30	24%
▶ Community-based learning or fieldwork	28	22%



# Results: Sustainability assignments

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- ▶ Reflection papers/journals
- ▶ Case study
- ▶ Group projects
- ▶ Role playing
- ▶ Term papers
- ▶ Field trips in the local area
- ▶ Overall focus—Development and demonstration of research skills, communication skills, critical and creative thinking, reflection, ability to collaborate, application of theory to practice/lifestyle



# Conclusions

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- ▶ Faculty often fail to develop learning goals, objectives, or outcomes that they communicate to students.
- ▶ Faculty often fail to design assignments that address outcomes in engaging, authentic ways.
- ▶ Translation of sustainability into applied, skills-based, active learning experiences is challenging.



# Objectives of AIM Group

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- ▶ Respond to Miller project findings
- ▶ Develop a broader understanding of how active learning and community-connected pedagogies help ground sustainability courses in local, regional, and national concerns and increase student learning.



# Members of the Group

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- ▶ **10 members**
  - ▶ Art (2)
  - ▶ Business
  - ▶ Environmental Sciences & Management (2)
  - ▶ Philosophy (2)
  - ▶ Social Work
  - ▶ University Studies
  - ▶ National Policy Consensus Center (CUPA)



# Challenges Faculty Experienced with Sustainability Courses

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- ▶ How can I refine the CBL component of [course] so that students can spend their precious hours outside class with a clearly defined project they can accomplish given their time constraints?
- ▶ What do I need to know and do to have part of the learning come through connections to communities traditionally impacted but often ignored by [profession]?
- ▶ How do I sustain this type of learning model over time?



