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FORMAT 1

Submit original with signatures & 1 copy of electronic copy to YAN G

**11. COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual.

If justification is needed, attach on separate sheet.)

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement

YES

NO

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6

W = Writing Intensive, Format 7

Natural Science, Format 8

**12. COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES

NO

Justification: Indicate why the course can be repeated

How many times may the course be repeated for credit?

TIMES

***JUSTIFICATION FOR ACTION REQUESTED***

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

This course offers an in-depth investigation of the development of food and agricultural systems across world regions and

**COMPARATIVE FARMING AND SUSTAINABLE FOOD SYSTEMS  
CCS/NRM/GEOG 493 SYLLABUS  
SPRING SEMESTER, 2011  
3 CREDITS**

Altieri, Miguel  
1995 Agroecology, The Science of Sustainable Agriculture. Westview Press, Second Edition.

**RECOMMENDED TEXTS (Selected sections to be distributed electronically)**

- Friese, Kurt, Kraig Kraft, and Gary Nabhan  
2011 Chasing Chiles, Hot Spots Along the Pepper Trail.
- Herrera De, Gabriel Alsonso  
2006 Ancient Agriculture, Roots and Application of Sustainable Farming. Ancient City Press.
- Logsdon, Gene  
2010 Holy Shit, Managing Manure to Save Mankind. Chelsea Green Publishing.
- Winne, Mark  
2010 Food Rebels, Guerilla Gardeners, and Smart-Cookin' Mamas, Fighting Back in an Age of Industrial Agriculture. Beacon Press.
- Weiseger, Marsha  
2009 Dreaming of Sheep in Navajo Country. University of Washington Press.
- Kurlansky, Mark  
2009 The Food of a Younger Land, A Portrait of American Food. Riverhead Books.
- Beahrs, Andrew  
2010 Twain's Feast, Searching for America's Lost Foods in the Footsteps of Samuel Clemens. Penguin Press.
- Thompson, Peter  
2010 Seeds, Sex and Civilization, How the Hidden Life of Plants has Changed Our World. Thames and Hudson.
- Dworkin, Susan  
2009 The Viking in the Wheat Field, A Scientist's Struggle to Preserve the World's Harvest. Walker Publishing Company, Inc.
- National Research Council  
2009 Transforming Agricultural Education for a Changing World. The National Academies Press, Washington D.C.
- Pollan, Michael  
2008 In Defense of Food, An Eater's Manifesto. Penguin Press.
- Warner, Keith D.  
2007 Agroecology in Action, Extending Alternative Agriculture through Social Networks. MIT Press.
- Salatin, Joel  
2007 Everything I want to do is Illegal, War Stories from the Local Food Front. Chelsea Green.
- Sayre, Nathan  
2005 Working Wilderness, The Malpais Borderlands Group and the Future of the Western Range. Rio Nuevo Publishers, Tucson.
- Nabhan, Gary Paul  
2004 Why Some Like it Hot, Food, Genes and Cultural Diversity. Island Press.

- Kloppenborg, J.R.  
 2004 *First the Seed, The Political Economy of Plant Biotechnology, 1492-2000.* University of Wisconsin Press.
- Ana G. Valenzuela-Zapata, and Gary Paul Nabhan  
 2003 *!Tequila! A Natural and Cultural History.* University of Arizona Press.
- Jackson, D. and L. Jackson (eds)  
 2002 *The Fatal Harvest Reader, The Tragedy of Industrial Agriculture.* Island Press.
- Uphoff, Norman (ed)  
 Nabhan, Gary Paul  
 2002 *Coming Home to Eat, The Pleasure and Politics of Local Foods.* W.W. Norton.
- Uphoff, Norman (ed)  
 2002 *Agroecological Innovations, Increasing Food Production with Participatory Development.* Earthscan.
- Brookfield, H., C. Padoch, H. Parsons, and M. Stocking  
 2002 *Cultivating Biodiversity, Understanding, Analyzing and Using Agricultural Diversity.* UNEP, United Nations University.
- Jackson, D.L., and L. L. Jackson (eds)  
 2002 *The Farm as Natural Habitat. Reconnecting Food Systems with Ecosystems.* Island Press.
- Bove, Jose and Francois Dufour  
 2001 *The World is Not For Sale, Farmers Against Junk Food.* Verso, London and New York (translated from the French Original).
- Manning, Richard  
 2000 *Food's Frontier, The Next Green Revolution.* University of California Press.
- Pretty, Jules  
 1995 *Regenerating Agriculture.* Earthscan Publishers.
- Cherikoff, Vic, and Jennifer Isaacs  
 1990 *The Bush Food Handbook, How to Gather, Grow, Process & Cook Australian Wild Foods.* TI Tree Press.
- Berry, Wendell

through the contrast of historically proven crop and livestock production systems with new and innovative strategies for developing strong and resilient/sustainable food systems at multiple scales.

