

SUST 434 - Synthesis of Sustainability Perspectives and Innovations - Fall 2014

(This document available at: <http://sust.unm.edu>)

Instructor:

Dr. Bruce T. Milne, Professor of Biology &
Director, UNM Sustainability Studies Program
Office: Biology Annex Room 110a
Email: bmilne@sevilleta.unm.edu
Office Hours: Tuesday 9:30 - 10:00 and Friday 10:00 – 11:30,
or by appointment at our convenience

Class sessions: Tuesday, Thursday 12:30-1:45 p.m. Mitchell Hall, Room 105

Books: Diamandis, P. and S. Kotler. 2012. Abundance: The Future Is Better Than You Think. Free Press. ISBN 9781451614213
Huesemann, M. and J. Huesemann. 2011. Techno-fix: Why Technology Won't Save Us or the Environment. New Society Publ.

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.

Plagiarism: The Faculty Handbook, policy D100, affords instructors the authority to respond to plagiarism by granting a grade of "...F' in the course and the involuntary withdrawal of the student from the class..." Avoid committing plagiarism by making all your work your own. Do not cut and paste from web sites, Dropbox, or articles. Brief, direct quotes are allowed but must be documented as such. Always put quotes within quotation marks or in a smaller italics font, with complete attribution to the source.

Course design:

We focus on scholarship and theory with which to guide effective solutions for sustainability.

<u>Grading</u>	<u>%</u>	<u>Notes</u>
Midterm	15	September 30
Final	20	December 11, Thursday 10:00 a.m. – noon.
Portfolio:		
My Worldview	5	
Technology Self-audit	10	
Essay: Proper Roles of Technology	10	10 pages, double spaced, with 10+ citations from scholarly literature
Biographical timeline	15	(3) 500-1000 word biographies of 3 people quoted in <i>Techno-fix</i>
Panel participation	5	Join a topical panel to share insights from one of your assignments.
Exercises and assignments	<u>20</u>	There will be approximately 20 low-stakes assignments including the
	100	Reading Diary Forms and Reflection Guides. Please complete these to prepare for class. Missing many of these assignments will lower your course grade by one letter.

SUST 434 - Schedule Fall 2014

Notes: 1) Where "Due for *this class*" lists "**Read...**", please complete the "[Reflection Guide](#)" to hand in for credit.

Where it lists "**RD ...**", please complete the "[Reading Diary](#)" to hand in for credit.

2) Assigned chapters from *Abundance* are listed, e.g., "A 1-3" means *Abundance*, chapters 1-3.

Assigned chapters from *Techno-Fix* are listed, e.g., "TF 1-3".

Date	Topics	Due for this class:	Resources	Activities
Aug 19	Introduction		Reflection Guide	Syllabus; Skills inventory
21	Worldviews	Read Bijker (2001) and fill out the Reflection Guide to bring to class.	Reading as a scholar ; SSP Writing Guide	Skills summary; Discuss Bijker (2001); <i>My Worldview assignment</i>
26	Worldviews	Read Fudpucker (2001)		Discuss Fudpucker (2001); <i>Panel signups</i> ; Grading criteria
28	Worldviews	<i>My Worldview</i>		Worldview Panel ; Technology Audit assignment ; Table/Figure Exercise
Sept 2	Perspectives (M. Chang)	Read A1-3 ;		Discuss A1-3; Approaches to the Tech Audit
4	Perspectives (M. Chang)	Read TF1-2	Democratization of Technology	Discuss TF 1-2

9	Technology Audit	Technology Audit		Technology Audit Panel; <i>Biographic Timeline assignment;</i>
11	Social Aspects	Read TF 3-4	Oppression	Discuss TF 3-4; <i>Roles and Responsibilities of Technology Assignment</i>
16	Optimism and Inevitability Collapse	Read A 4-6 Read TF 5-6	Singularity RoboBees Jevons' paradox	Discuss A4-6, TF 5-6; <i>Biographical selections</i>
18	Critique of Optimism	Read TF 7-8	The Case of Biofuels	Discuss TF 7-8
23	Happiness	Read TF 9	GINI	Discuss TF 9
25	Two Billion Customers Served	Read A 7-9, 13	Robotics	Discuss A 7-9, 13; Review for exam
30	Midterm Exam	Midterm Exam		
Oct 2		Read TF 10-11		Discuss TF 10-11;
7	Forces of Abundance	Read A 10-12		Discuss A 10-12
9	Fall break			
14	The Next Revolution	Read TF 12-13		Discuss TF 12-13
16	Peak of the Pyramid	Read A 14-17	The "Twenty-fivers" generation	Discuss A 14-17

21	Design of Appropriate Technologies	Read TF 13	Heritage farming	Discuss TF 13
23	Future Trends	Read A 18-19		Discuss A 18-19
28	A More Critical Responsibility	Read TF 14		TF 14
30		<i>Biographical Timeline</i>		Timeline assembly; Biography panel
Nov 4	Biomimicry	RD Tero et al. (2010) with the Reading Diary filled out	Reading Diary Entry Form	Presentation, video
6	Urban Complexity	RD Bettencourt et al. (2007)	Brown et al. (2011) , Scheffer et al. (2012) ; Barnosky et al. (2012)	Presentation; Literature as Time Machine
11	Water-Food Nexus	Read Foley (2011)	Costanza et al. (2009) ; Howarth et al. (2002) ; Leach et al. (2013)	
13	Benefits of Biodiversity	Read Naeem et al. (2012)	Worm et al. (2006)	Effect size

18	Foodshed Development	Read Kloppenburger et al. (1996)	Peters et al. (2008); Value Chain Handbook; Coops in Wisconsin	Optimization; Story of Foodshed Nomad
25	Public Health Components	Read Velasquez-Manoff (2013) ; <i>Roles of Technology</i>		Technology Roles & Responsibilities Panel
27	Thanksgiving break			
Dec 4	Hopeful Views for the Future	Read Wallace (2006)	Dreaming NM	Discuss Wallace (2006); Envisioning Our Scenarios for 2030
6	Review Session	Bring questions to ask about the exam		Review for exam
8	Evaluation		Trajectory of a Graduate Student	Discussion: Career Paths for This Generation
11	Final Exam 10:00 a.m. - noon	Final Exam 10:00 a.m. - noon		