



## ENV-SOC-FSST 330 Sustainable Food Production in Italy

Course Syllabus  
Spring Semester 2023

**Instructor:** Domenico Aiello, Ph.D.

**Credits:** 3

**Contact Hours:** 45

**Prerequisites:** none

**Class Meeting Days & Time:** Monday and Wednesday; 02:15 PM – 03:45 PM

**Office Hours:** by appointment after a class or via Zoom (see Moodle site)

**Email:**

**Course Type:** Standard Course

**Course Fee:** USD\$135

### Course Description

There are more than seven billion humans on the planet, and it is estimated that by 2050 the world's population will reach 9.1 billion (34 % higher than today), each of whom need to eat every day: ever-higher food production is contributing to faster use of non-renewable fossil fuels and environmental degradation. Food production will need to increase by 70% to feed the larger and most likely more urban population.

What modes of food production and consumption may be viable, sustainable responses to this problem? What are some alternative models of food production? How are people responding to increasing inequalities relating to food availability?

This course focuses on the radical increase in food production over the last decades and the ecological and social problems it has created, as well as on some possible solutions: the organic movement, Slow Food, and the shift towards local food. We will cast a critical eye on these movements and analyze their ability to change the trajectory of the global food production system, which is rapidly heading for collapse.

### Learning Outcomes and Assessment Measures

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

1. *define* principles, frameworks, and indices (from various disciplines) for measuring progress toward a sustainable society;
2. *recall* the key characteristics of human and natural systems as they pertain to sustainability and analyze different models of transitions towards a sustainable food system;
3. *evaluate* existing research on sustainability from a variety of disciplines;
4. *provide* different political, environmental and social interventions for more sustainable food production in Italy and in the USA without negatively affecting environmental justice;
5. *integrate* experiential learning activities with classroom knowledge to practice systematic, public-facing, and ethical scholarship using twenty-first-century research and communication tools.

### Course Materials

#### Readings

A course reader, including all the indicated readings, will be available. The course's Moodle site is the primary location for readings and assignments.

### Assessment

Attendance	10%
Weekly Moodle Quizzes	12,5%

Midterm Exam	20%
Course Journal	20%
Presentation	15%
Final Exam	22%
Office Hours	0,5%

### Grading

Students are reminded that it is their responsibility to note the dates of exams and other assignments. No alternative exam dates will be offered and professors are not required to give partial credit for any late work (they do so at their discretion: the Institute's default policy is no extensions and a zero for any work turned in late). Students who book travel when they have an exam or other assessment will have to change their plans or accept a zero. Letter grades for student work are based on the following percentage scale:

Letter Grade Range	Numerical Score Equivalent	Student Performance
A	93% - 100%	Exceptional
A-	90% - 92%	Excellent
B+	87% - 89%	Superior
B	83% - 86%	
B-	80% - 82%	
C+	77% - 79%	Satisfactory
C	73% - 76%	
C-	70% - 72%	
D+	67% - 69%	Low Pass
D	63% - 66%	
D-	60% - 62%	
F	59% or less	Fail (no credit)

**Please note:** decimal numerals between 1-4 are rounded down while 5-9 are rounded up: e.g., expect 89.4 to be 89.0 while 89.5 to round up to 90.

### Course Requirements

Grades are based on a combination of participation, in-class assessments, service learning, and exams.

<i>Attendance</i> (10 %)	Attendance is an important part of this course. You have two “sick days,” per Institute policy. As long as you are at all the other meetings, you will receive the full 10 % for this part of your grade. There are no make-ups offered for attendance.
<i>Moodle Quizzes</i> (12,5 %)	Students will be assigned two short quizzes every week, each of which will be due before class time and will not be reopened. The quiz will be on Moodle and it is not timed. Students can take the quiz as many times as they like, with the recorded grade being the highest grade they receive. There will be a combination of <i>technical</i> , <i>methodological</i> , and <i>content questions</i> . The content questions will help students zoom in on the most important ideas of the readings. The technical questions will help students learn the class's policies and administrative procedures. The methodological questions will test on skills that will pop up every week, like finding an author's argument and assessing sources. See the full prompt on <a href="#">Moodle</a> for more information.
<i>Mid-Term Exam</i> (20 %)	An exam covering all topics presented in the first half of the course. It will consist of short answers. The exam will take approximately 90 minutes to complete and is closed book/closed notes. No alternative exam dates or times will be offered. See the full prompt on <i>Moodle</i> for more information.
<i>Course Journal</i> (20 %)	Students will be provided with a notebook at the start of the semester, which they will use as a personal space through which to reflect on course material and ideas. In-class assignments (e.g. summaries of assigned readings, analyses of primary sources, mental

