



ES/FO330 - SUSTAINABLE FOOD & AGRICULTURE

IES Abroad Freiburg

DESCRIPTION:

The course sets out to equip students with a profound understanding of the complexity of food systems. It provides a broad overview of the manifold interlinkages between agriculture and food supply with regards to economic, ecological, social and individual well-being. By means of lectures, independent study and hands-on experiences, students will develop a personal approach to ecological food resources and learn how to use them in a sustainable manner. In this context, sustainability is referred to as the possibility of securing global nutrition in the long term, i.e. to preserve ecological, cultural and social resources as well as interrelated systems.

CREDITS: 3 credits

CONTACT HOURS: 45 hours

LANGUAGE OF INSTRUCTION: English

PREREQUISITES: None

ADDITIONAL COST: None

METHOD OF PRESENTATION:

- Lectures
- Discussions
- Exercises
- Field study
- Group work
- Role play/ debate
- Video clips
- Student presentations
- Independent study

Additional material will be posted on Moodle. This platform is also the place to share assignments and to follow recent developments in the field. Participation is part of the student's grade; therefore, all students are expected to contribute during classes.

REQUIRED WORK AND FORM OF ASSESSMENT:

- Oral Participation - 10%
- Oral presentation of individual research - 25%
- Reflection Journal - 20%
- Presentation of Group Work - 20%
- Final Exam - 25%

Course Participation – 10%

Students are expected to participate in debates with questions related to the readings and Students are required to complete all reading assignments and will be expected to demonstrate this through regularly assigned homework, pop quizzes, and/or insightful and relevant contributions to in-class discussion. All these components will count toward the class participation grade. Participation also applies to course-related trips, outings and/or special events in and around Freiburg. A rubric for participation is available in the appendix and on Moodle.

Oral presentation of individual research - 25%

The students will be assigned to one presentation-topic by the instructor. They will prepare an overview of the given topic and connect it to the course content in an oral presentation. The presentation should include the most important points and background of the topic. The presentations will be a maximum of 10-15 minutes + 5 minutes for questions/ activity, using PowerPoint, a flip chart and/or print handouts. The presentations will be held in week 2. The time slots for the presentations will be assigned by the instructor. A draft of the presentation needs to be submitted the day before the presentation. A rubric for presentations is available on Moodle

REFLECTION JOURNAL – 20%

Self-reflection is essential to developing one's understanding of the main academic concepts discussed in class and to reflect on one's own role in relation to sustainable food production, eating and consumption habits. Entries are directed assignments that require students to reflect on their academic experience in class, readings, field study and films. Journal entries (1000 words) are to be completed and submitted by the due date announced by the instructor at the beginning of the course (the submission deadline will be set at the beginning of week three). The journal must be submitted by e-mail or as an upload on Moodle.

Presentation of Group Work - 20%

Presentation: a map and guide about food and agriculture in the Freiburg region, including portraits of local plants, respective recipes, and further material such as pictures, articles etc. Students will be requested to self-organize the work, according to the tasks, topics and the academic framework given by the instructor. The presentation can be held using PowerPoint, posters and/or print hand-outs. A draft of the presentation needs to be submitted the day before the presentation. A rubric for presentations is available on Moodle

Final Exam – 25%

The final evaluation will be based on essay questions to display knowledge of course content and the ability to reflect on as well as to critically analyze and compare best practices. Possible topics may include: history of agriculture, wild edible plants, plant ecosystems, impact of diets on sustainability and related monitoring, concepts and practices of permaculture and organic agriculture, access to resources, urban agriculture, food processing, food distribution, concepts of food security and food sovereignty. Students will have 90 minutes to complete the exam in class.

LEARNING OUTCOMES:

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

- Critically evaluate literature on sustainable food and agriculture
- Analyze various stakeholders' perspectives and interests related to sustainable food and agriculture
- Assess their own food consumption habits and participation in industrial food systems
- Define the key criteria for sustainable food systems
- Describe different functions of ecosystems and key resources of agriculture
- Understand the concepts of food security and food sovereignty
- Design a map and guide on regional food supply

Attendance Policy (see also the detailed version on Moodle ESS Academics page)

IES Abroad courses are designed to utilize the unique contribution of the instructor; the lecture/discussion format is regarded as the **primary mode of instruction**. Therefore, attendance is mandatory. Any unexcused absence will incur a penalty on your final course grade. Deductions from grades due to absences are based on contact hours (= 45 minutes). Any unexcused absence will result in a penalty on your final course grade (1 unexcused contact hour absence - 1%, 2nd unexcused contact hour absence -2%, 3rd unexcused contact hour absence – 3% and so on). Any student who misses more than 25% of a course (= more than 11 contact hours), whether the absences are excused or are unexcused, will receive an "F" as the final grade in the course.

