



## **FREI-ES 304 FREIBURG GREEN CITY - SOCIAL, ECOLOGICAL AND ECONOMICAL ASPECTS OF SUSTAINABILITY**

IES Abroad Freiburg

### **DESCRIPTION:**

In this course, we will delve into the “Green City” Freiburg. Multi-faceted issues of sustainability will be presented and discussed. Environmental, economic and social aspects of sustainability will be examined equally in interdisciplinary lectures, readings and discussions. Through lectures and field trips, we will explore local projects and learn firsthand about urban planning, architecture, water and waste management, energy, mobility, green business and social innovations in Freiburg. In-class student presentations will serve as a preparation and a further discussion of the field study. These moderated in-class sessions will take both a local as well as a global perspective, and students will be expected to discuss both problems and possible solutions. The sessions build upon each other: In Week 1, students will learn the basics of sustainable cities using the example of Freiburg. Week 2 will focus on sustainable urban planning, first focusing on the important aspects of transportation and waste management. Subsequently, we will focus on sustainable planning as a whole in the last session of Week 2. In Week 3, students will explore sustainability within the surroundings of the city.

**CREDITS:** 3 credits

**CONTACT HOURS:** 45 hours

**LANGUAGE OF INSTRUCTION:** English

**INSTRUCTOR:**

**PREREQUISITES:** none

**ADDITIONAL COST:** none

### **METHOD OF PRESENTATION:**

- Lectures
- Discussions
- Exercises
- Student presentations
- Field studies

### **REQUIRED WORK AND FORM OF ASSESSMENT:**

- Course participation – 10%
- Presentation on assigned topic – 20%
- Midterm – 20%
- Own project proposal: Term Paper – 20%
- Final Exam – 30%

### **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.

### **Presentation on assigned topic – 20%**

You will be assigned to one presentation (depending on enrollment, 1-3 students per presentation), which will be held during Week 2. Each student/group is allowed approx. 15-20 minutes to present the topic and 5-10 additional minutes to facilitate a discussion with the class based on the reading for the topic, which must be read by all students. The presentation must be uploaded on Moodle by midnight on the evening before it will be held.

The presentations will focus on the basics of and aim for a mutual understanding of each assigned topic, based on examples from Freiburg. The discussions aim to provide a deeper understanding of the topic with examples outside of Freiburg. Therefore, each student/group is required to prepare the main reading for the topic and open questions to discuss with the class.

### **Midterm Exam – 20%**

The midterm will be held in week 2 in session 8 and will focus on the contents of the required readings and the classroom sessions in week 2. Question formats include structured short or long answer questions. Students will have 60 min to complete the exam.

### **Term paper on your own project proposal – 20%**

You will develop and describe your own sustainable project that you could incorporate in your hometown, your university town or at your college campus. This project proposal consists of a first draft of the final paper (contains the planned structure and most important sources as well as first thoughts and the introduction; approx. 1-2 pages / 500 words, 5% of grading), which is due at the beginning of Week 2 and the final project proposal (i.e. term paper) with a total of approximately 3-4 pages and around 1000-1500 words (contents from the first draft are included here and can be used further, 15% of grading) is due at the end of Week 3.

### **Final Exam – 30%**

The final exam will be a comprehensive assessment of all topics. Students will have 90 minutes to complete the exam in class, which will consist of essay questions dealing with topics from the entire class. Detailed instructions on the content of the final exam will be distributed in advance.

### **LEARNING OUTCOMES:**

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

- Define the foundations of environmental policy in Freiburg
- Recognize what constitutes Freiburg as a Green City
- Critically discuss initiatives and measures in and around Freiburg through first-hand experience
- Give examples of possibilities and limits regarding the transfer to other cities
- Understand the ecological, economic and social dimensions of sustainability in urban areas and define possible solutions

### **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
<b>Week 1 - Basics of sustainable cities using the example of Freiburg. Business, energy, consumption and living together</b>		
<b>Week 1</b>	<b>Session 1</b>  <b>Welcome and Introduction</b> <ul style="list-style-type: none"><li>• Welcome and Introductions</li><li>• Mind-Map exercise "Sustainable Cities"</li><li>• Introduction of the seminar and organizational issues</li><li>• Presentation of assigned topics and first ideas for own sustainability project</li></ul>	No readings for the first meeting
	<b>Session 2</b>  <b>Green City Freiburg</b> <ul style="list-style-type: none"><li>• Reflection on readings</li><li>• Lecture "Green City Freiburg"</li></ul>	<b>Required Readings:</b> <ul style="list-style-type: none"><li>• IPCC, <u>Summary for Policymakers</u>, pp. 1-34. (34 pages)</li></ul>

