Title: "Food, Trees and Culture—Indigenous Sustainable Agroforestry Systems"
Syllabus and Class Schedule Fall 2016
ENVS 411
MW: 12:00-1:50 PM
Room 142 COL
Instructor: Jean B. Faye
Office hours: MW 2:00 – 3:00 PM @Columbia 246
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Course Description and Purpose:
The purpose of this course is to make students of environmental studies, food studies and other natural resources disciplines familiar with the major types of sustainable agroforestry systems used by people in both developed and developing countries, and to inform them about the ecological benefits they provide to humans, plants, animals, and the environment. It also considers the major critiques of the limits and potential romanticism of agroforestry. This course aims to educate students interested in the interaction of biophysical, social, political and economic issues underlying the adoption and application of world agroforestry systems. The lectures emphasize the basic components and concepts of cognate subjects of agroforestry and human-environment relations. Assigned readings add training in analyzing complex social and ecological systems and specific applications such as nut-tree crop combinations, forest farming, carbon farming, and notions of climate change mitigation and adaption.

This course can contribute to the Natural and Social Sciences components of the UO core requirements. It focuses on the interplay between the science of sustainable agriculture (or agroecology), forestry, environmental issues, and livestock husbandry with the cultural, social and economic aspects of communities to improve agricultural productivity while protecting the environment. Critical thinking is encouraged through class-discussions, assigned readings and writing of Rhetorical Précis, midterm examination questions, and a final research paper.

Course Learning Objectives:
. To be able to identify and explain the various social and ecological agroforestry concepts and techniques used worldwide.
. To understand the interactions between farming communities, cultural and agricultural systems, crops, livestock and trees for food, nutrients, water, and how to minimize competition between these critical resources.
. To analyze the connections between this course and other environmental courses.
. To develop the ability of students to think critically about environmental issues and practices associated with social agroforestry, domestically and globally.
. To enable each student to investigate in depth at least one agroforestry issue or practice and learn to find feasible solutions to current environmentally related problems.
. To identify different land-use systems, characterize economic and socio-cultural qualities.

Course Requirements:

Class discussions and debates on social, environmental benefits and misunderstandings about the concepts and classification of this progressively recognized land-use discipline.

Lectures, Readings, Videos, and Field trips: There will be approximately an hour-long lecture per day. The syllabus includes daily assigned readings. For each class session, 2 articles are designated, and copies of assigned readings or Internet links to readings are available on Canvas. Relevant videos will be shown in class, and students will be asked to write reports on *some* of them. Three (3) Field trips to farms applying some sort of agroforestry systems in the area will be organized.
Short reflections (of one article per week) using the **Rhetorical Précis** (RP) format are due at the beginning of class, once a week *only* via Canvas. Everyone is expected to read all assigned articles on the class list, and write a RP of the selected article, the one with an asterisk (*) for the week. RPs together with other assignments will only be accepted via Canvas. The RP is a formally structured abstract of the content and context of a written work. It treats articles as a form of active discourse between the author and the reader. Students are highly **discouraged to copy** the assigned articles' abstracts for submission. More description about the Précis format, including an example can be found in Canvas. Plus, there will be 4 quizzes (short answers questions from lectures/readings) during the term.

Field Trips: There are three required field trips. Students are expected to participate in all field trips and write a report on them. Students who cannot participate in those field trips must make alternative arrangements with the instructor by the first days of class.

Team Presentations: (10% of Course Grade) will be given on Week 10. Group formations, tips and rubric will be available to students later in the course (see Syllabus).

Attendance and Participation
Please come to class prepared to participate in highly interactive and organized round-table discussions, small group work, question and answer sessions. And if you need to be absent for health reasons and/or family emergencies, let me know beforehand. Roll will be taken.

Final Term Paper: A short **scholarly** paper (4-5 p) is required due at the final. Please see instructions for term paper rubric posted on Canvas.
Grades scale: Attendance and Class Participation: 10%
1 Midterm Exam (short questions examination) = 30%
Rhetorical Précis (10) and Quizzes (4) = 25%
Field trips, Videos reports and Oral Presentations = 20%
1 Research-based term paper including Proposals = 15%

Students Learning Outcomes: At the end of the term, I'd want students to understand, and be able to describe the subject matter fluently, learning it through critical analysis discussions, midterm, quizzes, group presentations, and final term paper.

