



THE SCHOOL
FOR FIELD STUDIES

Sustainable Food Systems

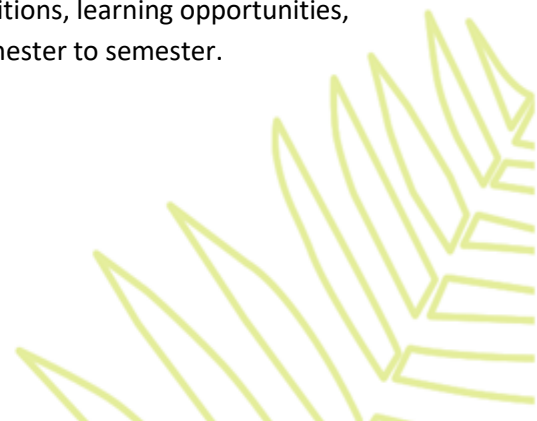
SFS 3263

Syllabus
4 credits

The School for Field Studies (SFS)
Center for Rainforest Studies (CRS)

Queensland, Australia
Bali, Indonesia

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.



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 they may present. In other words, this is a field program, and the field can change.

Course Overview

Demand for agricultural products is expected to increase by an estimated 1.1% per year until 2050 due to drivers such as population growth, increases in per capita consumption, and diet changes. While the widespread use of monocropping systems in industrialized agriculture has managed to sustain food production, trends in global climate change are leading to increasing unpredictable local climates and posing a challenge to farmers worldwide. Moreover, large scale monocropping systems exert a heavy toll on the environment and on local biodiversity.

The Sustainable Food Systems course examines food systems broadly and aims to provide students an experiential learning opportunity while we explore tropical natural, cultural, and agricultural landscapes. The course provides an overview of agroecology, economic botany, and associated cultural, environmental and sustainability issues, and touches broadly on the historical, social-cultural, economic and political factors that shape food systems.

Lectures and activities in this course are aimed at addressing the following questions:

- a) How do agricultural practices differ between Australia and Indonesia?
- b) What are the current and emerging challenges facing agricultural production, and what are some sustainable solutions?

Throughout the course students will be introduced to and are expected to gain hands-on experience on economic botany and research techniques.

Learning Objectives

Sustainable Food Systems aims to:

- improve agricultural literacy
- lay a broad foundation for understanding the social context of food systems, using specific examples in Indonesia and from the Australian Wet Tropics
- discuss the impacts of agricultural activities on the landscape
- discuss possible ways of implementing sustainable agriculture in the face of global environmental change
- introduce methods of data collection, analysis, and use of information
- provide a foundation for pursuing related and specialised courses at higher levels of study

On completion of this course, students should be able to:

- recognize important families of economic plants
- explain the economic, socio-cultural, and political incentives and impediments to implementing sustainable food systems
- demonstrate an understanding of the processes involved in establishing sustainable agroforestry systems
- discuss the dilemmas in choosing between agricultural expansion and the environment
- demonstrate the information literacy skills of collecting, analysing, and data reporting

Assessment

Assessment Item	Value (%)
Unconventional Foods Competition and Presentation	10
Amazing Bot Race (2%) and Quiz (8%)	10
Stakeholder Analysis	5
FEX Assignment	15
Indigenous Food Systems 5MT	15
Final Quiz	20
Minidocumentary	20
Participation	5
TOTAL	100

Unconventional Foods (10%)

This activity follows from lectures on plant families used for food. By engaging in a competition where students need to use uncommon foods to prepare a meal for their peers and also give a presentation, everyone gets to learn about and appreciate unconventional food plants.

Amazing Botany Race and Quiz (10%)

Learning the botany of economically important plants is a cornerstone for agricultural literacy and appreciating the crops that feed populations. This quiz will test the knowledge students have gleaned about economic crops during the semester.

Stakeholder Analysis (5%)

Engage in a role-playing activity of being a stakeholder having discussions with other stakeholders, and in the process research and learn about the different perspectives held by people who produce food, market, sell and consume food.

Field Exercise Assignment (15%)

The field exercise will give students hands-on experience with two basic research techniques: creating and administering survey questionnaires, and the application of qualitative research techniques. Students will be required to collect and analyze survey data and report findings. Students will collect data and submit reports in groups. The assessment will focus on the ability of the students to analyze, clearly present, and intelligently interpret data in a report format.

