

Lecture Syllabus

ESPM 117

Urban Garden Ecosystems

Fall 2015

Instructor

Professor Miguel A. Altieri

agroeco3@berkeley.edu

Office hours: By appointment only (Mulford 215)

Graduate Student Instructors

Linden Schneider, lmschneider@berkeley.edu

Office hours: Monday 11:30-1:30, 151 Hilgard Hall, or by appointment

Sarick Matzen, smatzen@berkeley.edu

Office hours: Thursdays 1:00- 3:00, 151 Hilgard Hall, or by appointment

Leslie McGinnis, lamcginnis@berkeley.edu

Office hours: Fridays 3:00- 5:00, Student Organic Garden, or by appointment

Course Summary

ESPM 117 provides a socio-ecological approach to the study of urban food production, examining the forces driving biodiversity, energy conservation, job creation, human health and well-being. The agroecological basis of vegetable and fruit production is discussed. The course is interactive and hands-on, integrating theory, practice and service learning.

Lectures

Tuesday 4-7pm, 180 Tan Hall

The lecture component consists of lectures, guest speakers, and discussion of readings, field trips and student group presentations. Topics covered include:

- Extent and significance of urban agriculture in both the United States and the developing world
- Driving forces behind the development and growth of urban agriculture
- Impact of urban agriculture on community development, food security and public health
- Assessing local network of urban agriculture initiatives, including community gardens to youth training and community food security projects
- Research, policy and city planning challenges and opportunities for urban agriculture in Oakland and Berkeley
- The role of urban agriculture in urban food justice and international food sovereignty movements

Texts

Required

We assign several readings from the two required gardening books listed below. You may wish to purchase your own copy as a reference for this class and future gardening projects. They are also available on reserve at the [BioScience and Natural Resources Library](#). All other texts assigned for this class are available under bCourses Resources.

- Pam Pierce (2010). *Golden Gate Gardening: The Complete Guide to Year-round Food Gardening in the SF Bay area and Coastal California*
- Novella Carpenter and Willow Rosenthal (2011). *The Essential Urban Farmer*
- Additional required readings are posted to bCourses Resources

Additional References

Recommended but not required for the course:

- Kathleen Brenzel, ed. (2007). *The Sunset Western Garden Book*
- Elliot Coleman (1995). *The New Organic Grower*
- Christine and Michael Lavelle (2008). *How to Grow Organic*
- D.G. Hessayon (1997). *The New Vegetable and Herb Expert*
- Barbara W. Ellis and Fern Marshall Bradley (1996). *The Organic Gardener's Handbook of Natural Insect and Disease Control*

Material Fee

Each student will contribute \$15 towards materials, such as seeds and tools, used in lab sections and Oxford Tract projects.

Grading

For full credit, each student will be responsible for full attendance and participation in lecture and lab, midterm exam, crop planning assignment, and final group project. Assignments submitted after due dates will not be accepted unless due to medical or

other emergencies. If you are a participant in the Disabled Students' Program (DSP), please see the instructor or GSIs to discuss any specific needs you may have.

Midterm Exam (25%)

A comprehensive in-class exam based on readings, lectures, laboratory material and field trips (Date: Oct. 13, 2015).

Oxford Tract Final Project (30%) & Garden and Crop Plans (25%)

Students will work in groups of approximately 5 students. Group participation is required for these two projects, and no independent projects will be accepted.

Oxford Tract Final Project:

Students will develop and maintain an experimental plot at the Oxford Tract. For specifics see the 'Project Syllabus'. Additionally, students will be required to do 10 hours of volunteer work in a community garden. Community gardens where your group will volunteer will be assigned by the GSIs.

Garden and Crop Plan:

Students will develop a comprehensive 1-year urban garden design and crop plan.

Attendance and Participation (10%)

- Classroom attendance and participation, including field trips
- Participation in gardening projects, Oxford Tract research plots, and community gardens

Lab attendance and participation (10%)

- Lab attendance and participation

Accommodation of religious creed

In compliance with Education code, Section 92640(a), it is the official policy of the University of California at Berkeley to permit any student to undergo a test or examination, without penalty, at a time when that activity would not violate the student's religious creed, unless administering the examination at an alternative time would impose an undue hardship that could not reasonably have been avoided. Requests to

accommodate a student's religious creed by scheduling tests or examinations at alternative times should be submitted directly to the faculty member responsible for administering the examination by the second week of the semester. Reasonable common sense, judgment and the pursuit of mutual goodwill should result in the positive resolution of scheduling conflicts. The regular campus appeals process applies if a mutually satisfactory arrangement cannot be achieved.