. Identify the five major types of sustainable agroforestry concepts (i.e. silvopastures, alley-cropping, riparian buffers, forest farming, and windbreaks), critics, socioeconomic and environmental benefits associated with them.
. Consider the biological, socio-cultural and environmental factors when designing or evaluating sustainable agroforestry systems.
. Understand the complex human-environment interactions of food, trees, and culture

Studying for Examinations:
Examinations will be of the "short answers, essay" type. Successful answers to exam questions will include information drawn from lecture materials, assigned readings, field trips, videos, etc.

Methods of Instruction:
The class will be organized so that students are sitting in circles to allow open-discussion and active engagement among themselves and the instructor, to converse about the readings, lectures, short videos, and other class activities. This class offers a socioecological, and political arena for students to engage in collegial, animated, and learned discourses.

Academic Dishonesty and Student Conduct:
The course conforms to the University of Oregon Administrative Rules related to Student Conduct. Please respect your fellow students by not exhibiting disruptive behavior. More expectations for student conduct can be found at
https://uodos.uoregon.edu/StudentConductandCommunityStandards.aspx

Course Outline:
Syllabus and Assigned Readings: This course uses a set of assigned readings rather than a published textbook. The set of assigned articles was selected to give a broad view of community sustainable agroforestry systems, including both specific technology along with the social, cultural, economic, and biological context in which it operates.

Week 1: Defining Indigenous Sustainable Agroforestry, Land Use Issues, and Biomes Classification

26 Sept. ***Introduction to the course; Definition and History of Agroforestry***
Assigned Readings: Eichhorn, M.P., P.Paris, F.Herzog, L.D. Incoll, F.Liagre, K.Mantzazas, M.Mayus, G.Moreno, V.P. Papansastasis, D.J. Pilbeam, A. Pisanelli, and C. Dupraz. 2006. Silvoarable systems in Europe- past, present, and future prospects. *Agroforestry Systems*. 67:29-50.
Fifanou, V., Ousmane, C., Gauthier, B. & Brice, S. 2011. Traditional agroforestry systems and biodiversity conservation in Benin (West Africa). *Agroforestry Systems* **82**
Extra readings: Godsey- article from AFTA

28 Sept. ***Biomes: Classification and description; Major Land uses Issues; Indigenous Agroforestry: Tropical Forest Swidden Systems and Impacts.***

***Assigned Readings*: (*)** Miller, R.P, and P.K.R. Nair. 2006. Indigenous agroforestry systems in Amazonia: from prehistory to today. Agroforestry Sys. 66:151-164.
Steinberg, M. K. 1998. Political Ecology and Cultural Change: Impacts on Swidden-fallow Agroforestry Practices among the Mopan Maya in Southern Belize; *Professional Geographer*, 50(4): 407-417.

Week 2: Classification of Sustainable Agroforestry: Basic Concepts and Practices

3 Oct. Types of Agroforestry in America and Europe: Analysis of Alley Cropping, Sylvopastoral, and Agroforests (i.e. coffee), Windbreaks, Riparian buffers, etc.
***Assigned Readings*:** Gold, M. A., and H. E. Garrett. 2009. Agroforestry Nomenclature, Concepts, and Practices in H.E. "Gene" Garrett (2nd Ed.) North American Agroforestry: An Integrated Science and Practice
Olea, L., & Ayanz, S.M. 2006. The Spanish Dehesa. A traditional Mediterranean silvopastoral system linking production and nature conservation growing, Badajoz, Spain (Opening paper)
Extra Readings: Tyndall, J., and J. Colletti. 2007. Mitigating swine odor with strategically designed shelterbelt systems: a review. Agroforestry Sys. 69:45-65.
www.nrem.iastate.edu/research/veb/pub.**swine**sb.pdf
Sharrow, S.H. 2008. The 5 most common agroforestry practices. DoctorRange.com-The Natural Resources Knowledge Site. Http://www.DoctorRange.com

5 Oct*. Types of Indigenous Agroforestry Systems in Africa and Asia: Homegardens, Parklands, Intercropping, Rotational Tree Fallows, Agroforests (i.e. coffee), etc.*
***Assigned Readings*:** Kumar, B.M. 2006. Agroforestry: the new old paradigm for Asian food Security. *Journal of Tropical Agriculture* 44 (1-2) 1:14
(*) Soini, E. 2005. Changing livelihoods on the slopes of Mt. Kilimanjaro, Tanzania: Challenges and opportunities in the Chagga homegardens system. Agroforestry Sys. 64:157-167.

