THE SCHOOL FOR FIELD STUDIES

Food Systems Resource Management
SFS 3753

Syllabus
4 credits

The School for Field Studies (SFS)
Center for Sustainable Food Systems
Greve, Chianti, Italy

This syllabus may develop or change over time based on local conditions, learning opportunities, and faculty expertise. Course content may vary from semester to semester.

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COURSE CONTENT SUBJECT TO CHANGE

Please note that this is a copy of a recent syllabus. A final syllabus will be provided to students on the first day of academic programming.

SFS programs are different from other travel or study abroad programs. Each iteration of a program is unique and often cannot be implemented exactly as planned for a variety of reasons. There are factors which, although monitored closely, are beyond our control. For example:

- Changes in access to or expiration or change in terms of permits to the highly regulated and sensitive environments in which we work;
- Changes in social/political conditions or tenuous weather situations/natural disasters may require changes to sites or plans, often with little notice;
- Some aspects of programs depend on the current faculty team as well as the goodwill and generosity of individuals, communities, and institutions which lend support.

Please be advised that these or other variables may require changes before or during the program. Part of the SFS experience is adapting to changing conditions and overcoming the obstacles that may present. In other words, this is a field program, and the field can change.

Course Overview

The dominant systems of producing food not only failed to ensure safe and abundant food production for all people, but it was launched under the assumptions that abundant water and cheap energy to fuel modern agriculture would always be available and that climate would be stable and not change. Furthermore, today there are about one billion hungry people in the planet, but hunger is caused by poverty (1/3 of the planet's population makes less than $2 a day) and inequality (lack of access to land, seeds, etc.), not scarcity due to lack of production.

There is no doubt that humanity needs an alternative agricultural development paradigm, one that encourages more ecologically, biodiverse, resilient, sustainable and socially just forms of agriculture. The aim of this course is to provide students with tools to analyze —in an integrated manner—the transition towards sustainable agriculture. This course will be interdisciplinary, integrating different disciplines such as economics, geography, ecology, sociology, and the history of agricultural systems.

Starting from the concept of Ecological Economics and the critic to the "Growth Culture", the study of ecological functions in farming, and the marriage of agriculture and ecology will bring us to the concept of "Agroecology". More specifically, "Agroecology is defined as the application of ecological concepts and principles to the design and management of sustainable agroecosystems" (Gliessman, 1998).

To account for an efficient and sustainable use of natural resources such as soil, water, forests, energy, during this course the students will be introduced to use of GIS (Geographical Information Systems). The students will learn the use of GIS both for the analysis and processing of existing georeferenced data and for the georeferencing of new data. The course addresses the GIS theme in a practical way and allows the student to learn the use of modern GIS software. The lessons will take place in front of a personal computer and the goals are practical, in a typical "learning by using" approach.

Through an experiential learning approach, students can share the traditional localized knowledge during dedicated fieldtrips. In a typical experiential learning process, students will learn about the practices and structures that affect the health and wealth of those in agriculture and food systems. During fieldtrips the students will share innovative practices that are fostering the transition towards a sustainable agriculture. Italy is a leading country in the process of transition towards a sustainable agriculture, and many different on-going processes and issues will be presented in the class. They include: the historical roots of regional diversification in Tuscany, organic farming and biodynamic farming in Tuscany, food sovereignty and food security, the re-localization of food systems, the role of consumers in the transition towards sustainability, labor conditions in Italian agriculture and the role of school meals.

Learning Objectives

By the end of the course students will be able to:

- analyze the complexity of food production systems in relation to the resources used in the production process
- use GIS (Geographical Information Systems) tools
- assess the processes of change undergoing our agriculture and food systems
- point out what is hindering and/or fostering the transition towards a sustainable food system
- critically assess the external costs of conventional farming and be able to propose innovative practices and behaviors for the future of our planet.

Assessment

The evaluation breakdown for the course is as follows:

Assessment Item	Value (%)
Participation	15
Family Agriculture and Food History	10
FEX 1: Monitoring Agroecological Practices	20
FEX 2: Assessing Soil Quality	20
Student led discussion: Can food systems be sustainable?	10
Final Exam	25
TOTAL	**100**

Participation (15%)

Everybody should be prepared for each academic session. This implies reading the materials for each session with enough detail to be able to ask relevant questions; and to participate in analytical discussions about the key issues. Active participation during classes, discussions, assignments, and hikes is expected. Participation will be assessed against active listening, engagement with course material including required readings, asking and answering questions during classes, and the frequency, consistency and originality of contributions in class discussions.