maps, reflections, predictive exercises) will be regularly scheduled and graded twice throughout the semester, i.e. before the mid-semester break (Week 7) and at the end of the course (Week 12). Each of these checks is worth 10 % of your grade, for a total of 20%. See the full prompt on [Moodle](#) for more information.

*Presentation (15 %)*

A 15-20 minute presentation in pairs on best practices in food and sustainability. E.g. I expect: 1) a brief activity/questions to involve the class 2) a brief theoretical introduction 3) a description of your case-study 4) an evaluation of its achievements 5) counter arguments 6) a clear conclusion 7) questions for discussion.

*Final Exam (22 %)*

Production of an essay that will be developed during the second part of the semester on a topic of student's choice of those covered in class (including that of the first half-semester).

The essay is nothing more than an in-depth study of one of the topics covered.

The essay consists of the analysis and elaboration of a series of sources and a bibliography. See the full prompt on [Moodle](#) for more information.

*Office Hours (0,5 %)*

Getting to know your professor makes you more comfortable with that person and therefore more likely to ask for help. It also might help for you to ask questions about the various assignments or discuss a paper idea. In this course, you get 2,5 % of your grade for coming one time before Week 9 to office hours. See the full prompt on [Moodle](#) for more information.

### **Extension & Submitting Late Work**

Work submitted after the deadline will receive a grade of zero, not partial credit. Each student is allowed one extension of 24 hours over the entire semester. This can be used for any assignment but the final project. Students need to email the instructor before the deadline and inform the instructor of their use of the extension. Any work submitted after the 24-hour extension will be marked zero. As for all policies, exceptions can be made by the Director for students with special accommodations or in case of medical emergencies, etc.

### **Attendance & Lateness Policy**

Class attendance (in person or through live connection) is mandatory. All students are allowed 2 “sick days” (i.e. unexcused absences), which do not need to be justified. It is the student's responsibility to keep them in case of real necessity. i.e., sickness or any other unforeseen inconvenience that may prevent students from being in class. More than 2 absences will affect your final grade by 2% per absence. Excessive unexcused absences (8 or more) may result in a failing grade or disciplinary action. Three late arrivals to or early departures from class will count as an unexcused absence. It is the student's responsibility to be aware of the number of absences or late arrivals for each course, and to ask the instructor when in doubt.

If students miss class, they are responsible for obtaining class notes from other students and/or for meeting the professor during office hours. Any work missed in class because of an excused absence may be made up within one week of the return to the class. Any work missed that was a quiz or other test must be made up outside of class time and will, in the interest of intellectual honesty, be a slightly different test than the one given in class.

Presence during mandatory field trips is especially important. Missing a mandatory field trip for a course, unless for a very serious reason that is communicated to Umbra staff in a timely manner, will be considered the equivalent of two unexcused absences. As such, absence from the co-curricular field trip will lower students' final grade in that course by 4% (the equivalent of two unexcused absences).

Additional absences relating to illness may be approved by the Director but only if a medical certification is provided. Except in the case of medical emergencies, absences are not accepted when tests are scheduled; tests cannot be made up. Furthermore, scheduled times and dates indicated for exams, quizzes, oral presentations, and any other graded assignments cannot be changed for any reason. Even if more sections of the same class are activated, students may only take exams during the scheduled times and dates for the section they are enrolled in.