	<b>Green Tourism</b> <ul style="list-style-type: none"> <li>Field study or guest lecture on sustainable tourism</li> </ul>	<ul style="list-style-type: none"> <li>City of Freiburg, <u>Voluntary Local Review of the City of Freiburg 2023</u>, pp. 1-33. (33 pages)</li> <li>UN, <u>Our Common Future</u>, pp 10-24. (14 pages)</li> </ul>
	Session 3  <b>Renewable Energies</b> <ul style="list-style-type: none"> <li>Lecture: Energy consumption and climate protection concept Freiburg with insights on new climate adaptation concept</li> <li>Field study to a suitable destination in the city (such as Fraunhofer Institute; Solar Info Center and others)</li> </ul>	Required readings: <ul style="list-style-type: none"> <li>Derkenbaever et al., <u>Positive energy districts: Mainstreaming energy transition in urban areas</u>, pp 1-12. (12 pages)</li> </ul>
	Session 4  <b>Green Business and Fair Consumption</b> <ul style="list-style-type: none"> <li>Discussion of movie 'The True Cost'</li> <li>Lecture Green Business/Fair Trade</li> </ul> <b>Citizens' Participation</b> <ul style="list-style-type: none"> <li>Visit of a local social citizens' initiative 'Zuka Café'</li> </ul>	Required reading: <ul style="list-style-type: none"> <li>Grabosch, <u>The supply chain due diligence act</u>, 1-12. (12 pages)</li> <li>Ugwu and Aruma, <u>Community Participation as a Toll to Promote Sustainable Community Development</u>, pp. 1-10. (10 pages)</li> </ul> Required watching: <ul style="list-style-type: none"> <li>The True Cost (91 Min.)</li> <li>Video of Glaskiste (9:55 Min.)</li> <li>Video of Fairjeans (6:19 Min.)</li> <li>Fairtrade America, Putting Farmers on the World Map (6:43 Min)</li> </ul>
<b>Week 2 - Sustainable urban planning. From specific examples to overall planning</b>		
<b>Week 2</b>	Session 5  <b>Sustainable Transportation and Living in Freiburg</b> <ul style="list-style-type: none"> <li>Lecture on transportation and mobility</li> <li>Student presentation on assigned topics:               <ul style="list-style-type: none"> <li>Sustainable Transportation</li> <li>Alternative Housing Concepts: Cooperatives and Baugemeinschaften (joint housing initiatives)</li> <li>Climate Change in Cities and ways to adapt</li> </ul> </li> </ul>	<b>Deadline for first draft of term paper</b>  Required reading (related to each assigned topic):  Sustainable Transportation: <ul style="list-style-type: none"> <li>Miller and Mössner, <u>Urban sustainability and counter-sustainability: Spatial contradictions and conflicts in policy and governance in the Freiburg and Calgary metropolitan regions</u>, pp. 2241-2262. (21 pages)</li> </ul> Alternative Housing Concepts:

	<ul style="list-style-type: none"> <li>Field study to Vauban with insights on sustainable construction, ecological resource management, social infrastructure &amp; car-reduced mobility, renewable energy supply, urban gardening</li> </ul>	<ul style="list-style-type: none"> <li>Schmid, Fricke and Zengerling, <u>Towards a “Freiburg Model” of Housing for the Common Good? Fostering Collaborative Housing in Urban Development</u>, pp. 1-18. (18 pages)</li> </ul> <p>Climate Change in Cities:</p> <ul style="list-style-type: none"> <li>Yilmaz and Isinkaralarb, <u>Climate Action Plans Under Climate-Resilient Urban Policies</u>, pp. 140-147. (7 pages)</li> </ul>
	<p>Session 6</p> <p><b>Urban Waste Management</b></p> <ul style="list-style-type: none"> <li>Student presentation on assigned topics: <ul style="list-style-type: none"> <li>Urban Waste Management</li> <li>Circular Economy in Cities</li> </ul> </li> </ul>	<p>Required Readings (related to each assigned topic):</p> <p>Urban Waste Management:</p> <ul style="list-style-type: none"> <li>Murthy and Ramakrishna, <u>A Review on Global E-Waste Management: Urban Mining towards a Sustainable Future and Circular Economy</u>, pp. 1-18. (18 pages)</li> </ul> <p>Circular Economy in Cities:</p> <ul style="list-style-type: none"> <li>Budde Christensen, <u>Towards a circular economy in cities: Exploring local modes of governance in the transition towards a circular economy in construction and textile recycling</u>, pp. 1-12. (12 pages)</li> </ul>
	<p>Session 7</p> <p><b>Freiburg’s Sustainable Urban Planning</b></p> <ul style="list-style-type: none"> <li>Student presentations on assigned topics: <ul style="list-style-type: none"> <li>Social Problems of Urban Agglomeration</li> <li>Sustainable Urban Planning today – Best Practices from around the World</li> </ul> </li> <li>Field study to other districts (see list of possible destinations below)</li> </ul>	<p>Required readings (related to each assigned topic):</p> <p>Social Problems of Urban Agglomeration:</p> <ul style="list-style-type: none"> <li>Mulvik et al., <u>Research for REGI Committee – Social Challenges in Cities</u>, pp. 1-4. (4 pages)</li> </ul> <p>Sustainable Urban Planning today – Best Practices from around the World:</p> <ul style="list-style-type: none"> <li>Fünfgeld, Fila and Dahlmann, <u>Upscaling climate change adaptation in small- and medium-sized municipalities: current barriers and future potentials</u>, pp. 1-7. (7 pages)</li> </ul>
	<p>Session 8</p> <p><b>Midterm</b></p>	<p>The midterm will focus on the contents of the required readings and the classroom sessions in week 2.</p>
<b>Week 3 - The sustainable city and its surroundings. Forest &amp; Water management in freiburg</b>		
<b>Week 3</b>	<p>Session 9</p> <p><b>Forest Management in Freiburg</b></p>	<p>Required reading:</p> <ul style="list-style-type: none"> <li>Roman et al, <u>Beyond ‘trees are good’: Disservices, management costs, and</u></li> </ul>