Week 3: Indigenous Sustainable Agroforestry and Environmental Services

10 Oct. ***Field Trip 1 @ Aprovecho, Cottage Grove***

12 Oct. ***Ecological Interactions and productivity: Nutrient Cycling; SOM; Effects of Trees on Soils: Biological Nitrogen Fixation***
***Assigned Readings*:** Rizvi, S. 1999. Allelopathic Interactions in Agroforestry Systems, http://dx.doi.org/10.1080/07352689991309487
(*) Jose, S., A.R. Gillespie, and S.G. Pallardy. 2004. Interspecific interactions in temperate agroforestry. Agroforestry Sys. 61:237-255.
Extra Readings: Sanchez, P.A., R.J. Buresh, and R.B. Leakey. 1997. Trees, soils, and food secuirty. Phil. Trans. R. Soc. London. B. 352:949-961

Week 4: Social and Cultural Basis of Indigenous Sustainable Agroforestry

17 Oct. ***Soil Fertility and Productivity: Soil Conservation and Biodiversity***

Assigned Readings: Schwab, N., Schickhoff, U., and E. Fischer. 2015. Transition to agroforestry significantly improves soil quality: A case study in the central mid-hills of Nepal, Agriculture, Ecosystems and Environment 205: 57-69
Rosenstock, T. et al. 2014. Agroforestry with N2-Fixing trees: sustainable development's friend or foe? http://dx.doi.org/10.1016/j.cosust.2013.09.001
Extra Reading: Bhagwat, S. et al. 2005. Agroforestry: a refuge for Tropical biodiversity?

19 Oct. ***Social-Cultural Aspects and Adoption of Agroforestry; Division of Labor and Tenure Systems***
Assigned Readings: **(*)** Rocheleau, D., and D. Edmunds. 1997. Women, Men and Trees: Gender, power and property in forest and agrarian landscapes. *World Development.* 25:1351-1371
Galvan, D. 2004. The State Must Be Our Master of Fire: How Peasants Craft Culturally Sustainable Development in Senegal, University of California Press, winner of the 2005 Best Book Award from the African Politics Conference Group

Week 5: Agroforestry and Cultural beliefs systems

24 Oct. ***Land Tenure and Society: Meanings and cultures, Class and Gender Issues***
Assigned Readings**:** Fairhead, J & M. Leach. 1997. Culturing trees: socialized knowledge in the political ecology of Kissia and Kuranko forest islands of Guinea, in Nature is Culture: Indigenous Knowledge and socio-cultural aspects of trees and forests in non-European cultures, Ed. by Klaus Seeland
(*) Kiptot, E. Franzel, S., and Degrande, A. 2014. Gender, agroforestry and food security in Africa, Current Opinion in Environmental Sustainability 6: 104-109
http://dx.doi.org/10.1016/j.cosust.2013.10.019
Extra Readings: Rahman, S.A. 2006. Gender analysis of labour contribution and productivity of popular cropping systems in Kaduna State of Northern Nigeria. *Tropical Agr. Res. Ext*. 9:53-64.
dl.nsf.ac.lk/bitstream/handle/1/8189/TARE-9-53.pdf?sequence=2

26 Oct. Midterm Exam ***(No assigned readings)***

Week 6: ***Food Security and Sustainable Agroforestry***

31 Oct. Field Trip 2 @ PROUT, Eugene

2 Nov. ***Tree Crops: Food Security and Livelihood Resilience***
Assigned Readings**:** (*) Assah, E. et al. 2011. Trees, agroforestry and multifunctional agriculture in Cameroun; http://www.tandfonline.com/loi/tags20
Extra Readings: Faye, M., Weber, J., Mounkoro, B. & Dakouo, J-M. 2011. Contribution of parkland trees to farmers' livelihoods: a case study from Mali. *Development in Practice* **20**