Family Agriculture and Food History (10%)

In a 1000-1200 word paper, explore your family's food and agricultural roots by interviewing family members and collecting information on attitudes and experiences related to food and food production. You may choose one branch of the family to explore, or compare branches. If you are unable to interview family members, you may write about your own personal food and agricultural attitudes and experiences. Begin by telling the story of at least 3 generations before you, if possible. You do not have to uncover great chefs or innovative farmers in your family; this paper is an exercise in exploring historical connections and is an opportunity to learn more about your heritage from a perspective you might not have considered. Questions to begin with: Where did your relatives live and work? Did they migrate from elsewhere? Did their parents? Did they own land? How did they acquire it? Where did they get their food? What role did food play in their lives? Did their food habits change? How? How did their lives relate to the natural world? What was their cultural and/or religious experience? What kind of work did they do? Describe who they worked for and what they produced. Now interpret that history: what do you think their relationship was with the natural world? With food production? How has this history had an impact on the culture in which you grew up? If you are not writing directly about your own family, describe other influences on your own attitudes and experiences.

FEX 1: Monitoring Agroecological Practices (20%)

This FEX will allow students to build on what they have learned about agroecological practices in organic farms. Several guided visits in Tuscany will offer the opportunity to practice in the field students' ability to identify what are the practices used by farmers in order to match with agroecology, which is to say respect the ecological system while producing crops and other values. The class will be divided into groups of 3 to 4. Each group will work in an inventory of agroecological practices in the fields made of text and photos. Student's work will be assessed based on the development of sound hypothesis, identification of practices and feasibility of collection, and the written report.

FEX 2: Assessing Soil Quality (20%)

This FEX will allow students to experience the assessment of soil quality. The maintenance of good soil quality is vital for the environmental and economic sustainability of annual cropping. A decline in soil quality has a marked impact on plant growth and yield, grain quality, production costs and the increased risk of soil erosion. Therefore, it can have significant consequences on society and the environment. Traditionally, earthworms are considered one of the most frequently used bioindicator to evaluate the sustainability of soil use. We will use the QBS-e (Soil Biological Quality Index based on earthworms) in order to improve the student capability to monitor the soil's biological fertility in the rural environment. The class will be divided into groups of 3 to 4. The students will apply the QBS-e protocol in several different field sites and create a report on soil quality across sites.

Student led discussion: Can food systems be sustainable? (10%)

Food production is responsible for producing at least one-third of greenhouse gas. The world population is increasing and about 10% of it is undernourished, while at least one-third of food production is wasted. However, can food production be sustainable? What is the tradeoff between resources, conservation, and food production worldwide? Working in groups, students will gather information, examine literature, and prepare a 15-minute presentation on the future challenges of our food production.

Final Exam (25%)

The final exam will consist in a written test that will require students to use their knowledge based on material covered in lectures, readings, field experiences and related discussions. The assignment will require students to think critically about issues in food system and use their skills to propose solutions and policies.

Grading Scheme

A	95.00 - 100.00%	B+	86.00 - 89.99%	C+	76.00 - 79.99%	D	60.00 - 69.99%
A-	90.00 - 94.99%	B	83.00 - 85.99%	C	73.00 - 75.99%	F	0.00 - 59.99%
		B-	80.00 - 82.99%	C-	70.00 - 72.99%		

General Reminders

Readings – You are expected to have read all the assigned research articles prior to each class. All readings will be available as PDFs on the Student Drive. Readings might be updated or changed during the course of the semester. Not all material will be explicitly taught during lectures, material not covered in lecture will NOT be on exams. Supplemental readings are not mandatory but are recommended to expand your knowledge. Additional readings could be assigned.

Honor Code/Plagiarism – SFS places high expectations on their students and we hold students accountable for their behaviors. SFS students are held to the honor code below. SFS has a zero-tolerance policy towards student cheating, plagiarism, data falsification, and any other form of dishonest academic and/or research practice or behavior. Using the ideas or material of others without giving due credit is

cheating and will not be tolerated. Any SFS student found to have engaged in or facilitated academic and/or research dishonesty will receive no credit (0%) for that activity.