### **Academic Integrity**

All forms of cheating (i.e., copying during exam either from a fellow student or making unauthorised use of notes) and plagiarism (i.e., presenting the ideas or words of another person for academic evaluation without

acknowledging the source) will be handled according to the Institute Academic Policy, which can be found in the Umbra Institute Academic Policies and Conduct Guidelines.

**Classroom Policy**

Students are expected to follow the policy of the Institute and demonstrate the appropriate respect for the historical premises that the school occupies. Please note that cell phones must be set on silent mode before the beginning of each class. Computers and other electronic devices cannot be used during class lectures and discussions for anything other than note-taking, unless there has been a specific academic accommodation.

## Schedule of Topics, Readings, and Assignments

### WEEK 1

#### **Introduction to the Course**

Meeting#1: In this first class, the instructor will explain the structure of the course. Introduction on “What is sustainability?”

Meeting#2: What is sustainability? There is no universally agreed definition of what sustainability means. Today the class will explore the different views on what it is and how it can be achieved.

#### Readings for the week:

Heinberg, Richard. “What Is Sustainability?” In *The Post Carbon Reader: Managing the 21st Century’s Sustainability Crises*, edited by Richard Heinberg and Daniel Lerch, 13–20. Healdsburg, CA: Watershed Media, 2010.

Dillard, Jesse, Veronica Dujon, and Mary King. “Defining Social Sustainability.” In *The Post Carbon Reader: Managing the 21st Century’s Sustainability Crises*, edited by Richard Heinberg and Daniel Lerch, 21–24. Healdsburg, CA: Watershed Media, 2010.

How Does Sustainable Agriculture in Italy Yield High Quality Food? *CarbonCraft Blog*, 2020

### WEEK 2

#### **Defining & Measuring Sustainable Development**

Meeting#3: The definition of “sustainable food” has to include a social justice component in a globalised world economy.

Sandler, Ronald L. “Food Systems” pp.4-30 in *Food Ethics: The Basics*. 1 edition. London; New York: Routledge. 2014.

Meeting#4: In 2015, countries adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals. In 2016, the Paris Agreement on climate change entered into force, addressing the need to limit the rise of global temperatures. The class will discuss what businesses, governments, and people are doing to achieve the Goals.

#### Readings

United Nations. The Paris Agreement “[What is the Paris Agreement?](#)”, 2015.

Schader, Christian, Jan Grenz, Matthias S. Meier, and Matthias Stolze. “Scope and Precision of Sustainability Assessment Approaches to Food Systems.” *Ecology and Society* 19, no. 3 (2014).

### WEEK 3

#### **Life Cycle Analysis**

Meeting#5: Introduction lecture on Life Cycle Assessment (LCA). LCA is a methodology that provides a way of assessing the environmental impact associated with the whole life cycle of a product or service. The course aims at giving technical guidance on how to interpret LCA results. The concept of Life-Cycle Analysis (LCA) and the true food miles (and carbon footprint) of “local” foods will be introduced.

#### Readings

Mariola, Matthew J. “The Local Industrial Complex? Questioning the Link between Local Foods and Energy Use.” *Agriculture and Human Values* 25, 2: 193–96, 2008.

- Daniela Lovarelli, Luciana Bava, Maddalena Zucali, Giuliana D’Imporzano, Fabrizio Adani, Alberto Tamburini & Anna Sandrucci (2019) Improvements to dairy farms for environmental sustainability in Grana Padano and Parmigiano Reggiano production systems, *Italian Journal of Animal Science*, 18:1, 1035-1048

Svoboda, Susan. “Notes on Life Cycle Analysis.” In *Environmental Management: Readings and Cases*, edited by Mike Russo, 2nd ed., 385–394. Los Angeles: SAGE, 2008.

Meeting#6: The class will explore LCA calculations of different Italian products.

#### Readings

Cerutti, Alessandro K., Sander Bruun, Dario Donno, Gabriele L. Beccaro, and Giancarlo Bounous. "Environmental Sustainability of Traditional Foods: The Case of Ancient Apple Cultivars in Northern Italy Assessed by Multifunctional LCA." *Journal of Cleaner Production*, 52: 245–52, 2013.