Week 7: Food and Agroforestry Systems: Agrobiodiversity

7 Nov: ***Food and Agroforestry Systems: Agrobiodiversity***
***Assigned Readings*:** MacFall, J., Lelekacs, J., LeVasseur, T., Moore, S. & Walker, J. 2015. Toward resilient food systems through increased agricultural diversity and local sourcing in the Carolinas. *J. Environ. Stud. Sci.* doi:10.1007/s13412-015-03211

9 Nov. Field Trip 3 @Youth Farm, Springfield
Assigned readings: (*) Frank, P. 2012. Will Trees Alleviate Hunger in Africa? *BioScience* 62

Week 8: Sustainable Agroforestry and Climate Change Impacts: Carbon Farming

14 Nov. ***Economic Basis for Sustainable Agroforestry: Cost & Benefit Analysis***
***Assigned Readings*:** Gram, S., L.P. Kvist, and A. Caseres. 2001. The economic importance of products extracted from Amazon flood plain forests. *Ambio* 30:365-368
Pilz, D., and R. Molina. 2002. Commercial harvests of edible mushrooms from forests of the Pacific Northwest United States: Issues, management, and monitoring for sustainability. *Forest Ecol. Manage*. 155:3-16.
Extra Readings: Montagnini, F., and R.O. Mendelson. 1997. Managing forest fallows: improving the economics of Swidden agriculture. *Ambio* 26: 118-123.

16 Nov. ***Sustainable Agroforestry and Climate Change in the Americas and Europe***
Assigned Readings: (*) Sharrow, S.H., and S. Ismail. 2004. Carbon and nitrogen storage in agroforests, tree plantations, and pastures in western Oregon USA. *Agroforestry Sys*. 60:123-130.10
Brenda, Lin. 2007. Agroforestry management as an adaptive strategy against potential microclimate extremes in coffee agriculture, *Agricultural and Forest Meteorology* 144, 85-94

Week 9: Future of Global Sustainable Agroforestry Systems and Scaling-Up

21 Nov. ***Indigenous Agroforestry and Climate Change in Africa and Asia: Carbon Sequestration***
***Assigned Readings*:** Lu, S., Meng, P., Zhang, J., Yin, C. & Sun, S. 2015. Changes in soil organic carbon and total nitrogen in croplands converted to walnut-based agroforestry systems and orchards in southeastern Loess Plateau of China. *Environ. Monit. Assess.*18
Takimoto, A., Nair, V. & Nair, R. 2008. Contribution of trees to soil carbon sequestration under agroforestry systems in the West African Sahel, *Agroforestry Systems* 76,
Extra Readings: Nguyen, Q., Hoang, M., Öborn, I. & Noordwijk, M. 2012. Multipurpose agroforestry as a climate change resiliency option for farmers: an example of local adaptation in Vietnam. *Climatic Change* 117, 241-257

23 Nov. ***Future of Sustainable Agroforestry Systems: Constraints to Sustainable Agroforestry Adoption***
***Assigned Readings*:** (*) Jose, S., Gold, M., H.E. Garrett. 2012. The Future of Temperate Agroforestry in the United States, in P. K. Nair and D. Garrity (*eds*.), Agroforestry – The Future of Global Land Use, Advances in Agroforestry 9, Springer

Boeckmann, S. and Pia Iolster. 2007. Agroforestry in Africa: Exploring the Lack of Widespread Implementation and the Potential for Expansion.

Week 10: Group Presentations
28 Nov. ***First Session***

30 Nov. ***Second Session***
Assigned readings: (*) Oluyede, C. A. and Frank, Place. 2012. Policy Support for Large-Scale Adoption of Agroforestry Practices: Experience from Africa and Asia, in P. K. Nair and D. Garrity (*eds*.), Agroforestry – The Future of Global Land Use, Advances in Agroforestry 9, Springer