> *"SFS does not tolerate cheating or plagiarism in any form. While participating in an SFS program, students are expected to refrain from cheating, plagiarism and any other behavior which would result in a student receiving credit for work which they did not accomplish on their own. Students are expected to report any instance of cheating or plagiarism by others."*

Deadlines – Deadlines for written and oral assignments are instated to promote equity among students and to allow faculty ample time to review and return assignments before others are due. As such, deadlines are firm; extensions will only be considered under extreme circumstances. Late assignments will incur a penalty of 10% of your grade for each day you are late. After two days past the deadline, assignments will no longer be accepted. Assignments will be handed back to students after a one-week grading period. Grade corrections for any assessment item should be requested in writing at least 24 hours after assignments are returned. No corrections will be considered afterwards.

Content Statement – Every student comes to SFS with unique life experiences, which contribute to the way various information is processed. Some of the content in this course may be intellectually or emotionally challenging but has been intentionally selected to achieve certain learning goals and/or showcase the complexity of many modern issues. If you anticipate a challenge engaging with a certain topic or find that you are struggling with certain discussions, we encourage you to talk about it with faculty, friends, family, the HWM, or access available mental health resources.

Participation – Since we offer a program that is likely more intensive than you might be used to at your home institution, missing even one lecture can have a proportionally greater effect on your final grade simply because there is little room to make up for lost time. Participation in all components of the course is mandatory, it is important that you are prompt for all activities, bring the necessary equipment for field exercises and class activities, and simply get involved.

Course Content

Type: D: Discussion, **FL:** Field Lecture, **GL:** Guest Lecture, **L**: Lecture, **O**: Orientation, **FEX**: Field Exercise
*Readings in **Bold** are required.

No	*Title and outline*	*Type*	*Time (hrs)*	*Required Readings*
1	**Introduction to the course**	O	1.0	
2	**Ecology and the economy: a critical relationship** The emergence of Ecological Economics. The critical approach to "Business as Usual Economics". External costs, the ecological system, uneconomic growth, planetary boundaries.	L	2.0	**Daly and Farley (2004).**
3	**The third food regime and the transition towards a sustainable fourth food regime** The concept of Agroecology will be introduced. We will bring ecology and human/animal welfare into agriculture.	L; D	2.0	**Altieri et al. (2012).**

No	Title and outline	Type	Time (hrs)	Required Readings
4	**The drivers of change: Davids or Goliaths?** Who is really driving the process of change? Small family farms or big food producers?	L; D	2.0	**Hockerts and Wüstenhagen (2010).**
5	**Vineyard management and soil biodiversity** Agricultural fields such as vineyards cannot be considered just as production platforms - they are alive ecosystems to be preserved.	L	2.0	**Giffard et al. (2022).**
6	**Agroecology in practice** The role of soil	FL	3.0	
7	**Family Agriculture and Food History presentations and discussion**	D	2.0	
8	**Sustainability in rice production** Organic farming in practices	FL	2.0	Nawaz et al. (2022).
9	**Sustainability of milk production** Organic farming in practices	FL	2.0	Cross (2015).
10	**Agroecology in practice with SPEVIS** The case of wine and olive oil production	FL	2.0	
11	**FEX 1: Monitoring Agroecological Practices**	FEX	4.0	
12	**Introduction to GIS** Shape files, data management, and map definition	L	2.0	**See the note in the Reading List**
13	**Multiple uses of GIS** Raster files and calculator	L	2.0	
14	**The detection and storage of GIS spatial points**	L	2.0	
15	**Short Food Supply Chain** Pros and cons of a direct relationship with consumers on and off farm	FL	4.0	Galli and Brunori (2013).
16	**Ancient grains in the Lipari Islands.** The growth of old grains worldwide: pros and cons	FL; GL	2.0	**Sereni et al. (2017).**
17	**The role of Bioindicators.** How to monitor the effects of agro-ecological practices on biodiversity**?**	FL	2.0	**Fusaro et al. (2018).**
18	**FEX2: Assessing soil quality**	FEX	4.0	
19	**The role of bio-districts: the case of Casentino** The upscaling of organic farming requires the development of new networks and policies. Bio-districts are an emerging entity filling part of the gap.	FL	2.0	**Passaro and Randelli (2022).**
20	**Student led discussion** Can food production be sustainable?	D	2.0	
21	**Final exam review session**	L	2.0	
22	**Course wrap up discussion**	D	2.0	
	Total		**50**	
	UMN Instructional Hours*		**60**	