Indigenous Food Systems 5MT (15%)

This student-led presentation (5-minute talk) is individually assessed and aims to provide an opportunity for students to obtain practical experience in public speaking and explore topics and themes that are pertinent to the subject of traditional food systems, sustainable agriculture, and the social component of agricultural production.

Final Quiz (20%)

Quiz will cover materials covered in the readings, field trips, and lecture material.

Mini Documentary (20%)

Students will create a short video documentary of their learning experience about agriculture in Bali.

Participation (5%)

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.

Grading Scheme

In this course, grading will be done according to aggregate scores. Scores on different assessment tasks will be added together and then projected on to a 100-point scale (percentage grading). Component scores are going to be weighted before being added to reflect their relative importance in the assessment scheme. The 100-point scale will be divided into segments with grades as shown in the table below.

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

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 - Assessments items 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, and extensions will only be considered under extenuating circumstances. If you believe that you have been prevented from completing your work on time for reasons beyond your control (e.g., illness), make sure that you discuss this with the course coordinators **as soon as possible**, and certainly before the assignments are due. Assignments submitted after the due date and without extension will be penalised at **10% per day late**.

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

L: Lectures, FL: Field Lectures, FW: Fieldwork, EX: Exams, REV: Review, FLAB: Field Lab;
WS: Workshop, GL: Guest lecture; D: Discussion, GW: Group Work

Code	Titles of Lectures	Type	Time (hrs)	Readings
SFS 01	Course overview Introductory lecture for the course where we outline learning outcomes and expectations. Lecture conducted at the Australian campus.	L	1.5	
SFS 02	Agricultural literacy An introductory lecture to highlight the main tenets of agricultural literacy and sustainable food systems. Lecture conducted at the Australian campus.	L	1	(Smil, 2001). (Sonneborn, 2007). (Tomislav, 2018). (Kadykalo et al., 2019). (Altieri, 2018). (Fróna, 2019).
SFS 03	Atherton Tablelands Excursion Half day tour to obtain an appreciation of the agricultural landscape and local food produce of the Atherton Tablelands	FT	4	(Thompson, 2016).
SFS 04	Introduction to Ethnobotany and Economic Botany (Part 1) Broad introduction to ethnobotany and economic botany. Learn the botany of common tropical food plants. Lectures delivered at the Australian Center and complemented by field excursions to the Cairns Botanic Gardens and markets in Bali.	L, WS	8	(Balick, 2020). (Wickens, 2012).
SFS 05	Economic botany at the Botanic Gardens Visit the Cairns Botanic Gardens to learn about economic botany	FT	4	
SFS 06	Indigenous and traditional food systems Learn about the food systems of indigenous people and early forms of shifting agriculture	L	1	(Settee, 2020).
SFS 07	Social aspects of agriculture and agrotourism Obtain an appreciation of the social aspects of agriculture and the implications of agrotourism, using Bali as a case study	L	1	(Martínez-Torres, 2010). (Yudhari, 2020).
SFS 08	Culture of Bali We will be departing shortly to Bali for 10 days. We will introduce the culture of Bali at the Australian Center and deliver a briefing for the Bali portion of the program.	L	1	

Code	Titles of Lectures	Type	Time (hrs)	Readings
SFS 09	Traditional agriculture and agroforestry in practice (Part 1) In this part of this series, you will visit a coffee agroforest and learn about the way coffee is cultivated in Bali. You will have the option to taste various secondary products produced by these agroforests.	FL/GL	2	(Budiasa, 2014).
SFS 10	Traditional agriculture and agroforestry in practice (Part 2) In this part of this series, you will visit an agrotourism operation (Bali agritours) near Ubud, where our farmer guides will give us demonstrations of how rice is planted in Bali. You will have some hands-on experience in the cultivation process. As part of our time travelling in Bali, you will also examine the World Heritage Subak irrigation system.	FL/GL	5	(Lansing, 1991).
SFS 11	Traditional agriculture and agroforestry in practice (Part 3) In this part of this series, we will visit a specialized vanilla agroforest farm at Yangapi to learn about how vanilla is grown in an agroforestry setting. As part of this trip, we will also examine home gardens in neighbouring plots to learn about traditional and small-scale farming practices in Bali.	FL/GL	5	
SFS 12	Introduction to Permaculture In this field workshop at the Gianyar Regency in Bali, you will learn about how permaculture systems can be established at a community level and aid with disaster preparedness and recovery. When we return from Bali, we will put this instruction into practice through guided projects at the Australia Center.	FL/GL	8	(McKenzie, 2006).
SFS 13	Economic botany and ethnobotany field exercise (FEX) Field exercises will introduce you to collecting data for economic botany, ethnobotany, and agroforestry studies including data collection, analysis, and report writing. These activities will be carried out in a Balinese market before returning to Australia.	FEX	8	