ESS courses may have entire course blocks that take place on one day in addition to longer field trips that count for several contact hours. In this case, the actual missed contact hours are added together, and the absences are sanctioned according to the rule above.



If you are late for a planned field trip, you will generally not be able to join the trip, since the group needs to leave on time and cannot wait for one person. Punctuality is therefore essential here. If you miss a class, it is **your responsibility** to make up on everything that was covered in class. Tests/presentations missed during unexcused absences **cannot be made up**.

Arriving late for class: Punctuality is important for the planned course schedule. If you are late for class, the late time will be recorded and added up at the end of the course. You will receive a grade reduction based on the accumulated amount of missing contact hours (as outlined above; i.e., if you were late by 15 minutes on 3 days, your grade would be reduced by 1% for 1 missing contact hour).

LATE OR FAILURE SUBMISSION OF ASSIGNMENTS: Late submission of assignments or failure of submission of assignment results in the grade F of that particular assignment. This does not apply to late or non-submission due to illness with an excused absence.

Excused absence: Please call the IES Center before the start of your first class if you are ill and would like to be excused from your course, as outlined in the "Cell Phone and Attendance Policy" handed out during orientation. Student Affairs staff will decide whether your absence can be excused directly or whether a doctor's note is necessary. Absences due to religious observances and family emergencies may be excused at the discretion of the Center Director, with written approval. A petition for an excused absence due to a religious holiday needs to be submitted 2 weeks in advance. If permission is granted, the student needs to inform the Academic Dean, the Student Affairs Team and their instructors. Absences due to private travel or travel delays cannot be excused, even with advanced notice.

ACADEMIC INTEGRITY CODE:

Students are expected to abide by the IES Abroad Code of Academic Integrity. The detailed IES Abroad academic integrity code can be accessed on Moodle.

All work submitted by a student for academic credit should constitute the student's own original work. Regardless of the quality of work, plagiarism will result in a failing grade for the course and/or an academic review and possible expulsion from the program. Plagiarism may be broadly defined as "copying of materials from sources, without acknowledging having done so, claiming other's ideas as one's own without proper reference to them, buying materials such as essays/exams, and using AI-generated content without disclosure."

As AI tools continue to evolve, learning how to use them responsibly is an important emerging skill. Some of our courses allow students to explore the use of generative artificial intelligence (GAI) tools such as ChatGPT for some assignments and assessments. The instructor of each course will communicate whether GAI may be used in a course and provide specific guidelines and procedures for its appropriate use.

Updated information on your course and readings, including additional readings from journalistic articles, can be found on the Moodle platform at <https://moodle.iesabroad.org/login/index.php>

CONTENT:

Week	Content	Assignments and Readings
Week 1 – Cultural perspectives on agriculture and food		
Week 1	Session 1: Introduction to course and topic - Welcome and introduction - Mind-Map exercise, lecture and discussion: why sustainable food & agriculture? - Assignment of topics and due dates for student presentations & reflection journals	Required reading: Parasecoli, <u>A Cultural History of Food</u>, pp. 5-29. Independent Study (tasks assigned): Milestones in the history of food and agriculture
	Session 2: History of food and agriculture - Presentation of research for timeline and discussion: milestones in the history of agriculture and interrelations with societal developments. - Lecture and discussion: on a sustainable diet? Nutrition choices and their implications. - Introduction of Group Work assignment	Required readings: - Shaheen, <u>Edible Wild plants</u>, pp. 41-57, 59-64, 175-179. - Vira, <u>Forests and Food</u>, pp. 29-55.
	Session 3: “Natural” food / Urban foraging - Reflection on readings lecture: Local wild edible plants. - Lecture: Nature – the food treasury. Biodiversity, ecosystems and services. - Outdoor learning activity: Local wild edible plants. Which plants can be found in our environment? What benefits do they have?	Required reading: Philipp, <u>Script on regional food supply in Freiburg</u>. Independent Study (plant journal templates provided): plants and their uses
	Session 4: Local food - the Freiburg example - Presentation of Wild edible plants: “Plant gallery” - Field study: What’s on offer at the Freiburg farmers’ markets, shops etc.? Reflection and discussion on regional food supply in Freiburg	Required reading: Nandwani, <u>Organic Farming</u>, pp. 1-35. Research and mapping (for group work): Sustainable food spots in Freiburg
	Session 5: Regenerative farming in Freiburg region Excursion to a regional farm with a guided tour. Insights on agricultural techniques in practice. Challenges and opportunities.	Required reading: Brown et al., <u>Sowing Seeds in the City</u>, pp. 1-24.