Extracurricular activities and academic requirements

Student athletes, student musicians, those with out-of-town interviews, and other students with activities are responsible to notify the instructor(s) in writing by the second week of the semester of any potential conflict(s) and to recommend a solution, with the understanding that an earlier deadline or date of examination may be the most practicable solution. It is the student's responsibility to inform him/herself about material missed because of an absence, whether or not he/she has been formally excused.

Special accommodation

Please inform your if you need any special accommodations

Week 1 (9/1) Note: There will be lab on 8/28, see lab syllabus!

4:10 – 4:30 Welcome and Introductions

- Syllabus review
- Learning objectives for lecture and lab sections
- Our expectations of students

4:30 - 5:30 Importance and significance of Urban Agriculture

Speaker: Miguel Altieri

5:30 - 5:45 Break

5:45 - 6:45 A critical perspective on urban agriculture in the East Bay today

Speaker: Hank Herrera

6:45 - 7:00 Closing Comments

- Enrollment: Adds/drop and wait-list

Required Material

- Gordon Prain (2006) Chapter 10: Participatory Technology Development for Sustainable Intensification of Urban Agriculture. In *Cities Farming for the Future: Urban Agriculture for Green and Productive Cities*. RUAFA, IDRC and IIRR. Pages 275-313
- Montenegro, Maywa (2014) A Lighthouse for Urban Agriculture University, Community, and Redefining Expertise in the Food System. *Gastronomica: the journal of critical food studies*, vol.14, no.1, pp.9–22.
- H. Herrera, N. Khanna, and L. Davis, "Food Systems and Public Health: The Community Perspective," *J. Hunger Environ. Nutr.*, vol. 4, no. 3–4, pp. 430–445, 2009.

Suggested Material

- Bethaney Turner (2011) Embodied connections: sustainability, food systems and community gardens. *Local Environment* 16(6): 509-522.
- Sun Valley Farming: 10 Urban Agriculture Projects in Phoenix in <http://foodtank.com/news/2014/07/sun-valley-farming-10-urban-agriculture-projects-in-phoenix>
- World Urbanization Prospects the 2014 Revision highlights in: <http://esa.un.org/unpd/wup/Highlights/WUP2014-Highlights.pdf>

- Video: Green city growers

in

<https://www.youtube.com/watch?v=QCWjFZvkw4A>

Week 2 (9/8)

4:10 – 5:10 Central coast climate and crops.

Speaker: Linden Schneider

5:10 - 5:30 Break

5:30 - 7:00 Field Trip to Urban Adamah

Take the 49 Bus from Bancroft and Telegraph to Dwight and San Pablo. Walk South to 1050 Parker Street.

Required Material

- Carpenter and Rosenthal (2011) Part 1: Designing Your Urban Farm. In *The Essential Urban Farmer*. Pages 3-88
- Pam Pierce (2010) Appendix 1: "The Climate of Our Region". In *Golden Gate Gardening*. Pages 381-385

Week 3 (9/15)

4:10 - 5:00 Ecologically-Based Soil Fertility Management.

Speaker: Professor Celine Pallud

5:00-5:20 Break

5:20 - 7:00 Field Trip: Spiral Gardens

Take the 49 Bus from Bancroft and Telegraph to Dwight and Sacramento. Walk South to 2850 Sacramento Street.

Required Material:

- Carpenter and Rosenthal (2011) Chapter 8: Building Soil Fertility. In *The Essential Urban Farmer*. Pages 135-159.
- Beniston, J. and Lal, R. (2012) [Improving Soil Quality for Urban Agriculture in the North Central US](#). In *Carbon Sequestration in Urban Ecosystems*. Pages 279-313.
- [Magdoff and van Es \(2009\) parts 1, 2, and 3: Building Soils for Better Crops](#). Pages 3-152.

Week 4 (9/22)

4:10 - 5:30 Crop planning

Speaker: Miguel Altieri

5:30 - 7:00 Field trip to Gill Tract

Take the 52 bus from Bancroft and Telegraph. Get off at San Pablo Ave and Monroe St. Walk north to Gill Tract.

Required Material

- Pam Pierce (2010) Chapters 1-3: Year Around Bounty, On Learning to Garden, and What Can You Grow. In *Golden Gate Gardening*. Pages 1-27
- Organic Garden Inter cropping www.organicgardeninfo.com

Suggested Material

- [Vegetable Maturity Dates, Yields and Storage \(n.d\) North Dakota State University Extension Center.](#)
- [Link](#) Zandstra, B., Jardine, D. (1981) Yields in Michigan Vegetable Crops. MSU Ag Facts Extension Bulletin E-1565.

