ES/FO330 SUSTAINABLE FOOD & AGRICULTURE
IES Abroad Freiburg Environmental Studies & Sustainability Program Syllabus

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.

In Week 1, students will explore food through a cultural and individual perspective i.e. its importance for every single being and for the socio-economic development. What do we consider “food” and how our society gets access to it? Under which conditions do we consider food healthy, nutritious, sustainable?

Week 2 focuses on different forms of cultivation, principles and practices of permaculture, organic farming and urban foraging. The exploration of various approaches to the (sustainable) management of resources and application of different agricultural practices will also lead to discussing sociological issues.

Week 3 deepens the discourse on questions of access to land, seeds and other essential resources, the juxtaposition of food industry versus smallholder agriculture, challenges of food distribution and current concepts of food sovereignty. Discussing such socio-economic aspects of food production will bring the discussion full circle and revert to the role of human beings as producers as well as consumers of food and members of societies.

Throughout the 3-week module, examples from Freiburg and the region will be examined and put into context by means of case studies from other countries with varying global conditions. Lectures, course-related trips and class discussions are complemented by research work in individual group assignments, both in written and oral form. In discussions, students are invited to adopt the perspectives of various stakeholders (citizens, farmers, agrochemical companies, conservationists, authorities, etc.).

CREDITS: 3

CONTACT HOURS: 45 (3-week module)

PREREQUISITES: None

ADDITIONAL COST: None

LANGUAGE OF INSTRUCTION: English

METHOD OF PRESENTATION:
- Lectures
- Discussions
- Group work
- Mind-Map
- Journals
- Student presentations
- Course-related trips
• Presentation

Additional material will be made available on Moodle which will also be used to share assignments and to follow recent developments in the field.

REQUIRED WORK AND FORM OF ASSESSMENT:
• Active class participation - 10%
• Midterm evaluation of written assignments - 30%
• Oral presentation of individual research - 20%
• Presentation of group work (Freiburg food map & guide) – 10%
• Final exam - 30%

Active Class Participation
Participation in discussions based on required readings, lectures, personal experiences and field trips in the vicinity of Freiburg. 10% of the final grade. View participation rubric.

Midterm evaluation
The midterm evaluation will be based on written assignments:
- 2 plant journals and related recipes per student based on templates given by the instructor – 10%
- Essay on individual research on assigned topic (Sample research topics are listed at the end of the syllabus. Students may propose their own research ideas with professor review and approval. The essay is the detailed written form of the oral presentation of the individual research (see below). 1250 words, single spaced) – 20%
These two written assignments are due by the end of week 2 and make up 30% of the final grade.

Oral presentation of individual research
Students will conduct individual research on an assigned topic during the first two weeks of the course. As part of this research, they will prepare an overview of their research and share with the class in an oral presentation. The presentation should include the most important points and background of the research. The essay (see Midterm Evaluation section for details) will be a more thorough review and analysis of research. (Presentations will be a maximum of 15 minutes, using PowerPoint, a flip chart and/or print handouts) The presentations will be held mainly in week 2 with a possibility of a few slots in week 3 depending on class size.
The time slots for the presentations will be assigned by the instructor, to follow the topical structure of the course.
The oral presentation will count for 20% of the final grade.

Presentation of group work
Group presentation of a course book project: a Freiburg map and guide about food and agriculture in the Freiburg region, including portraits of local wild edible plants, respective recipes, and further material such as pictures, articles etc. Students will be requested to self-organize the work, according to the tasks given by the instructor.
The common course book has to be submitted on day 3 of week 3, prior to the oral presentation to be held at the end of week 3. The group presentation can be held using PowerPoint, flip charts and/or print hand-outs. It shall not exceed a length of 5 minutes per student and will account for 10% of the final grade (5% course book, 5% presentation).

Final exam
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, community-supported agriculture, concepts of food security and food sovereignty. It accounts for 30% of the final grade.
LEARNING OUTCOMES:
By the end of the course, students will be able to:

• Identify at least 12 edible wild plants, their preparation and possible uses
• Assess their own food consumption habits and participation in industrial food systems
• Interpret the impediments and opportunities in a transition to healthier and sustainable food
• Explain and apply at least three techniques of permaculture, urban gardening and organic agriculture
• Define the key criteria for sustainable food systems, basic concepts in agro-ecology and economics
• Diagnose different stakeholder perspectives and interests along the food chain
• Differentiate between concepts of food security and food sovereignty
• Design a map and guide on regional food supply in Freiburg

ATTENDANCE POLICY (IES FREIBURG STANDARD):
IES Abroad courses are designed to take advantage of the unique contribution of the instructor. The lecture/discussion format is regarded as the primary mode of instruction. Regular class attendance is mandatory.