Week 2 – Principles, methods and technologies for sustainable agriculture		
Week 2	Session 6: Food Ecosystems - Lecture: Ecosystems as the basis of food production - Movie screening: Verhaag, Code of Survival, 95min. Reflection discussion in class	Required Reading: - Nandwani, <u>Organic Farming</u>, pp. 1-35. - Dhanarajan, <u>Sustainable Agriculture towards Food Security</u>, pp. 309-325. Recommended: - Heinrich-Böll-Stiftung, <u>The Soil Atlas</u>. - Mollison, <u>Permaculture</u>, pp. 16-21, 53-58.
	Session 7: Essential natural resources for agriculture - Lecture: Key natural resources for food production. - Student presentations: research on related topics Excursion to beekeeper oder seed saving organisation with insights on preservation of essential resources for agriculture	Required Reading: - Nandwani, <u>Organic Farming</u>, pp. 325-340. - Clark, <u>Sustainable Agriculture</u>, pp. 261-286. Optional watching: - Siegel, Betz, <u>Seed. The Untold Story</u>. (94 minutes)
	Session 8: Access to agricultural resources - Lecture and discussion: Access to seeds, land and water. Challenges to food supply. - Student presentations: research on related topics	Required reading: - Nandwani, <u>Organic Farming</u>, pp. 123-136. Recommended reading: - Greenpeace, <u>Nitrate Pollution in Water</u>.
	Session 9: Sustainable agriculture and resource management - Lecture: Concepts and practices of sustainable farming (organic, regenerative, permaculture etc.) - Student presentations: research on related topics Workshop at urban garden in Freiburg (acc. to the season and needs): preparing compost beds, harvesting seeds, tilling/mulching, etc.)	Required readings: - Nandwani, <u>Organic Farming</u>, pp. 231-258. - Howard, <u>Concentration and Power in the Food System</u>, pp. 2-14, 136-145. Exercise (instructions provided): Prepare for role play discussion -> stakeholder cards
	Session 10: Smallholders vs. industrial farms - Lecture: economics of agriculture and food. - Stakeholders, concentrations of power, external costs of agriculture. Role play discussion: small-scale organic farming vs.	Required reading: - Howard, <u>Concentration and Power in the Food System</u>, pp. 2-14, 136-145. Recommended reading: - Kiani et al., <u>Main nutritional deficiencies</u>.

	industrial agriculture	
Week 3 – Socio-economic aspects of food production		
Week 3	Session 11: Sustainable food chains Lecture: value-added food. Criteria for sustainable food products Excursion to sustainable local food producer with insights on sourcing, processing and marketing	Required reading: - Dhanarajan, <u>Sustainable Agriculture towards Food Security</u>, pp. 309-325. - Michel et al., <u>Opportunities and Challenges of Food Policy Councils</u>. Finalizing Reflection Journal
	Session 12: Justice in food distribution - Reflection about readings and discussion on food policy councils/ food ecosystems - Lecture: economics of agriculture and food. Stakeholders, concentrations of power, external costs of agriculture - Discussion about food sovereignty and alternative economic models of food distribution Submission of Reflection Journal	Required reading: - CSA, <u>Overview of Community Supported Agriculture in Europe</u>, pp. 5-12. - Agrathaer GmbH, Leibniz Centre for Agricultural Landscape Research, <u>Alternative Food Networks</u>. Finalizing draft for Group work presentation
	Session 13: Changing perspectives: “prosumers” in agriculture - Reflection on readings lecture - Discussion: consumers influence on food systems? The power of consumers’ demand and active cooperation. - Lecture: food councils and food in spatial planning. The roles of authorities and society. Submission of group work draft: “Sustainable food in Freiburg”	Preparation for final exam and Group work presentation
	Session 14: Final exam and Group work presentation - Final exam - Presentation of group work “Sustainable food in Freiburg” Final wrap-up and evaluation	

COURSE-RELATED TRIPS:

- GartenCoop / Baldenweger-Hof

COURSE-RELATED TOPICS FOR STUDENT RESEARCH:

- CO₂ capture in soils
- Diversity in seeds and species
- Integrated pest management
- Hydroculture, Aquaponics and Aeroponics
- Insects. Endangered species or food of the future?
- Practices of agro-ecology
- Water management in farming
- Food waste

Please note: this is a non-exhaustive list of potential topics for student research which shall refer to the topical structure of the course. Details will be discussed with the instructor and related sources for reading provided.

