SUST 434 - Synthesis of Sustainability Perspectives and Innovations Spring 2012

(This document will be updated and available at: http://sust.unm.edu)

Instructor:

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Class sessions: Tuesday, Thursday, 12:30-1:45 Castetter Hall, Room 57

Course description:

Presents frameworks for complex and creative analysis, including systems thinking and synergistic integration of the three pillars of sustainability: environment, equity, economy. Examines innovative local and international case studies in environment, business, policy, and community development. Prerequisites: SUST 334

Goals, purposes, and expectations: This course is suited for students interested in the theoretical and practical aspects of community development, local economies, resource conservation, community activism, and environmental protection. This course provides the opportunity to integrate experiences and knowledge gathered in Introduction to Sustainability and Environment (SUST 134), Sustainability Practicum (SUST 334), and the electives students have taken toward the minor degree in Sustainability Studies. Students will engage in more complex levels of understanding the challenges of sustainability as they prepare for the capstone project ahead (SUST 499).

Most students gravitate naturally to one or two of the three pillars of sustainability (environmental protection, social justice, and economic vitality). This course examines all pillars and the interactions among them. We will study frameworks for making meaning from complex situations and integrated design, including systems thinking and interdisciplinary philosophical underpinnings of sustainability. This will enable us to acquire a broader lens through which to design synergistic applications of sustainability's three pillars.

We engage in a caring, creative learning experience with responsible students and thereby gain perspectives that empower us all as agents of sustainability. From Steve Covey's *Seven Habits of Highly Effective People* we favor an outcome that is "win/win". Some languages have no words for "teaching" but over 30 words for "learning". Indeed we can only learn; learning is the basis of personal development and enrichment.

Course design:

First, we review trends and the pillars of sustainability to examine problems such as: (a)



Second, we examine innovations that facilitate sustainable outcomes for the integrated 3pillar system such as alternative currency models, cooperatives, performance-based strategies to achieve goals (e.g., Architecture 2030) and deep democracy, e.g., open source technology process.

Third, we develop systems-thinking perspectives of networks, nonlinearities and tipping points exemplified by the behavior of epidemics, adoption of new ideas, and pattern formation.

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Grading

ading	<u>%</u>		
-	Participation:	10	
	a) Risk analysis exercise	5	
	b) Major/minor expertise w/ justification	5	
-	Exam I :	15	
-	Exam II:	25	Thursday, May 10, 10:00 a.m12:00 noon.
-	Resilence Plan		
	i) Outline	5	
	ii) Final plan	20	
	- Scenario Presentation	15	
-	Extra credit opportunities:		
	c) Scholarly skills	5	

Month	Date	Topics	Readings/Resources	Activity	Due
Jan	17	Introduction	Berry (1988: Ch. 6, 8)	Skills, P ³	
	19	Justin & Transitions	ARG proposal; drama	Major/minor.	
		team	triangle; Martenson	Assign	
			(2010). Writing guide.	Scenario Rpt.	
	24	Scenario Planning	Water Assembly Plan;	Scenario	Scenario
		-	Scenario Planning PPT	training;	self-selection
				Open space	
	26	Trends and Risk	See list of reading	Scenario	Major/minor
		Analysis	assignments each day	group 1	justification
	30	Pillars of Sustainability		Scenario 2	
Feb	2	Empire prosperity		Scenario 3	
	7	Environmental racism		Scenario 4	Risk analysis
					exercise
	9	GMOs and seeds	Cuatro Puertos	Readings	
				check-in	
	14	Biofuels and Food		Who Knew?	
				game.	
				Review	
	16	Exam I		Exam	
	21	Wealth: Disparity &	Presentation guidelines	Scholarly	Scholarly
		Well-being		skills	skills
	23	The Occupy		Readings	
		movement		check-in	
	28	Currency &	<u>Kiva</u>		
		Microlending			
Mar	1	Scenario presentations		Readings	Group
				check-in	Scenario
	6				Presentations
	6	Water: Climate &	Writing guidelines	Assign	
		Supplies		Resilience	
	0			Plan; rubric	
	8	Dams & diversions		OS Groups:	
				Personal	
				resilience	
	20	Irrigation technology		OS Groups:	
	20	inigation technology		Community	
				Resilience	
	22	Fnergy: Peak oil	Tom Whinple video	OS Groups:	
	22	Energy. I cak on	Tom winppic video	National	
				Resilience	
	27	Fracking	Grassland the movie	Resilience	Resilience
	- /	Tuoning			outline
	29	Smart grid: Cap & Tax	Smart grid		
Apr	3	Food: Security			
r r	5	Foodshed development	Foodshed Nomad	Readings	Resilience
	-			check-in	draft
	10	Greenhorns et al.	Quivira speakers 2011		
	12	Coops & Fair Trade	Fair Trade	Readings	
		1		check-in	