**UMN defines* *an instructional hour as a 50-minute block. SFS syllabi are written in full 60-minute hours for programming purposes. Therefore 50 full hours = 60 UMN instructional hours (for four credit courses) and 25 full hours = 30 UMN instructional hours (for two credit courses).*

Reading List

*Readings in **Bold** are required

Note on GIS: For the GIS component, the course does not support textbooks. For those who want to prepare for learning in the use of the GIS software identified by the professor (QuantumGIS well known as QGIS), it is advised that the download of the user manual can be found free of charge at the following address: https://qgis.org/en/docs/

1. **Brunori G., Rossi A., Guidi F. (2012).** On the New Social Relations around and beyond Food. Analysing Consumers' Role and Action in Gruppi di Acquisto Solidale (Solidarity Purchasing Groups), Sociologia Ruralis, Vol 52, n.1

2. **Calavita K. (2007).** The Immigration Conundrum in Italy and Spain, Insights on Law & Society 7.2, pp. 7-10

3. Cillo R. and Toffanin T. (2014). Immigrant workers in Italian agriculture - A Mapping, Corporate Social Responsibility to Prevent Human Trafficking

4. Cross J.A. (2015). Change and Sustainability Issues in America's Dairyland, Focus on Geography, 58(4), pp. 173–183

5. **Dalle Vaglie M., Martellozzo F., Randelli F. (2023).** The measure of soil salinization. The case of Italy, under review

6. **Daly H. and Farley J. (2004).** Ecological Economics. Principles and Applications, Island Press

7. Forno, F., and Ceccarini, L. (2006). From the Street to the Shops: The Rise of New Forms of Political Actions in Italy. South European Society and Politics, 11, 2, 197-222.

8. **Galli F., Brunori G., Di Iacovo F., Innocenti S. (2014).** Co-Producing Sustainability: Involving Parents and Civil Society in the Governance of School Meal Services. A Case Study from Pisa, Italy. Sustainability, 6, 1643-1666

9. Graziano, P. R., and Forno, F. (2012). Political consumerism and new forms of political participation: The Gruppi di Acquisto Solidale in Italy. The Annals of the American Academy of Political and Social Science, 644 (1), pp. 121-133

10. **Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T., & Aylmer, C. (2013).** Beyond GDP: Measuring and achieving global genuine progress. Ecological Economics, 93, 57-68.

11. **Miguel A. Altieri and C.I. Nicholls (2012).** Agroecology Scaling Up for Food Sovereignty and Resiliency, E. Lichtfouse (ed.), Sustainable Agriculture Reviews, pp. 1-29

12. Morgan, K., Sonnino, R. (2007). Empowering consumers: the creative procurement of school meals in Italy and the UK International Journal of Consumer Studies. 31. 19–25.

13. Nawaz A., Ur Rehman A., Rehman A., Ahmad S., Siddique K., Farooq M. (2022). Increasing sustainability for rice production systems, Journal of Cereal Science, Volume 103, 103400

14. **Passaro A. and Randelli F. (2022).** Spaces of sustainable transformation at territorial level: an analysis of biodistricts and their role for agroecological transitions, Agroecology and Sustainable Food Systems, Volume 46, Issue 8

15. **Perrotta D. (2015).** Agricultural Day Laborers in Southern Italy: Forms of Mobility and Resistance, The South Atlantic Quarterly 114:1, pp. 145-203

16. **Randelli, F., (2013).** The role of consumers in the transition towards sustainability. The case of food supply, International Journal of Food and Agricultural Economics ISSN 2147-8988, E-ISSN: 2149-3766, Vol. 3 No. 4, 2015, pp. 15-26

17. Vanino S., Di Bene C., Piccini C., Fila G., Pennelli G., Zornoza R., Sanchez-Navarro V., Fuentes J., Hüppi R., Six J., Farina R. (2022). A comprehensive assessment of diversified cropping systems on agro-environmental sustainability in three Mediterranean long-term field experiments, European Journal of Agronomy 140 126598