	<ul style="list-style-type: none"> <li>Lecture on forest management, focusing also on conflict</li> <li>Field study to the city forest</li> </ul>	<p><u>tradeoffs in urban forestry</u>, pp. 615-630. (15 pages)</p> <ul style="list-style-type: none"> <li>Konrad Adenauer Foundation, <u>Sustainable Forest Management</u>, pp. 1-8. (8 pages)</li> </ul>
	<p>Session 10</p> <p><b>Sustainable Food Systems</b></p> <ul style="list-style-type: none"> <li>Excursion with guest lecture, either <ul style="list-style-type: none"> <li>Gartencoop or</li> <li>Ernährungsrat (Nutritional Council of Freiburg)</li> </ul> </li> </ul>	<p>Required Readings:</p> <ul style="list-style-type: none"> <li>Michel et al, <u>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</u>, pp. 1-24. (24 pages)</li> </ul>
	<p>Session 11</p> <p><b>Water management in Freiburg</b></p> <ul style="list-style-type: none"> <li>Field study to a flood management site, either <ul style="list-style-type: none"> <li>water retention basin in Günterstal or</li> <li>Dreisam River</li> </ul> </li> </ul>	<p>Required reading:</p> <ul style="list-style-type: none"> <li>Zingraff-Hamed, <u>Human–River Encounter Sites: Looking for Harmony between Humans and Nature in Cities</u>, pp. 1-20. (20 pages)</li> <li>Rajagopal, <u>What are sponge cities and how do they work?</u> (online article; 5 pp.)</li> </ul>
	<p>Session 12</p> <p><b>Final exam and evaluation</b></p> <ul style="list-style-type: none"> <li>Final exam</li> <li>Evaluation</li> </ul>	<p>Finals</p> <p>Deadline for term paper</p>

#### Field Study (list of possible destinations):

- Hotel Victoria
- Schwarzwald Tourismus GmbH
- New plus-energy town hall
- Citizens' initiative Zuka
- Freiburg's districts (one of the following, not any other without agreement of academic dean): Vauban, Rieselfeld, Dietenbach, Altstadt
- Garten Coop, a regional CSA, or Nutritional Council of Freiburg
- City Forest
- Water Retention Basin Günterstal
- Dreisam River
- Waldhaus Freiburg
- Research institution, for example Solar Info Center or Fraunhofer Institute

#### REQUIRED READINGS:

- Budde Christensen, Thomas, "Towards a circular economy in cities: Exploring local modes of governance in the transition towards a circular economy in construction and textile recycling", Journal of Cleaner Production, 305 (2021), pp. 1-12. URL: <https://doi.org/10.1016/j.jclepro.2021.127058>
- City of Freiburg, "Introduction & The City of Freiburg in the context of sustainable development", in Voluntary Local Review of the City of Freiburg 2023. Implementing the Agenda 2030 and the Sustainable Development Goals at the local level. Eds.

