

# Changing the Game: Teaching Environmental Sustainability at a Community College

Dr. Frank R. Dunbar  
Chief Academic Officer, Western Campus  
Wayne County Community College District



# Presentation Description

- ◆ Teaching environmental sustainability requires delving into ecology, design and economics.
- ◆ But the game changing topics for students are ethics, social justice and even spirituality.
- ◆ WCCCD has been running a program in Sustainable Building and Sites for two years.
- ◆ This workshop explores the program and its development.

# Presenter Qualifications

- ◆ Currently, Campus CAO at WCCCD; past Associate Dean
- ◆ Visiting Professor in Landscape Architecture at Purdue University teaching Environmental Ethics and Regional Planning
- ◆ Former Instructor in Landscape Architecture at UCLA and University of California, Irvine.
- ◆ Landscape Architect in California for 18 years; Elected Fellow, ASLA
- ◆ Ten Years in Ordained Ministry; Doctor of Ministry
- ◆ Past Director, Resource Renewal Institute, San Francisco.

# The World We Live In...

- ◆ Environmental Concerns a Worldwide Daily Reality
- ◆ Population Growth/Parts of the World Unable to Maintain
- ◆ Economic “Growth” an Issue – Nationally and Globally
- ◆ Global Climatic Change
- ◆ Cross-Species Illnesses
- ◆ Social Issues of all Kinds
- ◆ Fear...Keeping Mine as Mine

# What the World Needs Now is Jobs, Jobs, Jobs...

- ◆ National Jobs Creation a Huge Political Issue
- ◆ New Michigan Governor, Jobs are Number One Issue
- ◆ New Economy – Complete Transformation of Jobs
- ◆ Old Skills May Still be Needed, but New Skills are Critical
- ◆ Some of These Skills Require a New Way of Looking at the World
- ◆ “Sustainability” Enters the Lexicon...

# Sustainability - Definitions

- ◆ Development that meets the needs of the present without compromising the ability of future generations to meet their own needs... (UN Brundtland 1987)
- ◆ The study of the environmental impact of a product, design or service throughout its lifespan (cradle to grave)...(Philly.com – 1/11/2010)
- ◆ The decision making process that takes the future of the planet and all its inhabitants into account when building, designing, creating anything in this world...(WCCCD Western Campus Internal Promotional Marketing, 2011)
- ◆ Stewardship is an ethic whereby citizens participate in the careful and responsible management of air, land, water and biodiversity to ensure healthy ecosystems for present and future generations...(Wikipedia 2008)

# Curriculum Focus – Green, Renewable, Sustainable

- ◆ Models of Curriculum and Programming
  - ◆ Vermont Technical College – Green Building, Green Sites
  - ◆ Los Angeles Community College District – Many Green Programs and Sustainability Institute
  - ◆ University of Tennessee – Certificate in Sustainable Design
  - ◆ Philadelphia University – BS in Environmental Sustainability
  - ◆ Arizona State University – School of Sustainability
  - ◆ UC Berkeley – Comprehensive Sustainability Program
  - ◆ MSU – Sustainability Specialization Across Disciplines

# Unique Programming

- ◆ Sustainability Institute, MSU; Center for Sustainable Systems, U of M
- ◆ Sustainability Journal – Arizona State University
- ◆ Sustainable House – Luther College, Iowa
- ◆ College students impose fee on themselves to go Green, U of Georgia
- ◆ Online Courses and LEED Certification, Boston Architectural College
- ◆ Whatcom Community College, Washington requires sustainability classes for all transfer-degree candidates



# Positioning

- ◆ Community Colleges are at the forefront...by modeling ways to eliminate global warming emissions, creating living classrooms on campus, integrating sustainability principles into curricula, and educating and preparing workers for new, reoriented or emerging jobs... (Academy for Education Development and the National Council on Workforce Education as quoted in the Community College Week, March 2009)
- ◆ A lot of these jobs are not new occupations. They are transforming existing jobs. That's why community colleges are so well positioned. (Mindy Feidbaum, who wrote and edited the report, as quoted in in the Community College Week, March 2009)

# Bucking the Trend

- ◆ Jobs, Job Creation and Retraining for New Jobs Remains at the Center of the Community College Mission
- ◆ But a Curriculum Focused Only Around Jobs was Limiting
- ◆ After Research and Discussion We Bucked the Trend of Looking Only to a Job as an Outcome
- ◆ We Created a Program that was Broad as Opposed to Deep
- ◆ We Created a Program to Develop the Whole Person, New Ethics, New Critical Thinking Skills, Adaptable, yet Informed

# The Sustainable Buildings and Sites Program

- First Semester

- ◆ SED 100 Principles of Sustainable Environmental Design – 3 cr
- ◆ SED 120 Residential and Commercial Sustainable Design – 3 cr

- Second Semester

- ◆ SED 140 Sustainable Materials – 3 cr
- ◆ SED 142 Sustainable Sites – 3 cr
- ◆ SED 144 Ecologically Aware Interiors – 3 cr

# The Sustainable Buildings and Sites Program

- Third Semester

- ◆ SED 146 Sustainable Project Management – 3 cr
- ◆ SED 148 Sustainable Systems – 3 cr
- ◆ SED 160 Sustainable Community Principles – 3 cr

- Fourth Semester

- ◆ SED 200 LEED Certification Exam Preparation – 3 cr
- ◆ SED 220 Sustainable Environmental Design Capstone – 6 cr

# SED 100 – The Foundation

- ◆ *SED 100 PRINCIPLES OF SUSTAINABLE ENVIRONMENTAL DESIGN*
- ◆ This course will provide a broad-based introduction to sustainability that is applicable to all majors. This course examines the historical context and advancement of sustainability as a concept in society. This course will also examine the ethical and scientific basis for sustainable design in the built environment. Topics to be explored include: Renewable Energy, Sustainable Building and Site Design and the development of Sustainable Communities. Students will analyze how these technologies are utilized in rural, urban and industrial settings. They will also gain general knowledge on how to shape the consumer culture in applying more sustainable practices in design.