• Every unexcused absence will lower your final grade by 5%.
• Tests/presentations missed during unexcused absences cannot be repeated.
• If you miss a class it is your responsibility to catch up on the covered class content.
• Absences due to illness can only be excused by a doctor’s certificate. Without a doctor’s note absences due to illness will be regarded as unexcused.
**Week 1 – Cultural perspectives on agriculture and food**

<table>
<thead>
<tr>
<th>Day</th>
<th>Morning Assignments and Readings</th>
<th>Afternoon Assignments and Readings</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Introduction</strong></td>
<td>Independent Study (tasks assigned): milestones in the history of agriculture -&gt; cards for timeline</td>
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<tr>
<td></td>
<td>• Organizational issues</td>
<td>Readings: Tannahill, <em>Food in History</em>, pp. assigned acc. to research task</td>
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<td></td>
<td>• Test: blind-tasting the origin and quality of fruit</td>
<td><strong>Individual research on assigned topic</strong></td>
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<tr>
<td></td>
<td>• Assignment of topics and due dates for student research, assignment of tasks for timeline (day 2)</td>
<td><strong>Independent Study (templates provided): plants and their uses -&gt; plant journals</strong></td>
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<td></td>
<td><strong>Readings:</strong></td>
<td>Readings: Shaheen, <em>Edible Wild plants: An alternative approach to food security</em>, pp. 159-173, 127-133</td>
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<td></td>
<td>Tannahill, <em>Food in History</em>, pp. assigned acc. to research task</td>
<td>Vira, <em>Forests and Food</em>, pp. 29-55.</td>
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<td></td>
<td>Shaheen, <em>Edible Wild plants: An alternative approach to food security</em>, pp. 41-57, 59-64, 175-179</td>
<td><strong>Individual research on assigned topic</strong></td>
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<td>2</td>
<td><strong>History of agriculture</strong></td>
<td>Independent Study (templates provided): plants and their uses -&gt; plant journals</td>
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<td>• Presentation of research for timeline and discussion: milestones in the history of agriculture and inter-relations with societal developments.</td>
<td><strong>Individual research on assigned topic</strong></td>
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<td>Vira, <em>Forests and Food</em>, pp. 29-55.</td>
<td><strong>Independent research on assigned topic</strong></td>
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<td>3</td>
<td><strong>“Natural” food and modern diets</strong></td>
<td>Independent Study (for group project): meals from wild edible plants -&gt; collection of recipes</td>
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<td>• Lecture: Nature – the food treasury. Biodiversity, ecosystems and services.</td>
<td>Readings: <strong>Script on regional food supply in Freiburg</strong> (author Andrea Philipp)</td>
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<td>• Lecture and discussion: on a sustainable diet? Nutrition choices and their implications.</td>
<td><strong>Individual research on assigned topic</strong></td>
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<td><strong>Reading:</strong></td>
<td><strong>Individual research on assigned topic</strong></td>
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<td></td>
<td>• Brown, <em>Sowing Seeds in the City</em>, pp.1-20</td>
<td><strong>Individual research on assigned topic</strong></td>
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<td>4</td>
<td><strong>Local food: The Freiburg example</strong></td>
<td>Research and mapping (for group project): sustainable foods spots in Freiburg -&gt; map indications on openstreetmap.org</td>
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<td>• Lecture and field study: What’s on offer at the Freiburg farmers’ markets, shops etc.</td>
<td>Readings: <strong>Individual research on assigned topic</strong></td>
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<td>5</td>
<td><strong>Traditional farming and cooking</strong></td>
<td>Workshop at Lernort Kunzenhof: typical farm work according to the season (scything, wood-chopping, milking, building fences, flailing grains etc.)</td>
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<td>• Excursion: Lernort Kunzenhof educational farm. Mission, methodology, resources, products and services.</td>
<td><strong>Individual research on assigned topic</strong></td>
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<td>• Workshop at Lernort Kunzenhof: cooking a lunch from nature.</td>
<td><strong>Individual research on assigned topic</strong></td>
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| 1   | **Food ecosystems**  
- Lecture: ecosystems as the basis of food production.  
- Student presentation(s): research on related topic(s)  
- Discussion: role of humans in food ecosystems |  
- Individual research on assigned topic |
| 2   | **Permaculture and organic agriculture**  
- Student presentation(s): research on related topic(s)  
- Exercise (tasks assigned): applying permaculture design principles -> design of spaces, garden, etc.  
- Individual research on assigned topic |
| 3   | **Essential natural resources for food supply**  
- Lecture: soil health, water management and pest control.  
- Student presentation(s): research on related topic(s)  
- Outdoor lecture (at beehive): the pollinators of our food. Diversity and threats to bees etc. |  
- Reading: Nandwani, *Organic Farming for Sustainable Agriculture*, pp. 325-340  
Clark, *Sustainable Agriculture*, pp. 261-286  
- Individual research on assigned topic |
| 4   | **Rural and urban access to agriculture**  
- Lecture and discussion: access to seeds and to land and key resources. Challenges to food supply.  
- Student presentation(s): research on related topic(s)  
- Lecture: urban agriculture. Food production on our doorstep? |  
- Exercise (template provided): prepare for role play discussion -> stakeholder cards  
Reading: Howard, *Concentration and Power in the Food System*, pp. 2-14, 136-145  
- Individual research on assigned topic |
| 5   | **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. industrial agriculture  
**Mid-term evaluation**  
- Submission of written assignments (research presentation outlines) |  
- Workshop at urban garden in Freiburg: practical work according to the season and needs (tilling/mulching, weeding, sowing, harvesting seeds, building compost beds, fences, insect hotels etc.)  
- Individual research on assigned topic |
### Week 3 – Socio-economic aspects of food production