SUST 434 Spring 2012 Class Sessions, Resources, and Due Dates

	17	Shelter: Arch 2030,	Architecture 2030;		
		LEED & codes	US Green Building		
			Council		
	19	System Dynamics	Systems thinking	Readings	
				check-in	
	24	Patterns in Nature	Fractals		
	26	Synthesis		Readings	Resilience
				check-in	Plan
May	1	ARG presentation			Presentation
	3	Review		Review;	ARG report
				Course	
				evaluation	
	10	Final Exam (II) 10:00			
		a.m.			

Reading List

Month	Date	Topics		
		-	Readings	
Ian	17	Introduction	8	
Juli	17	introduction	Berry (1988 ch 6)	
			Berry (1988 ch 8)	
	19	Justin & Transitions team	<u>Deny (1988, en. 8)</u>	
			Martenson (2010)	
	24	Seenerie Dienning		
	24	Scenario Flammig		
	26			
	26	Trends and Risk Analysis		
			Smil (2008, cn. 3, excerpted)	
			$\frac{\text{Speth}(2008, \text{ch. 1})}{\text{With}(2011)}$	
	20	Dillars of Sustainability	Wright and Boorse (2011)	
	30	Pillars of Sustainability		
Feb	2	Empire prosperity		
			<u>Kımbrell (2010)</u>	
	7	Environmental racism		
			Grinde and Johansen (1995)	
	9	GMOs and seeds		
			Raney & Pingali (2011)	
	14	Biofuels and Food		
			Pimentel et al. (2008)	
			Tilman et al. (2009)	
	16	Exam I		
	21	Wealth: Disparity & Well-being		
			Kennedy et al. (1996)	
			Speth (2008 ch 6)	
	23	The Occupy movement		
		15	Moyers (2011)	
			Orr (2010)	
	28	Currency & Microlending		
			<u>Alperovitz (2005, ch. 6)</u>	
Mar	1	Scenario presentations		-
ivitui	1	Secturio presentations		
	(Watan Climata & Sampling		
	6	water: Climate & Supplies	Postal (2010)	
			<u>Foster (2010)</u>	
	8	Dams & diversions		
	20	Irrigation technology		[
	22	Energy: Peak oil		
			Whipple (2010)	
			Hughes (2010)	

	27	Fracking	Massac (2011)	
			<u>Mooney (2011)</u>	<u> </u>
	29	Smart grid; Cap & Tax		1
			<u>Fridley (2010)</u>	1
Apr	3	Food: Security		
			<u>CAFO pp. 69-71</u>	1
	5	Foodshed development		
			Kloppenburg et al. (1996)	1
			Peters et al. (2008)	1
	10	Greenhorns et al.		1
			Franceschini & Tucker (2010)	1
	12	Coops & Fair Trade		
				1
	17	Shelter: Arch 2030, LEED & codes		
				1
	19	System Dynamics		·
			Bettencourt et al. (2007)	1
			Barabasi (2003) p. 79-92	1
	24	Patterns in Nature		
			<u>Tero et al. (2010)</u>	1
	26	Synthesis		
				1
May	1	ARG presentation		
				1
<u> </u>	3	Review		
				1
	10	Final Exam (II) 10:00 a.m.		
				1
	1			