# Game Changing Topics

## ◆ Ethics

- ◆ Requires thinking beyond just “me.”
- ◆ Principles or standards necessary. Critical thinking required.

## ◆ Social Justice

- ◆ Who owns what? What do those that have owe those that do not? What about legacy? What about our children and their children?

## ◆ Spirituality

- ◆ What right do we have to use up the planet? Is the earth of God? Is the the planet alive? (The GAIA Theory – James Lovelock)

# Questions to Engage Critical Thinking...

- ◆ Is sustainability just for our human benefit or does nature count as well? Do we care about ecosystems and species only because they serve human interests, or do they deserve care just because they are valuable on their own terms....?
- ◆ How much land should be preserved, and how much used for our own purpose? Should we instead ask, how do we have a healthy relationship with every piece of land and every body of water?
- ◆ What does a socially just world look like? Should we begin living more like those in developing countries, or should they begin living more like us? Why don't we choose to live a more equitable life?

# More...

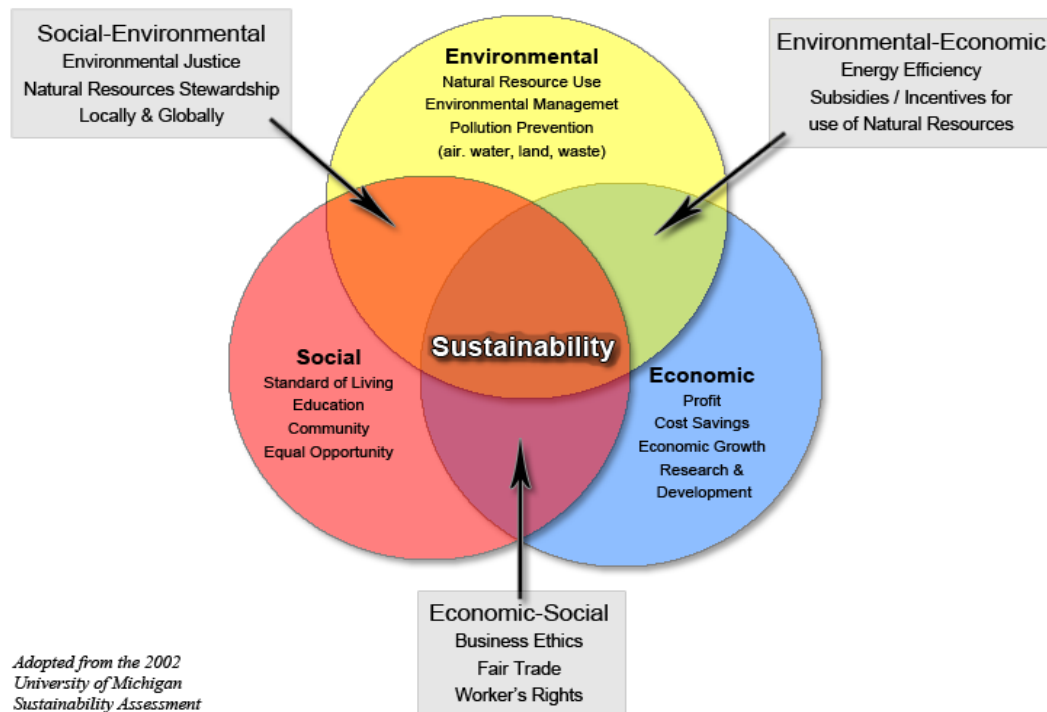
- ◆ Is refraining from reproduction especially virtuous? Does achieving sustainability require satisfying human urges to raise children by first emptying orphanages?
- ◆ How do we tell our needs apart from our desires? Do we need to eat meat and exotic foods imported from all over the world?
- ◆ What is a meaningful life?

- (Questions from: “True Sustainability Needs an Ethical Revolution” as published in The Ecologist, January 2010 - Michael P. Nelson and John A. Vucetich)



# Critical Thinking and Sustainability

## *The Three Spheres of Sustainability*



*Adopted from the 2002  
University of Michigan  
Sustainability Assessment*

# The Results after Two Years

- ◆ Classes Full (started with 10-12 in each class offering, now double that)
- ◆ Grant Program (At our Eastern Campus, Corporate College)
- ◆ Graduates (Assoc of Arts, SED electives) this year
- ◆ Expansion to other Green Programs at WCCCD using SED 100 as a Foundation Course (RET, WET, ALT FUELS, GTT)
- ◆ Link to other programs, Business, Marketing, Economics, Science, HVAC, Facilities Maintenance, Electronics, Computer Information Systems, etc.
- ◆ Sustainability Club
- ◆ SED 100 a desired elective for many majors

# And More Results...

- ◆ Several Students who were undecided, now pursuing 4 Year Degrees in Sustainable Architecture, Landscape Architecture and Planning
- ◆ One student promoted within his company (overseeing Sustainability Efforts) after taking SED 100
- ◆ Interest in Sustainability Officer type positions just as job postings in these positions become more numerous
- ◆ LEED<sub>AP</sub> Certification Test Upcoming