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| 1   | **Processing the harvest**  
  • Lecture: value-added food. Criteria for sustainable food products.  
  • Company visit (oil mill or producers of spreads): organic food processing. | **Common product:** Freiburg course book, compilation: food map, wild edible plant journals and recipes  
  **Reading:**  
  • Shaheen, *Edible Wild plants: An alternative approach to food security*, pp. 1-39 |
| 2   | **Justice in food distribution?**  
  • Lecture: distribution from field to plate. Channels of distribution and distinctions.  
  • Student presentation(s): research on related topic(s)  
  • Discussion: food justice and food sovereignty? Food distribution globally. | **Common product:** Freiburg course book, editing & formatting  
  **Readings:**  
  • Eaton and Shepherd, *Contract Farming*, pp. 43-54  
  • URGENCI, *CSA’s in Europe*, pp. 5-12  
  • Roggema, *Food Roofs of Rio de Janeiro*, pp. 29-44  
  • Individual research on assigned topic |
| 3   | **Changing perspectives: “prosumers” in agriculture**  
  • Lecture: Principles, varieties and applications of community-supported agriculture.  
  • Student presentation(s): research on related topic(s)  
  • 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 project: Freiburg course book | **Common product:** Freiburg course book, completing and printing  
  **Readings:**  
  • Ackerman-Leist, *Rebuilding the Foodshed*, pp. 211-292 |
| 4   | **Community supported agriculture in practice**  
  • Excursion to Freiburg CSA (GartenCoop): principles, history, implementation, challenges etc. | **Common workshop at CSA:** practical work according to the season (weeding, harvesting, distribution) |
| 5   | **Final evaluation**  
  • Final exam: multiple-choice test.  
  • Presentation of group project: Freiburg course book | **Wrap-up and course evaluation by students** |

### COURSE-RELATED TOPICS FOR STUDENT RESEARCH:
- Impacts of vegetarian diets on the global climate. Explain.
- Impacts of climate change on food systems. Explain.
- Community supported agriculture in U.S.A. Provide an overview.
- Practices of agro-ecological management e.g. integrated pest management, Terra Preta, Aquaculture/Aquaponics, Forest Gardens, Crop Rotation. Explain and develop an example.
- IAASTD report “Agriculture at a crossroads”. Analyze and compare key findings for different continents.
- Crops and their impacts on history, e.g. the potato. Explain.
- Organic Agriculture in Germany. Provide an overview.
- EU Common agricultural policy. Reflect on the criticism.
- Food insecurity. Analyze possible reasons.
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.

COURSE-RELATED TRIPS:

- Outdoor exercise in foraging: getting to know edible wild plants in Freiburg, their characteristics, possible uses and related ecosystems.
- Visit to one of Freiburg’s farmers’ markets: exploring and understanding local food as well as related policies.
- Full-day excursion to Lernort Kunzenhof: experiencing the teaching approach of this educational farm first hand by learning about the various areas related to agriculture (food, energy, textiles etc.). Practicing typical farm work and seasonal cooking on the farm’s wooden stove.
- Half-day visit to various urban gardens in Freiburg: comparing models and layouts with regard to their openness to public, size, uses and gardening techniques. Jointly working on small garden projects such as compost beds, insect hotels and Benjes hedges.
- Full-day excursion to a project of Community Supported Agriculture (e.g. GartenCoop) in the Freiburg region: understanding the CSA model applied (as compared to other models). Joining members in typical activities in the fields and greenhouses as well as the distribution of the harvest to the CSA members. Learning about the members’ perspective in CSAs.

Field trips require proper clothing in case of rain and low temperatures. You will receive advance notice if you need to bring lunch.

REQUIRED READING:

- Brown, Sally, Kristen McIvor and Elizabeth Hodges Snyder (eds.). Sowing Seeds in the City: Ecosystem and Municipal Services, Dordrecht: Springer, 2016.

RECOMMENDED READING:


# Grading Rubric for Student Participation

Developed by Sam Viroslav, IES Abroad San Jose Instructor

<table>
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<tr>
<th>Grade</th>
<th>Description</th>
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| **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 he or she has been capable of relating the main ideas in the readings to the other information discussed in the course, and with his or her own life experience. The student makes informed judgments about the readings and other ideas discussed in class, providing evidence and reasons. He/she respectfully states his/her reactions about other classmates’ opinions, and is capable of contributing 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 is able to construct over others’ contributions, but sometimes seems to interrupt the shared construction to go over tangents. He/she is 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. He/she tries to construct over others’ ideas, but commonly provides comments that indicate 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. |