REQUIRED READINGS:

- Agrathaer GmbH and Leibniz Centre for Agricultural Landscape Research. Alternative Food Networks at the urban-rural interface. Müncheberg: Agrathaer GmbH 2017. URL: <https://www.isi.fraunhofer.de/content/dam/isi/dokumente/ccv/2017/FutureFoodCommons-Alternative-Food-Networks-at-the-urban-rural-interface.pdf>
- Brown, Sally, Kristen McIvor and Elizabeth Hodges Snyder (eds). Sowing Seeds in the City: Ecosystem and Municipal Services. Dordrecht: Springer, 2016.
- Dhanarajan, Arulbalachandran (ed). Sustainable Agriculture towards Food Security. Singapore: Springer, 2017.
- European CSA Research Group. Overview of Community Supported Agriculture in Europe. 2016. URL: <http://urgenci.net/the-csa-research-group/>
- Howard, Philip H. Concentration and Power in the Food System. Who Controls What We Eat?. London: Bloomsbury Publishing, 2016.
- Michel, Sophie et al. "Opportunities and challenges of food policy councils in pursuit of food system sustainability and food democracy—a comparative case study from the Upper-Rhine region", in Frontiers in sustainable food systems, 6 (2022), 916178. URL: <https://doi.org/10.3389/fsufs.2022.916178>
- Philipp, N. Andrea. Freiburg Reader. Script on regional food supply in Freiburg. Freiburg 2019 [unpublished resource, available on Moodle].
- Nandwani Dilip (ed). Organic Farming for Sustainable Agriculture. Cham: Springer, 2016.
- Parasecoli, Fabio. A Cultural History of Food. London/New York: Berg, 2012
- Shaheen, Shabnum, Mushtaq Ahmad and Nidaa Haroon (eds). Edible Wild Plants: An alternative approach to food security. Cham: Springer, 2017.
- Vira, Bhaskar, Christoph Wildburger and Stephanie Mansourian (eds). Forests and Food: Addressing Hunger and Nutrition Across Sustainable Landscapes. Cambridge (UK): Open Book Publishers, 2015.

RECOMMENDED READINGS:

- Diver, Steve. "Biodynamic agriculture and compost preparation," in Appropriate Technology Transfer for Rural, 800-346-9140 (1994), pp. 1-20.
- Biel, Robert. Sustainable Food Systems: The Role of the City. London: UCL Press, 2016.
- Greenpeace. Nitrate Pollution in Water: A European Plague. 2023. URL: https://www.greenpeace.org/static/planet4-eu-unit-stateless/2023/06/6c153483-nitrate-brief_en_web.pdf
- Heinrich-Böll-Stiftung. The Soil Atlas. 2015. URL: https://www.boell.de/sites/default/files/soilatlas2015_ii.pdf
- Kiani et al. "Main nutritional deficiencies," in Journal of Preventive Medicine and Hygiene 63 (2022). doi: 10.15167/2421-4248/jpmh2022.63.2S3.2752



RECOMMENDES VIDEOS:

- Taggart Siegel, Jon Betz, *Seed. The Untold Story*, 2016. (94 Minutes)

Appendix:

Rubric for course participation:

A	Excellent participation The student's contributions reflect an active reading of the assigned bibliography. Skillfully synthesizes the main ideas of the readings and raises questions about the applications and implications of the material. Demonstrates, through questions and comments, that they have been capable of relating the main ideas in the readings to the other information discussed in the course and with their own life experience. The student makes informed judgments about the readings and other ideas discussed in class, providing evidence and reasons. They respectfully state their reactions about other classmates' opinions and can contribute to the inquiry spiral with other questions. The student gets fully involved in the completion of the class activities.
B	Very good participation The student's contributions show that the assigned materials are usually read. Most of the time, the main ideas are identified, even though sometimes it seems that applications and implications of the information read were not properly reflected upon. The student can construct over others' contributions, but sometimes seems to interrupt the shared construction to go over tangents. They are respectful of others' ideas. Regularly involved in the activities but occasionally loses concentration or energy.
C	Regular participation The participant evidences a regular reading of the bibliography but in a superficial way. They try to construct over others' ideas, but commonly provide comments that indicate a lack of preparation about the material. Frequently, contributions are shallow or unarticulated with the discussion in hand.
F	Insufficient participation Consistently, the participant reads in a shallow way or does not read at all. Does not participate in an informed way and shows lack of interest in constructing over others' ideas.