The overall problem: What solutions can we generate to realistically confront contemporary food, farming and agricultural problems? Where is the contemporary agroecological system strong, where is it weak with respect to sustainability, and how can we become better educated and more innovative in dealing with food production, distribution, access, and the promotion of ecosystem health? My own bias is toward the small-scale, local and “slow” crop and livestock production systems, and toward the development of appropriately scaled systems that promote functionally integrated farm models, strong farm economies and healthy rural communities. I am also interested in on-farm innovation and policy barriers and constraints that promote successful farmers who are on the land, and intelligent consumption of healthy foods.

Given that we are in Alaska with an interest in expanding farming and producing local food for local consumption, we review high latitude production and food systems, including emphasis small and mid-size farms, on new initiatives in rural Alaska to restore gardening and food production as a component of the subsistence system; in this context, we will look at the problems and prospects of the country food and wild game harvest, the nutrition transition to increased reliance on highly processed foods from the village stores, a transition that includes the rural and the urban, and that is occurring at different times, rates and places throughout the developing world.

As time allows, we will compare and contrast food and farming systems from around the world, and will situate this discussion in a general context of social, ecological and economic sustainability. The problems posed here are complex and require interdisciplinary perspectives if we are to define and implement integrated and well designed solutions to the problem of food production, consumption, and food security. Interdisciplinary here means the integration of concepts derived from agroecology, geography, political ecology, other relevant social, agricultural and ecosystem sciences, from food and nutritional ecology. While academic disciplines tend to fragment into one-dimensional islands of thought, I rather prefer to work toward cross-disciplinary understanding of problems through the integration of good and workable ideas with applied standards of practice.

Sustainability is a key concept in this class; unfortunately, the word has come to mean everything and nothing through use and abuse, so we can think instead of the Japanese word---*shizen*---something I take to mean a spontaneous, self-renewing sacred and natural world of which humans are inextricably a part, in short, the “Gardeners of Eden” perspective. Through the course we will explore this idea through review and understanding of farming and food as culture, art, science and practice.

## **COURSE GOALS**

The overall course goals: to understand and think critically about where our food comes from; to provide the knowledge base from which you can critically evaluate arguments

for and against various forms of food production and the food system; and, finally, to expose you to the challenges, the problems and prospects of the industrial food system as we know it, and to better understand new and innovative approaches that are emerging at the local and regional levels, local production for local consumption!

(1) We will review and evaluate existing problems in industrial food production, look at alternatives to industrial production, including but not limited to organic, natural systems farming, perennials as opposed to annuals, the appropriate use of heirloom livestock breeds, etc., and we will analyze and discuss the problems and prospects from multiple social, historical and ecological perspectives with information and ideas drawn from many different disciplines;

(2) We will review the role of food systems and nutrition in promoting or degrading individual, community and ecosystem health;

(3) We will examine the forces/stressors (internal, external) that condition food collection/production activities in Alaska and other high latitude systems, with comparison to food and farming systems in Latin America, Africa and Asia;

(4) We will define and analyze where agricultural/farming systems are vulnerable to change in economic, socioeconomic and climatic drivers;

(5) We will review how food production enhances or degrades ecosystem services through human action and practice, examine how and under what conditions small and large-scale agroecological systems integrate or fragment ecosystems, and work toward a better understanding of how and under what conditions appropriately scaled systems that promote or degrade community viability and health are important.

## **LEARNING OBJECTIVES**

( 1 ) To gain an understanding of the development and geographical diffusion of cultivars, cultigens and livestock; land use; and social interaction and trade in relation to food systems.

( 2 ) To develop an understanding of how and why certain agricultural innovations, and food and culinary traditions develop in specific places, within a context of sustainable systems of agricultural development, crop and livestock production.

( 3 ) To examine the role of humans as agents of change, and to view humans as active rather than passive players on dynamic landscapes, and how and under what conditions crop and livestock production systems enhance or degrade ecosystem structure and function over short and long time scales.