Week 5 (9/29)

4:10 - 5:10 Ecologically Based Pest Management.

Speaker: Leslie McGinnis

5:10- 5:30 Break

5:30 - 6:30 Contamination and soil remediation.

Speaker: Sarick Matzen

6:30-7:00 SOGA soil remediation and food production.

Speaker: Holly Whitaker

Required Material

- Wortman and Taylor Lovell 2013 Environmental challenges threatening the growth of urban agriculture in the US. *Journal of Environmental Quality*
- Carpenter and Rosenthal (2011) *The Essential Urban Farmer*. Chapter 13: Managing Weeds, Pest and Diseases. Pages 278-304.
- UC ANR. [Principles of IPM \(Links to an external site.\)](#).
- Miguel Altieri (1999) [The Ecological Role of Biodiversity in Agroecosystems](#). *Agriculture, Ecosystems and Environment* 74: 19–31.

Suggested Readings:

- [US EPA 2011 Brownfields and urban agriculture Interim guidelines for safe gardening practices.pdf](#)
- Cornell University: Biological Control a Guide to Natural Enemies in North America. In <http://www.biocontrol.entomology.cornell.edu/index.php> (Links to an external site.)
- Garden Pests: Guide to Common Insect Pests and How to Control them Naturally. In <http://www.gardensalive.com/article.asp?ai=592> (Links to an external site.)
- Wyman, J. Pellitteri, P. (n.d) Managing Insects in the Home Vegetable Garden. In <http://learningstore.uwex.edu/assets/pdfs/A2088.PDF> (Links to an external site.)

Week 6 (10/06)

4:10 -5:00 To Be Determined

Tentative:

Resilient Systems in Urban Agriculture

Speaker: Broc Dolman, Occidental Arts and Ecology Center

5:00 – 5:50 Urban Gardens and the Conservation of Native Pollinators.

Speaker: Professor Gordon Frankie, University of California, Berkeley

5:50-6:10 Break

6:10 - 7:00 Midterm Review

Required Material

- Gordon W. Frankie, Robbin W. Thorp, Jennifer Hernandez, Mark Rizzardi, Barbara Ertter, Jaime C. Pawelek, Sara L. Witt, Mary Schindler, Rollin Coville, Victoria A. Wojcik (2009) [Native bees are a rich natural resource in urban California gardens. \(Links to an external site.\)](#) *California Agriculture*.
- Rattan Lal (2012) [Urban Ecosystems and Climate Change \(Links to an external site.\)](#). In Carbon Sequestration in Urban Ecosystems. Pages 3-19.
- [We Can Reverse Climate Change by the Way We Grow Food](#)

Suggested Material

- MA Goddard et al. (2010) [Scaling up from gardens: biodiversity conservation in urban environments. Trends in Ecology & Evolution 25\(2\):90-98.](#)
- Fiedler et al. (2007) [Attracting Beneficial Insects with Native Flowering Plants. Extension Bulletin E-2973](#)

Week 7 (10/13)

4:10 - 5:40 MIDTERM EXAM

5:40 - 6:00 Break

6:00 - 7:00 Indicators of garden sustainability and resiliency (including water use/drought management)

Speaker: Miguel Altieri

Required Material

- M. a. Altieri, C. I. Nicholls, A. Henao, and M. a. Lana, "[Agroecology and the design of climate change-resilient farming systems](#)," *Agron. Sustain. Dev.*, 2015.
- C. I. Nicholls, M. a. Altieri, A. Dezanet, M. Lana, D. Feistauer, and M. Ouriques, "[A rapid, farmer-friendly agroecological method to estimate soil quality and crop health in vineyard systems](#)," *Biodynamics*, no. Outono, pp. 33–40, 2004.

Week 8 (10/20)

4:10 - 5:10 Urban Agriculture Research and Resources: Connecting UC Berkeley and the UC Cooperative Extension.

