

## **SUST 434 - Synthesis of Sustainability Perspectives and Innovations - Spring 2017**

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

### **Instructor:**

Dr. Bruce T. Milne, Professor of Biology & Director, UNM Sustainability Studies Program

Office: Casteretter Hall, room 1582

Email: [bmilne@sevilleta.unm.edu](mailto:bmilne@sevilleta.unm.edu)

Office Hours: Tuesday 9:30 - 10:00 and Friday 11:00 – 11:30,

or by appointment at our convenience

**Class sessions:** Tuesday, Thursday 12:30-1:45 p.m. Mitchell Hall, Room 219

### **Required texts:**

Friedman, Thomas L. 2016. Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Acceleratinos. Farrar, Straus and Giroux, New York. 486 pp. Hardcover ISBN: 978-0-374-27353-8. Ebook ISBN: 978-0-374-71514-4.

Brownlee, Michael. 2016. The Local Food Revolution: How Humanity Will Feed Itself in Uncertain Times. North Atlantic Books, Berkeley, California. 438 pp. ISBN 9781623170004 (print). ISBN 9781623170011 (ebook).

### **Supplemental materials drawn from:**

1. Diamandis, P.H. and S. Kotler. 2012. Abundance: The Future is Better than You Think. Free Press.
2. Huesemann, M. and J. Huesemann. 2011. Techno-Fix: Why Technology Won't Save Us or the Environment. NSP.
3. Mullainathan, S. and E. Shafir. 2013. Scarcity: The New Science of Having Less and How It Defines Our Lives. Picador.
4. Seager, J. and L.S. Polansky, eds. 2016. The Good Crisis: How Population Stabilization Can Foster a Healthy U.S. Economy. Population Connection.
5. Stoknes, P. E. 2015. What We Think About When We Try Not to Think About Global Warming: Toward a New Psychology of Climate Action. Chelsea Green.
6. Toyama, K. 2015. Geek Heresy: Rescuing Social Change from the Cult of Technology. Public Affairs.

**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 134.

**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. We frame our studies within the context of the “Age of Acceleration” that involves the ongoing development of technologies, coupled to globalization and climate change.

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 with challenges of sustainability as they prepare for the capstone project (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 view with 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 quoted text within quotation marks or in a smaller italics font, with complete attribution to the source.*

**Sexual misconduct, harassment, and assault:**

The following statement is courtesy UNM Office Equal Opportunity. "Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus, especially the LoboRESPECT Advocacy Center and the support services listed on its website (<http://loborespect.unm.edu/>). Please note that, because UNM faculty, TAs, and GAs are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator. For more information on the campus policy regarding sexual misconduct, please see: <https://policy.unm.edu/university-policies/2000/2740.html> LoboRESPECT Advocacy Center, Women's Resource Center and the LGBTQ Resource Center have specially trained advocates and they do NOT share information with anyone else without a student's signed permission."

<b>Assignments and Grading</b>	<b>%</b>	<b>Due</b>	<b>Notes</b>
<u>Looking within:</u>			
My Worldview	10	Jan. 31	What do you believe? What do others believe?
Thirty Days of The Method	10	Feb. 28	Developing an abundance mentality -- Learn and practice for 30 days.
<u>Engaging with the flow:</u>			
Panel participation	5	Various	Join a panel to share insights about one of your assignments.
Systems of Five Elements	10	Mar. 7	Apply the oriental theory of Five Elements to a system of your choice.
Profiles of Local Foodshed Catalysts	10	Mar. 21	Pairs: Visually celebrate people who are local food system catalysts.
Land Terracing Manual	10	Apr. 25	Prototype an instruction manual for use in African climate adaptation.
Foodshedopoly	15	May 2	Groups: Create a game to teach foodshed development concepts.
<b>Midterm</b>	10	Mar. 9	Reading summaries are your resources for the open-book midterm.
Reading summaries	20	Due on day of class for discussion and preparation for class activities. Points off for being late.	
	100		

Keep track of your assignments and due dates with this handy [assignment checklist](#).

**SUST 434 - Schedule Spring 2017**

Notes: 1) Where the column “Due for this class” lists “**Read...**,” please complete and print the “[Reading summary](#)” to hand in for credit. You may combine multiple assignments for a given day into one reading summary. Points taken off for late submissions because everyone needs to prepare for class experiences.

2) Assigned chapters from Friedman listed as **F#**, e.g., chapter 1 is **F1**. Chapters from Brownlee listed as **B#**.