( 4 ) To take a broad, interdisciplinary perspective on food production activities, incorporating and synthesizing all aspects of human culture, society and geography to create a more comprehensive, holistic interpretation of how food systems are evolving globally today.

( 5 ) To understand the transitions that farming and food systems have gone through in the past, to review and evaluate the implications of food and farming



transitions for human societies today, and to be able to develop scenarios and models, forecasts and projections about how such transitions may progress in the future.

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**COURSE REQUIREMENTS/EXPECTATIONS**

Lecture and discussion topics are listed by week in the syllabus. Readings are assigned at beginning of each class period. You are expected to read and be prepared to discuss everything that is assigned, and to come to class prepared, ready to participate, and to do all of the assignments.

There will be a take home mid term exam and a take home final. Throughout the semester there will be assignments, including discussion of the readings and oral presentations, with students responsible for leading discussion of selected readings

Specific problem sets will be assigned throughout the semester, with these requiring analysis and formally written answers. You will each have a specific research project to work on, with oral presentations scheduled for the last week of the semester, and the final paper due the day that the final exam is scheduled.

Final grades will be based on effort, interest, contributions to weekly discussions, performance on individual written assignments and research paper (see grade distribution below). Everyone has an A going in; it is your job to maintain it. You are expected to turn in assignments on time. If you have to miss class, be late, leave early, etc., you need to let one of us know.

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**GRADE DISTRIBUTION**

Review/Reaction Paper	20%
Mid-Term Exam	20%
Final Exam	20%
Contributions to class discussion	20%

(Class discussion includes at least two oral presentations about topics and/or articles raised and/or read in class, a final 10-15 minute oral pres

A written abstract and overview of the project is due within the first three weeks of the class.

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## **WEEKLY TOPICS AND SCHEDULE**

### **Week 1**

Introduction: Overview of course, goals, objectives, expectations, and grading system. Frameworks for analysis of food systems and agricultural/farming systems define the scope of the course.

Assigned reading: “Principles for Framing a Healthy Food System,” M. W. Hamm.

### **Week 2**

Defining Food Systems. The “anatomy” of the contemporary food system, what are the components and relationships between and among components, where is the food system strong, weak and vulnerable for both producers and consumers? The first principles of food system analysis outlined, and general discussion of what we eat, how we eat, how we produce what we eat, nutrition and health. The cultural, ecological and political economy of the global food system: Local, regional and global food security problems; hunger, poverty, vulnerabilities in the global food supply.

Assigned readings:

Selections to be assigned from “Food Security and Global Environmental Change” by Ingram, Erickson and Liveman, eds.

Lappe, A., “Eat the Sky: Seven Principles of a Climate -Frie

Agroecology and the science of sustainable agriculture: Principles reviewed. The meaning of sustainability, renewability and restoration in a context food production, “on the farm and ranch,” and for the consumer.

Assigned Reading:

Altieri, M. The Evolution of Agroecological Thought, pp. 1-19. In, Agroecology, The Science of Sustainable Agriculture.

### **Week 6**

Modes of agriculture and Cross-Cutting Food Production Issues at High Latitudes. Seasonality, Soil Fertility and tillage, energy budgets, “healthy farms and lifestyles,” economic viability, infrastructure and marketing, community supported agriculture, food cooperatives and more. Introduction to high latitude production systems (Alaskan) that will produce local food for local consumption, with emphasis on production strategies that preserve ecosystem structure and function, produce healthy food (crops) for local (scales and levels of organization discussed) consumption.

### **Week 7**

High Latitude, reduced input systems: organic production systems and natural systems farming; economies of scale, biodiversity, healthy farms, healthy farmers, and healthy ecosystems.

Assigned Reading:

Jackson, D.L. “Food and Biodiversity.” In, The Farm as Natural Habitat, Reconnecting Food Systems with Ecosystems, pp. 247-260. This article will be distributed electronically.

### **Week 8**

High Latitude, reduced input systems continued: permaculture, biodynamic systems, season extension strategies, infrastructure, greenhouses, hoop houses, high tunnels, storage, marketing, education.

Assigned Reading:

Lappe, A. “Cool Food: Five Ingredients of Climate Friendly Farming.” In, “Diet for A Hot Planet, pp. 129-149.