Cordella, Mauro, Alessandro Tugnoli, Gigliola Spadoni, Francesco Santarelli, and Tullio Zangrando. "LCA of an Italian Lager Beer." *The International Journal of Life Cycle Assessment*, 13:133, 2009.

#### WEEK 4

##### **Local Food, Organic Food, Farmers Markets**

Meeting#7: What is the history of organic food production and labelling? This week we will discuss the positive aspects of organic agriculture, but will also offer a critique of the "supermarket pastoral" around "natural" food.

##### Readings

McWilliams, James E. "Food miles or Friendly miles?: Beyond the "Farm to Fork" paradigm of production. From *Just Food: Where Locavores Get It Wrong and How We Can Truly Eat Responsibly*. New York: Back Bay Books, 2010.

Lockeretz, William. 2007. "What Explains the Rise of Organic Farming?" In *Organic Farming: An International History*, edited by William Lockeretz, 1–8. Wallingford and Cambridge: CABI.

Scialabba, Nadia El-Hage. 2007. "Foreword" In *Organic Farming: An International History*, edited by William Lockeretz, ix/xi. Wallingford and Cambridge: CABI.

Meeting#8: This class will introduce the use and rediscovery of ancient agricultural varieties. Recovered old cultivars seem to be a good answer to current challenges such as climate change, extreme temperatures, and pests. This course will provide basic information and theoretical knowledge for our visit to *Vivai Belfiore*.

18<sup>th</sup> February: Visit at *Vivai Belfiore* (Lastra a signa (FI))

#### WEEK 5

##### **Urban Agriculture**

Meeting#9: Can the countryside and the city grow to be closer? Today, we will rethink the relationship between urban dwellers and their source of food. Can cities become more sustainable by growing food?

##### Readings

McClintock, Nathan "Radical, Reformist, and Garden-Variety Neoliberal: Coming to Terms with Urban Agriculture's Contradictions." *Local Environment* 19(2): 147–171.2014

Meeting#10: Student group project: students should prepare a project of urban agriculture. The conceived project must be based on the pillars of sustainability. It must therefore have little impact on the environment, be economically beneficial and socially useful. Students will also need to determine which LCA analysis method is most appropriate for their project.

#### WEEK 6

##### **Midterm Exam Week**

Meeting#11: Review

Meeting#12: Exam (see the prompt Mid-Term exam)

#### **Semester Break**

## WEEK 7

### Genetic Modified Organisms:

Meeting#13: The lecture will explore what exactly is “genetic modification”. Is GMO the benevolent technology Monsanto would have us believe it is, or is there something wrong about genetic modification and patenting life?

Meeting#14: The class will explore the science- and myth- that surrounds GM food to understand what’s at stake.

#### Readings for the week:

Blagoevska K, Ilievska G, Jankuloski D, Stojanovska Dimzoska D, Crceva R, Nikolovska, and Angeleska A. "The controversies of genetically modified food." In *IOP Conference Series: Earth and Environmental Science*, 854, 1, p. 012009. IOP Publishing, 2021.

Pellegrino, Elisa, Stefano Bedini, Marco Nuti, and Laura Ercoli. “Impact of Genetically Engineered Maize on Agronomic, Environmental and Toxicological Traits: A Meta-Analysis of 21 Years of Field Data.” *Scientific Reports* 8,1: 3113, 2018

## WEEK 8

### Climate Change, Food Security vs Food Sovereignty

Meeting#15: The growing temperatures are influencing agricultural productivity in correlation with the latitude. In this class, we will explore the risks associated with climate change and the strategies adopted to address this problem.

Meeting#16: It will analyse threats to food security on a global scale and through the case of Italy. Moreover, it will be shown and discussed in the documentary “*Kiss the ground*”. The movie is focused on the practice of regenerative agriculture that has the potential to balance our climate, replenish our vast water supplies, and feed the world.

#### Readings for the week

Sgobbi, Alessandra, and Carlo Carraro. “Climate Change Impacts and Adaptation Strategies in Italy: An Economic Assessment.” No. 2008, 6. Nota di Lavoro, 2008.