City of Freiburg. Freiburg: 2023, pp. 1-33. URL:

[https://www.freiburg.de/pb/site/Freiburg/get/params\\_E1560996134/2163270/VLR\\_Freiburg\\_2023\\_english.pdf](https://www.freiburg.de/pb/site/Freiburg/get/params_E1560996134/2163270/VLR_Freiburg_2023_english.pdf)

- Derkenbaever, Erkinai et al., “Positive energy districts: Mainstreaming energy transition in urban areas”, in *Renewable and Sustainable Energy Reviews*, 153 (2022). URL: <https://doi.org/10.1016/j.rser.2021.111782>
- Gabosch, Robert, “The supply change due diligence act”, in *Perspective. Friedrich-Ebert-Stiftung*, (2021), pp. 1-12. URL: <https://library.fes.de/pdf-files/iez/18755.pdf>
- Fünfgeld Hartmut, Fila, Dennis and Dahlmann, Heindrichen, “Upscaling climate change adaptation in small- and medium-sized municipalities: current barriers and future potentials”, *Current Opinion in Environmental Sustainability*, 61 (2023), pp. 1-7. URL: <https://doi.org/10.1016/j.cosust.2023.101263>
- Intergovernmental Panel on Climate Change (IPCC), “Summary for Policymakers”, in *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Eds. Hoesung Lee and José Romero. Geneva: 2023, pp. 1-34. URL: [https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC\\_AR6\\_SYR\\_SPM.pdf](https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf)
- Algermißen, André: “Sustainable Forest Management”, in *Konrad Adenauer Foundation. Monitor Sustainability*, 5 (2021), pp. 1-8. URL: <https://www.kas.de/documents/252038/11055681/Sustainable+forest+management.pdf/443dc88e-3785-eaf7-c691-50017d2b3471>
- 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), pp. 1-24. URL: <https://doi.org/10.3389/fsufs.2022.916178>
- Miller, Byron and Mössner, Samuel, “Urban sustainability and counter-sustainability: Spatial contradictions and conflicts in policy and governance in the Freiburg and Calgary metropolitan regions”, in *Urban Studies*, 57/11 (2020), pp. 2241-2262. URL: <https://doi.org/10.1177/0042098020919280>
- Mulvik, Iselin et al., “Research for REGI Committee – Social Challenges in Cities”, in *Executive summary - European Parliament. Policy Department for Structural and Cohesion Policies*, (2022), pp. 1-4. URL: [https://www.europarl.europa.eu/RegData/etudes/STUD/2022/699631/IPOL\\_STU\(2022\)699631\(SUM01\)\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2022/699631/IPOL_STU(2022)699631(SUM01)_EN.pdf)
- Murthy, Venkatesha and Ramakrishna, Seeram, “A Review on Global E-Waste Management: Urban Mining towards a Sustainable Future and Circular Economy”, in *Sustainability*, 14/647 (2022), pp. 1-18. URL: <https://doi.org/10.3390/su14020647>
- Rajagopal, Aditi, “What are sponge cities and how do they work?”, *Deutsche Welle*, 3 January 2024. URL: <https://www.dw.com/en/what-are-sponge-cities-and-how-do-they-work/a-68407366>
- Roman, Lara A. et al, “Beyond ‘trees are good’: Disservices, management costs, and tradeoffs in urban forestry”, in *Ambio*, 50 (2021), pp. 615-630. URL: <https://doi.org/10.1007/s13280-020-01396-8>
- Schmid, Benedikt, Fricke, Carola and Zengerling, Cathrin, “Towards a “Freiburg Model” of Housing for the Common Good? Fostering Collaborative Housing in Urban Development”, in *Urban Planning*, 9 (2024), pp. 1-18. URL: <https://doi.org/10.17645/up.8191>
- Ugwu, Anthonia and Aruma, E.O., “Community Participation as a Tool to Promote Sustainable Community Development”, in *International Journal of Community and Cooperative Studies*, 7/1 (2019), pp.1-10. URL: <https://www.eajournals.org/wp-content/uploads/Community-Participation-as-a-Tool-for-the-Promotion-of-Sustainable-Community-Development.pdf>
- Yilmaz, Dilara and Isinkaralarb, Oznur, “Climate Action Plans Under Climate-Resilient Urban Policies”, in *Kastamonu University Journal of Engineering and Sciences*, 7/2 (2021), pp. 140-147. URL: <https://dergipark.org.tr/en/pub/kastamonuies/issue/66389/1014599>
- Zingraff-Hamed, Aude, “Human–River Encounter Sites: Looking for Harmony between Humans and Nature in Cities”, in *Sustainability* 13/2864 (2021), pp. 1-20. URL: <https://doi.org/10.3390/su13052864>

#### Required watching (accessible on Moodle):

- Andrew Morgan, *The True Cost*, 2015. (91 minutes)
- Innovation Academy, *Video of Glaskiste*. (9:55 minutes)
- Innovation Academy, *Video of Fairjeans*. (6:19 minutes)
- Fairtrade America, *Putting Farmers on the World Map*. (6:43 minutes)

## Appendix:

### Rubric for course participation:

<b>A</b>	<b>Excellent participation</b> 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>B</b>	<b>Very good participation</b> 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.
<b>C</b>	<b>Regular participation</b> 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.
<b>F</b>	<b>Insufficient participation</b> 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.