FINAL Research-based Paper due

Some interesting web sites:
Oregon Small Farms Site - http://smallfarms.oregonstate.edu/
UO Urban Farm Site - https://blogs.uoregon.edu/urbanfarm/
World Agroforestry Center (formerly ICRAF) - *http://www.worldagroforestry.org/*
USDA National Agroforestry Center - *http://www.unl.edu/nac*
Association for Temperate Agroforestry - http://www.aftaweb.org/
The Overstory- Agroforestry.net - *http://agroforestry.net/*
USDA Natural Resources Conservation Service
http://www.nrcs.usda.gov/technical/forestry.html
California Hardwood Page - *http://danr.ucop.edu/ihrmp/*
Glossary of Agroforestry Terms - *http://www.bugwood.org/glossary/*
University of Missouri Agroforestry Center - *http://www.centerforagroforestry.org*/
National Sustainable Information Service -
*http://attra.ncat.org/attrapub/agroforestry.html*6

Dates	Lecture Topic	Readings	Assignments	Activities
Week 1: **9/26** **9/28**	Course Intro., Def. & History of AFS Biomes Classification & Description; Major Land Uses; Ind. AFS	Eichhorn et al, 2006; Fifanou et al., 2011 * Miller & Nair, 2006; Steinberg, 1998	 Rhetorical Précis # 1 due	Writing RP; Prezi; Concept Map; Think-Pair(s)-Share Minute Paper; Response Prompts; Op'ed Questions
Week 2: **10/3** **10/5**	Classification of AFS; Basic Concepts and Practices: America and Europe Types of Agroforestry Systems in Africa and Asia	Gold et al., 2009; Olea et al., 2006 Kumar, 2006; * Soini, 2005	Quiz #1 Rhetorical Précis #2 due	Collaborative Reading; Discussion Debate: 3-2-1; Short videos (Dehesa, etc.) Minute Paper; Plus/Delta; Debrief Teams
Week 3: **10/10** **10/12**	Field Trip 1 Ecological Interactions and Productivity	No readings Rizvi, 1999; (*) Jose et al., 2004	 Rhetorical Précis #3 due	Field Trip #1: Aprovecho Discussion Debate: 3-2-1; Item Clarification
Week 4: **10/17** **10/19**	Soil fertility and Productivity in AFS Social and Cultural Basis of ISAFS	Schwab et al., 2015; Rosenstock et al., 2014 * Rocheleau, 1997; Galvan, 2004	Field trip report #1 due Rhetorical Précis # 4 due	Guest Lect.: Dr. Galen Guess Lect.: Dr. Galvan
Week 5: **10/24** **10/26**	Land Tenure, Gender and Cultural Beliefs Systems **Midterm Exam**	Fairhead & Leach, 1997; * Kiptot et al., 2014 No assigned readings	Rhetorical Précis #5 due	Discussion Debate: 3-2-1; Videos and/or Team Presentations meet; tips and rubric

Week 6: **10/31** **11/2**	Field Trip 2 Food Security & AFS: Tree Crops	Young, A. 1988 (*) Assah et al., 2011	 Quiz # 2 Rhetorical Précis #6 due	Field Trip #2: PROUT Collaborative Reading, Video (Evergreen)
Week 7: **11/7** **11/9**	Food & Tree Crops Diversity Field Trip 3	MacFall et al., 2015 * Frank, P. 2012	Field trip report #2 due Rhetorical Précis #7 due	Debrief Teams; Response Prompts; Lect.: Dr. Wooten Field Trip #3: Youth Farm
Week 8: **11/14** **11/16**	Economic Basis for AFS: Cost-Benefit-Analysis Agroforestry & Climate Change: Americas & Europe	Gram et al., 2001; Pilz & Molina, 2002 (*) Sharrow, 2004; Brenda, 2007	Proposals due; Quiz # 3 Rhetorical Précis #8 due	Discussion: Believing & Doubting" D. Debate: 3-2-1; Guest lect.: Gavin or Bart
Week 9: **11/21** **11/23**	Agroforestry & Climate Change: Africa & Asia Future of Global Sustainable AFS and Scaling-Up	Lu et al. 2015; Takimoto et al. 2008 (*) Jose et al., 2012; Boeckman, 2007	Quiz #4 Rhetorical Précis #9 due	Academic Controversy; Believing & Doubting"; Video (Savory) Open-ended questions; Top Ten List"
Week 10: **11/28** **11/30**	Group Presentations: 1st Session Group Presentations: 2nd Session	 (*) Oluyede, 2012	 Rhetorical Précis #10 due	Team Presentations Team Presentations
12/6	**Final Research Paper Due**			