Date	Topics	Due for this class:	Resources	Activities
Jan 17	Introduction		<a href="#">Reading summary</a>	Syllabus; Skills inventory; Course goals
19	Worldviews	<b>Read</b> <a href="#">Heusemann Ch. 12</a>  <b>Read</b> <a href="#">Macy (2013)</a> Bring a <a href="#">Reading Summary</a> to class, filled in.	<a href="#">Reading as a scholar</a>  <a href="#">Koltko-Rivera 2004</a>  <a href="#">SSP Writing Guide</a>	Skills summary;  Presentation: Questions prompted by Heusemann Ch. 12 and Macy (2013) <a href="#">Macy video</a> Discuss readings and worldviews. <a href="#">My Worldview assignment</a> ; Kick-off exercise
24	Global trends and local innovations	<b>Read</b> <a href="#">Clark &amp; Dickson (2003)</a> <b>Read</b> <a href="#">Berry (1988)</a>	<a href="#">Ostrom (2009)</a>	Panel signups; <a href="#">Grading criteria</a> Discuss Clark & Dickson (2003), Berry (1988); optional Ostrom (2009)
26	Scarcity and Abundance	<b>Read</b> <a href="#">Mullainathan and Shafir (2013, Ch. 2)</a>	<a href="#">Diamandis Ch. 2</a>	Start your 30 days of practice. <a href="#">The Method Assignment</a> <a href="#">The Method Log Chart</a> to keep you on track. Discussion: Scarcity v. Abundance mentality

31	Needs: Food	<b>Read</b> <a href="#">Diamandis Ch.9</a> <b>Read B1;</b> <b>Worldview due</b>	<a href="#">Foley (2011)</a>	Perspectives of Gunther Pauli ; <b>Worldview Panel;</b>
Feb. 2	Needs: Education	<b>Read F1</b>	<a href="#">Berger &amp; Fisher (2016);</a> <a href="#">Matson Ch. 2 (Goals of sustainability)</a>	Presentation: Tribal BA attainment in NM Discussion: Life-long learning <a href="#">Assignment: Foodshed Catalyst Profile</a> [Supporting readings: <b>B26, B27</b> ]
7	Age of Acceleration	<b>Read F2</b> <b>Read</b> <a href="#">Diamandis Ch. 6 The 9 technologies</a>	<a href="#">Toyama Ch 6 Amplifying people</a>	Guest speaker: Technology
9	Moore's law	<b>Read F3</b>	<a href="#">Barnosky et al. (2012)</a>	
14	Dynamics and Systems of Five Elements; The Supernova	<b>Read F4</b>	<a href="#">Kaptchuk (1983. Appendix H);</a> <a href="#">Holling (2001)</a>	Presentation: Five Element systems and the Elements of a holistic theory for sustainability. <a href="#">Assignment: Application of Five Elements</a>
16	Globalization	<b>Read F5</b>	<a href="#">Lee (2016)</a>	
21	Climate Change	<b>Read F6, Read B11</b>	<a href="#">Stoknes Ch. 5</a>	Guest speaker
23	What it will take?	<b>Read F7</b>		
<b>28</b>	Intelligence – Artificial and Otherwise	<b>Read F8 ;</b> <b>The Method</b>	<a href="#">Bettencourt et al. (2007)</a>	<b>The Method Panel;</b> <b>Gratitude jars</b>
Mar 2	Control vs. Kaos	<b>Read F9</b>	<a href="#">Scheffer et al. (2012)</a>	Theory of tipping points
7	Mother Nature	<b>Read F10</b> <b>Five Elements</b>	<a href="#">Naeem et al. (2012)</a>	<b>Panel: Five Elements</b>
9	<b>Midterm</b>	<b>Midterm exam</b>		

14 & 16	<b>Fall Break</b>			
21	Food Independence	<b>Read B2, B3, and B4 Profile of Foodshed Catalyst</b>	<a href="#">Kloppenburg et al. (1996)</a> ; <a href="#">Peters et al. (2008)</a>	<b>Panel: Profile of Foodshed Catalyst</b> <b>Assignment: <i>Foodshedopoly</i></b> <b>Support: <a href="#">Moving Food Along the Value Chain</a></b>
23	Local Experiences	<b>Read B5,6,7,8</b>	<a href="#">Food hubs guide</a>	Guest speaker
28	Peak Everything	<b>Read B10, Read B13</b>	<a href="#">Seppelt et al. (2014)</a> ; <a href="#">Costanza et al. (2009)</a>	
30	Emergence	<b>Read B14, Read B15</b>		
<b>Apr 4</b>	Catalysts	<b>Read B18, Read B19</b>	<a href="#">Supply chains</a>	<i>Foodshedopoly</i> work session
6	Pattern Language	<b>Read B20, Read B21</b>	<a href="#">Zeedyck guide; New Forest Farm</a>	<a href="#">Assignment: Land Terracing for Climate Adaptation</a> ; Field trial
11	Community Engagement	<b>Read B28</b>	<a href="#">Diamandis Ch 17</a>	<i>Foodshedopoly</i> pilot trials
13	Choices: Biotech	<b>Read B30</b>		Presentation
18	Choices: Role of Animals	<b>Read B31</b>	<a href="#">Worm et al. (2006)</a> ; <a href="#">Tomaselli (2010)</a>	Game assessment/trials
20	Choices: Aquaponics	<b>Read B32</b>		Greenhouse demonstration
25	Choices: Local Capital	<b>Read <a href="#">Czech (2016) Land Terrace Manual</a></b>		<b>Panel: Land Terrace Manual</b> Activity: Making Your Plan for the Age of Acceleration
27	Foodshedopoly			Wrap up group work
<b>May 2</b>	Foodshedopoly	<b><i>Foodshedopoly</i></b>		<b>Panel: <i>Foodshedopoly</i></b> Outcomes and critiques
4	Synthesis: MMM and Your Plan		<a href="#">Trajectory of a Graduate Student</a>	Discussion: Career Paths for This Generation.