PWorld Health Organization. “Climate and Health Country Profile: Italy.” United Nations. Accessed June 29, 2019.

## WEEK 9

### From food to energy: a new Bio-Economy strategy for a sustainable Italy

Meeting#17: From waste to green energy: how food industry by-products become a resource that blends environmental and economic sustainability. It will discuss the BIT II (bioeconomy in Italy) document presented at the Italian presidency of Council Ministers in 2019.

#### Readings:

BIT II – Italian Bioeconomy strategy II ([https://cnbbsv.palazzochigi.it/media/1774/bit\\_en\\_2019\\_02.pdf](https://cnbbsv.palazzochigi.it/media/1774/bit_en_2019_02.pdf))

Fabio Fava, Lucia Gardossi, Patrizia Brigidi, Piergiuseppe Morone, Daniela A.R. Carosi, Andrea Lenzi. The bioeconomy in Italy and the new national strategy for a more competitive and sustainable country, *New Biotechnology*, 61, 2021,124-136.

Meeting#18: In this class, it will discuss the valorization of food waste in Italy as an attractive resource for some industries such as biogas, ethanol, and biodiesel as final products.

#### Readings:

Esra Uçkun Kiran, Antoine P. Trzcinski, Wun Jern Ng, Yu Liu. Bioconversion of food waste to energy: A review. *Fuel*, 134, 2014; 389-399

## WEEK 10

### Agro-ecology, Agro-forestry and Meat Production

Meeting #19: The documentary “*Conspiracy*” will be shown and discussed. This documentary explores the impact of the animal environment and tries to investigate the policies of several environmental organisations.

#### Readings

Hoekstra, A.Y. “The water footprint of animal products”. pp. 21-30. From *The Meat Crisis*. London; New York, NY: Routledge. 2017.

Lawrence, A. and Baxter E., “Sustainable pig production: finding solutions and making choices”. pp. 171-185 from *The Meat Crisis*. London; New York, NY: Routledge. 2017.

Meeting #20: This class will focus on the concept of *agroforestry*. How and where are major agroforestry methods practised in Italy? Are those methods practical?

#### Readings

Torralba, Mario, Nora Fagerholm, Paul J. Burgess, Gerardo Moreno, and Tobias Plieninger. “Do European Agroforestry Systems Enhance Biodiversity and Ecosystem Services? A Meta-Analysis.” *Agriculture, Ecosystems & Environment* 230: 150–61, 2016.

Paris, Pierluigi, Francesca Camilli, Adolfo Rosati, Alberto Mantino, Giustino Mezzalana, Cristina Dalla Valle, Antonello Franca et al.. “What Is the Future for Agroforestry in Italy?” *Agroforestry Systems*, 93, 2243–2256 (2019).

## WEEK 11

### Food Activism and Slow Food

Meeting#21: From the beginning, Slow Food was a “political” food movement. Students will discuss Carlo Petrini’s turning away from the mainstream left and creating the group that would become Slow Food. In addition, we will look at Slow Food’s current stance and decide whether it is the blueprint for global sustainability.

Meeting#22: Resume

#### Readings

Grasseni, Cristina. “Food Activism in Italy as an Anthropology of Direct Democracy.” *Anthropological Journal of European Cultures* 23, 1: 77–98, 2014.

Peano, Cristiana, Paola Migliorini, and Francesco Sottile. “A Methodology for the Sustainability Assessment of Agri-Food Systems: An Application to the Slow Food Presidia Project.” *Ecology and Society* 19, no. 4 (2014).

Laudan, Rachel. “Slow Food: The French Terroir Strategy, and Culinary Modernism. An Essay Review of Carlo Petrini, Trans. William McCuaig.” *Food, Culture, and Society* 7, 2: 134–44, 2004

## WEEK 12

### Students Presentation and Special Academic Events Week

Meeting #23: Final Presentations #1: Student will present their final essay project

Meeting #24: Final Presentations #2: Student will present their final essay project



### WEEK 13

**Final Exam:** Essay submission (see the full prompt on Moodle)