Code	Titles of Lectures	Type	Time (hrs)	Readings
SFS 14	The matter of meat Hunting and fishing are the most ancient means of obtaining protein sources. In modern times, animals are reared on a large scale to meet food demands. Learn about the implications of meat production. We also examine sustainable means of meat production, and alternatives to meat. Lecture delivered at the Australia Center.	L	2	(Serrat, 2017).
SFS 15	Soil Matters Soil health underpins everything in agriculture. Here we give a broad introduction to soil ecology, with relevance to sustainable food systems. Lecture delivered at the Australia Center.	L	1.5	(Masters, 2019).
SFS 16	Making the transition to sustainable food production It is not possible or even desirable to make a quantum leap from conventional to regenerative agriculture. In this lecture, we examine the transitioning process and its importance. Lecture delivered at the Australia Center.	L	1	(Wezel, 2020).
SFS 17	FEX presentation This period is dedicated to presenting the results of your field exercises back at the Australia Center.	GW	4	
SFS 18	Three-minute talk Present your three-minute talks on the research you have done on food sustainability topics. Presentations to be delivered at the Australia Center.	D	2	
	Total		60	
	UMN Instructional Hours*		72	

**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

1. Altieri, M. A. (2018). *Agroecology: the science of sustainable agriculture*. CRC Press.
2. Balick, M. J., & Cox, P. A. (2020). *Plants, people, and culture: the science of ethnobotany*. Garland Science.
3. Budiasa IW (2014). Organic farming as an innovative farming system development model toward sustainable agriculture in Bali. *Asian Journal of Agriculture and Development*, 11(1362-2016-107724), 65-75.
4. Fróna, D., Szenderák, J., & Harangi-Rákos, M. (2019). The challenge of feeding the world. *Sustainability*, 11(20), 5816.
5. Kadykalo, A. N., López-Rodriguez, M. D., Ainscough, J., Droste, N., Ryu, H., Ávila-Flores, G., & Harmáčková, Z. V. (2019). Disentangling 'ecosystem services' and 'nature's contributions to people'. *Ecosystems and People*, 15(1), 269-287.
6. Lansing JS (1991) *Priests and Programmers: Technology of Power in the Engineered Landscape of Bali*. Princeton University Press.
7. Martínez-Torres, M. E., & Rosset, P. M. (2010). La Vía Campesina: the birth and evolution of a transnational social movement. *The Journal of Peasant Studies*, 37(1), 149-175.
8. Masters, N. 2019. *For the love of soil*
9. McKenzie L & Lemos E (2006) *A resource book for permaculture*. IDEP Foundation
10. Serrat, O. (2017). The sustainable livelihoods approach. In *Knowledge solutions* (pp. 21-26). Springer, Singapore.
11. Settee, P., & Shukla, S. (Eds.). (2020). *Indigenous food systems: Concepts, cases, and conversations*. Canadian Scholars.
12. Smil, V. (2001). *Feeding the world: A challenge for the twenty-first century*. MIT press.
13. Sonneborn, L. (2007). *The environmental movement: protecting our natural resources*. Infobase Publishing.
14. Thompson, M., Prideaux, B., McShane, C., Dale, A., Turnour, J., & Atkinson, M. (2016). Tourism development in agricultural landscapes: The case of the Atherton Tablelands, Australia. *Landscape Research*, 41(7), 730-743.
15. Tomislav, K. (2018). The concept of sustainable development: From its beginning to the contemporary issues. *Zagreb International Review of Economics & Business*, 21(1), 67-94.
16. Wezel, A., Herren, B. G., Kerr, R. B., Barrios, E., Gonçalves, A. L. R., & Sinclair, F. (2020). Agroecological principles and elements and their implications for transitioning to sustainable food systems. A review. *Agronomy for Sustainable Development*, 40(6), 1-13.
17. Wickens, G. E. (2012). *Economic botany: principles and practices*. Springer Science & Business Media.
18. Yudhari, I. D. A. S., et al. (2020). Multidimensional Scaling: Sustainability of Arabika Coffee Agro-Tourism in Kabupaten Bangli Bali. *Journal of Environmental Management & Tourism*, 11(6), 1455-1465.