Speakers:

- Jennifer Sowerwine, (30 minutes)
- Ann Thrupp, Executive Director Berkeley Food Institute (30 minutes)

5:10 - 5:30 Break

5:30 - 6:30 Foraging for Food in Urban Areas

Speaker: Philip Stark

6:30 -7:00 Go Over Midterm

Required Material:

To Be Determined

Week 9 (10/27)

4:10 - 5:10 Urban Agriculture, Ethnobotany and Social Theory: Strengthening Interdisciplinary Methodology, Ethics and Praxis

Speaker: Francis Roberts-Gregory

5:30 - 7:00 Panel Discussion: Urban Food Access, Food Justice, Markets and Businesses.
Speakers:

- People's Grocery: Heather Smith
- Phat Beets Produce : Ana Galvis Martinez
- Urban Tilth: Tania Pulido
- Full Harvest Farm: Region Lewis

Required Material

- M. Montenegro de Wit, "[Are we losing diversity? Navigating ecological, political, and epistemic dimensions of agrobiodiversity conservation,](#)" *Agric. Human Values*, 2015.
- Brytanee Brown (2010) [West Oakland: A Community's Response to Food Injustice.](#) *The Berkeley Mcnair Research Journal*. University of California, Berkeley. Volume 17. Pages 1-14.

- Phat Beets [Organizational Statement on Gentrification](#)
- Food Justice definitions
- [Just Food](#)
- Miguel Altieri et al. (1999) The greening of the "barrios": Urban agriculture for food security in Cuba. *Agriculture and Human Values* 16: 131-140.
- Polly J. Ericksen et al (2009) Food security and global environmental change : Emerging challenges. *Environmental Science & Policy* 12(4):373-377
- [Building the Case for Racial Equity in the Food System](#)

Suggested Material

- Detroit Black Community Food Security Network. [A City of Detroit Policy on Food Security: Creating a Food Secure Detroit](#)

Week 10 (11/03)

4:10 - 5:40 Panel Discussion: City Food Policies and the Role of City and Regional Planning in Advancing Urban and Peri-urban Agriculture.

Speakers:

- Jesse Arreguin, Berkeley City Council member
- Esperanza Pallana, Oakland Food Policy Council and Oakland Food System Assessment
- Eli Zigas, Food Systems and Urban Agriculture Program Manager, San Francisco Planning and Urban Research Association(SPUR)

- Hannah Shulman, San Francisco Parks and Recreation Urban Agriculture Program Educator

5:40 - 6:00 Break

6:00 - 7:00 Landscape Architecture and Environmental Design

Speaker: Dr. Claire Napawan - Assistant Professor UC Davis

Required Material

- [Campbell, Marcia 2004. Building a Common Table: The Role for Planning in Community Food Systems. Journal of Planning, Education and Research, 23: 341.](#)

Suggested Material

- Nathan McClintock (2009) Executive Summary and Introduction. In [Cultivating the Commons: An Assessment of the Potential for Urban Agriculture on Oakland's Public Land \(Links to an external site.\)](#). City Slicker Farms / HOPE Collaborative / Food First, Oakland, CA. Pages 1-10.
- Serena Unger & Heather Wooten (2006) Executive Summary. In [A Food Systems Assessment for Oakland, CA : Towards a Sustainable Food Plan \(Links to an external site.\)](#). Oakland Mayor's Office of Sustainability/UCB. Pages 3-10.
- [Harvesting the City: Expanding the use of public land for urban agriculture in San Francisco. \(Links to an external site.\)](#)The Urbanist. Issue 513/May 2012.
- [Ordinance amending the Administrative Code, by adding Chapter 53A, creating local procedures to implement the Urban Agriculture Incentive Zones Act](#)
- [San Francisco Board of Supervisors President David Chiu, Assemblymember Phil Ting, and Supporters to Announce Incentive Zone Ordinance in San Francisco.](#)

Week 11 (11/10)

4:10 - 5:00 Keeping Animals and Bees in Urban Gardens

Speaker: Rudy Blume

5:00 - 5:20 Break

5:20 - 6:00 A Farming Success Story: From ESPM 117 to a Full-scale Organic Farm

Speaker: Anders Olson, Olson Farms

6:00 - 7:00 Urban Agriculture in the Context of the Global Food Crisis

Speaker: Eric Holt-Gimenez

Required Material:

- Carpenter and Rosenthal (2011) Chapter 14: Bees. In *The Essential Urban Farmer*. Pages 361-383
- Carpenter and Rosenthal (2011) Chapter 15: Chickens. In *The Essential Urban Farmer*. Pages 384-438

Week 12 (11/17)

Miguel Wrap-up

Student Presentations

Week 13 (11/24)

Student Presentations

Week 14 (12/01)

Student Presentations

Week 15 (12/08) (reading/review/recitation week) – No class