



ES 300 - ECOLOGY AND MANAGEMENT OF FOREST LANDSCAPES IN SOUTHWEST GERMANY AND THE SWISS ALPS

IES Abroad Freiburg

DESCRIPTION:

Students will be introduced to the ecology and management of typical forest landscapes in Southwest Germany and the Swiss Alps. Along an elevational gradient, students will study flood plain forests in the Rhine valley, mountain forest ecosystems in the Black Forest and alpine forests in the Swiss Alps. Students will analyze the structure and dynamics of typical forest ecosystems of Central Europe. They will learn to understand that current forest landscapes are a result of the interaction between natural and anthropogenic factors on various scales in time and space. The course includes several one-day excursions, field trainings and a three-day field study trip to the Swiss Alps.

CREDITS: 3 credits

CONTACT HOURS: 45 hours

LANGUAGE OF INSTRUCTION: English

PREREQUISITES: Basic knowledge of ecology/natural resource management

ADDITIONAL COST: none

METHOD OF PRESENTATION:

The course will be a combination of lectures, contributions of students (presentations), discussions and several field study trips.

REQUIRED WORK AND FORM OF ASSESSMENT:

- Course participation – 10 %
- Short presentation – 20 %
- Field Trip Reports – 50 %
- Learning Journal – 20 %

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.

Short presentation – 20 %

You will be assigned to one presentation (depending on enrollment, 1-3 students per presentation) with assigned literature. Each student/group is allowed approx. 10-15 minutes to present the topic and 5-10 additional minutes to facilitate a discussion with the class. 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. The discussions aim to provide a deeper understanding of the topic with examples.

Field Trip Reports – 50 %

After each field trip, students are required to write two short (250-500 words) reflection papers that review what they have learned and critically relate it to the course content.

Learning Journal – 20 %

Entries are directed assignments that require students to reflect on their experience in class, readings, and excursions. Journal entries (600 words) are to be completed by the due date and sent via email.

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LEARNING OUTCOMES:

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

- Utilize methods to analyze the structure and dynamics of forest ecosystems.
- Explain historical and current forest management practices in Central Europe.
- Interpret current forest landscapes as a result of the interactions between natural and anthropogenic factors.
- Assess regional concepts of nature protection and nature reserves.
- Evaluate ecological risks and opportunities under changing environmental conditions (eg., climate change, nitrogen emissions).
- Communicate the gained knowledge in oral (short presentation, discussions) and written form (field report, learning journal).

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	Session 1: Introduction Ecology and Management	preparatory readings: - Ellenberg, <u>Vegetation</u>, pp. 1-13. - Pro Silva, <u>Brochure</u>, pp. 1-12.
	Session 2: Introduction to the (bio)geography of Southwest Germany and assignment of readings and topics for short presentations	Spiecker, <u>Silvicultural management</u>, pp. 55-65.
	Session 3: Field trip to the University Forest: Conversion of conifer monocultures into mixed species forests	
	Session 4: Introduction to the Ecology and Management of typical mountain forest ecosystems in the Western Black Forest	
	Session 5: Field trip to "Schauinsland". Hiking tour* through various forest ecosystems along an elevational gradient	
Week 2	Session 6: Introduction to the ecology and management (EM) of lowland forests in the Upper Rhine Valley	
	Session 7: Writing reports and learning journal / Field trip* to various riparian ecosystems in the Upper Rhine Valley	Brang et al., <u>Management of protection forests</u>, pp. 23-44.
	Session 8: Student presentations I and II	- Ellenberg, <u>development of the plant cover</u>, pp. 14-42. (Group I) - Spiecker, <u>Silvicultural management</u>, pp. 55-65. (Group II)
	Session 9: Student presentations III and IV	Brang et al., <u>Management of protection forests</u>, pp. 23-44. (Group III)

		Lindner et al., <u>Climate Change and European Forests</u>, pp. 69-83. (Group IV)
	Session 10: Current challenges for EM of forests in Central Europe (including Field trip* to the ecosystem case study Conventwald)	
Week 3	Session 11: Introduction to the (bio)geography of the Swiss Alps	V. Wilpert et al., <u>To what extent</u>, pp. 105-120.
	Session 12: Excursion to the Swiss Alps Dynamics in an alpine virgin forest	
	Session 13: Excursion to the Swiss Alps Management of alpine protection forests	
	Session 14: Excursion to the Swiss Alps Nature conservation in Alpine forests and climate change	
	Session 15: Concluding discussion & course evaluation	Finalizing report and learning journal.

COURSE-RELATED TRIPS:

- Black Forest
- Schauinsland
- Kaiserstuhl
- Swiss Alps

REQUIRED READINGS:

- Ellenberg, Heinz. Vegetation ecology of Central Europe. 4th edition. Cambridge: Cambridge Univ. Press, 2009.
 - "The vegetation of Central Europe in general", pp. 1-13.
 - "The development of the plant cover under the influence of man", pp. 14-42.
- Brang, P. et al. "Management of protection forests in the European Alps: an overview", in Forest Snow and Landscape Research, 80/1, (2006), pp. 23-44.
- Pro Silva (1999): Brochure "close to nature forest management". PRO SILVA: European federation of foresters advocating forest management based on natural processes (ed.), 1-12. <http://www.prosilvaeurope.org>
- Spiecker, Heinrich. "Silvicultural management in maintaining biodiversity and resistance of forests in Europe - Temperate zone", in Journal of Environmental Management, 67/1, (2003), pp. 55-65.
- Lindner, Marcus et al. "Climate Change and European Forests: What do we know, what are the uncertainties, and what are the implications for forest management?", in Journal of Environmental Management, 146 (2014), pp. 69-83.
- V. Wilpert, Klaus, Zirlewagen D. and Martin Kohler. (2000): "To What Extent Can Silviculture Enhance Sustainability of Forest Sites under the Imission Regime in Central Europe?", in Water, Air and Soil Pollution, 122/1, (2000), pp. 105-120.

RECOMMENDED READINGS:

- Ellenberg, Heinz. Vegetation ecology of Central Europe. 4th edition. Cambridge: Cambridge Univ. Press, 2009.
 - "General view of the Central European woodlands", pp. 43-70.

- “Beech and mixed Beech woods”, pp. 71-138.
- “Other deciduous woodland excluding flood plains and mires”, pp. 139-190.
- “Tree and shrub vegetation of flood plains and peat lands”, pp. 243-282.
- Heinrich Spiecker, Jörg Hansen, Emil Klimo, Jens Peter Skovsgaard, Hubert Sterba and Konstantin von Teuffel. Norway spruce conversion – Options and consequences. EFI Research Report 18. Leiden, Boston, Köln: Brill, 2004.
- Pommering, A. “A review of the history, definitions and methods of continuous cover forestry with special attention to afforestation and restocking”, in Forestry, 77/1 (2004), pp. 27-44.
- Schumacher, Sabine and Harald Bugmann. “The relative importance of climatic effects, wildfires and management for future forest landscape dynamics in the Swiss Alps”, in Global Change Biology, 12/8 (2006), pp. 1435-1450.

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.