Jordan, N.R. “Sustaining Production with Biodiversity.” In, “The Farm as Natural Habitat,” pp. 155-168 (to be distributed electronically)

## **TAKE HOME MID-TERM HANDED OUT AND DISCUSSED**

### **Week 9**

Rural Alaskan Food Systems: Problems, prospects for the future, village sustainability challenges, food system innovation.

Assigned Reading:

Gerlach, Loring, Turner and Atkinson. “Environmental Change, Food Systems and Community Needs in Rural Alaska.” In, North X 2020, Perspectives on Alaska’s Changing Social-Ecological Systems, Lovecraft and Eicken, editors. University of Alaska Press. 2011.

Paragi, Gerlach and Meadow. "Food Security and Red Meat Production in Alaska." *Agroborealis* (2011) 41 (1): 36-37.

Loring, Gerlach, Atkinson and Murray. "Ways to Help and Ways to Hinder: Governance for Successful and Sustainable Livelihoods in an Uncertain Climate." *Arctic* (2011) 64(1): 73-88.

Loring and Gerlach. "Food Security and Conservation of Yukon River Salmon: Are We Asking too Much of the Yukon River?" *Sustainability* (2010) 2: 2965-2987; doi.

Loring and Gerlach. "Outpost Gardening in Interior Alaska: Food System Innovation and the Alaska Native Gardens of the 1930s-1970s." *Ethnohistory* (2010) 57(2): 183-199.

Loring and Gerlach. "Food, Culture and Human Health: An Integrated Health Approach to Food Security." *Environmental Science and Policy* 12 (2009): 466-478.

### **Week 10**

The Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems. Farming with the wild, enhancing biodiversity, rediscovering the cultural in agricultural, looking at ways to renew healthy farm communities, strong local economies, and healthy ecosystems.

Assigned Reading:

Jackson and Jackson, *The Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems*. Island Press. (Selections from book will be distributed electronically).

### **MID-TERM HANDED IN**

## **Week 12**

Sustainable Livestock Production and Integrated Farm Systems: Comparative perspectives and examples from high latitudes in Europe and North America. Bison, Elk, Beef, Sheep/goats, Swine, Poultry? Managing for sustainability, grazing systems, management strategies for livestock vs. wildlife.

Assigned reading:

Lappe, A., "Blinded by the Bite." In, Diet for a Hot Planet.

Additional Readings to be assigned from Alan Savory, "Holistic Resource Management (to be distributed electronically).

## **Week 13**

From chilies to chocolate: where our food comes from, and the future of food: Pre-Columbian exchange and food production systems, crop and crop complexes, global review of centers of crop and livestock domestication and production. Farmers, Farmer responses to climatic and social change, seed saving, seed banks, hybrid seed, genetically modified seed, and who controls the food supply?

Assigned Reading:

Gary Nabhan, "Where Our Food Comes from: Retracing Nilolay Vavilov's Quest to End Famine." Island Press.

## **TAKE HOME FINAL EXAM HANDED OUT**

## **Week 14**

The Political Economy of Plant Biotechnology; debates, problems, prospects, pros and cons. Discussion of Borlaug (1914-2009) and the "Green Revolution."

Assigned Readings:

Kloppenburger, J.

1988 "First the Seed, The Political Economy of Plant Biotechnology, 1492-2000. (Selections to be distributed electronically)

Dworkin, Susan

2009 "The Viking in the Wheat Field, A Scientist's Struggle to Preserve the World's Harvest." (Selections to be distributed electronically)

## **Week 15**

Final paper oral presentations and discussion

## **TAKE HOME FINAL HANDED IN**

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### **UAF POLICIES**

You are expected to read, understand and adhere to the academic code of honor detailed in the UAF Catalog. If you have a disability or for any reason need special consideration, let us know and we accommodate your special needs as appropriate. There is an elevator in Signer's Hall that provides access to the third floor of Eielson. Priority seating is available according to need. A note on "borrowing": remember-copying one author without attribution is plagiarism; using the results of many with attribution is research.

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**DISABILITIES SERVICES**

The University of Alaska is committed to providing equal access for students with disabilities. The Office of Disabilities Services implements the Americans with Disabilities Act (ADA) to ensure that all students have equal access to campus and course materials. We will work with this office to provide reasonable accommodation to students with disabilities. Please advise in advance in writing if you need special consideration. The telephone number for the Office of Disabilities Services is 474-5695.

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**CELL PHONES AND IN CLASS COMPUTER USE**

It is not a good idea to let your cell phone ring during class, and you are expected to use your computer appropriately.

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