

Syllabus of Record

Program: CET Prague

Course Code / Title: (PR/ENVR 315) Environmental Challenges and Nature Conservation in Central Europe

Contact Hours: 45

Recommended Credits: 3

Primary Discipline / Suggested Cross Listings: Environmental Studies / Central European Studies

Language of Instruction: English

Prerequisites / Requirements: None

Description

Long-term human land-use in central Europe gives rise to serious environmental challenges such as pollution, deforestation and land-use change leading to fragmentation and degradation of natural habitats, landscape drainage, loss of landscape connectivity due to the continuous building of linear transport constructions, etc. The result is a serious threat for natural biodiversity, ecosystem functioning and services, and, ultimately, the sustainable development of human society in central Europe. Ongoing climate change makes these challenges even more difficult to address. This course focuses on these environmental challenges and their possible solutions from the perspective of inhabitants of central Europe. The roles of various social, political and economic factors for defining and finding applicable solution are widely discussed. The local Prague environment is used as a classroom for documenting efforts towards nature restoration and biodiversity protection within the city.

Objectives

At the end of the course, students will be able to:

- Identify the main environmental problems in central Europe and describe their causes and consequences.
- Explain the reasons for nature and landscape protection from perspective of various disciplines (ecology, economy, psychology, sociology, etc.).
- Understand extant tools for effective measures to eliminate negative consequences of environmental problems at the local (Prague/Czech), regional (central Europe) and continental (EU) level.
- Conceptualize ways to transfer science evidence into policy instruments.

Course Requirements

Active participation is essential in this course. Students are expected to attend each class and field study course component, as outlined in the CET Attendance Policy. Students are expected to read all assigned materials before the relevant class session and come prepared to participate thoughtfully in class discussions. Reading assignments are generally comprised of one policy document (around 30 pages) or scientific paper (around 10 pages) per class session. The policy documents are typically longer, but quite easy to understand, whereas the scientific papers are shorter, but require more attention and focused thought.

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Graded assignments:

- **Homework:** Reading reflections: reading 3 policy documents and 3 scientific papers over the course of the semester. Students will submit short reflections on the readings (as homework) that will be graded. Additionally, these reflections will be used as notes for plenary discussion at the beginning of the lesson.
- **Quizzes:** 3 short quizzes to test students' comprehension of the readings.
- **Presentation:** 10 minutes, with 5 minutes for questions, using an element of the local context to illustrate concepts discussed in an assigned reading.
- **Final paper:** 8-10 pages on a topic determined in consultation with the instructor.

Class Participation Grading Rubric

	A – 90-100% Exemplary	B – 80-89% Proficient	C – 70-79% Developing	D – 60-69% Unacceptable	F – 0-59% Missing
Frequency of class participation	Actively contributes always or almost always	Actively contributes during most of the classes	Actively contributes at least half of the time during term	Actively contributes less than half of the time during term	Does not contribute
Quality of class participation	Contribution is always insightful and constructive	Contribution is mostly insightful and constructive	Contribution is somewhat insightful and constructive	Contribution is rarely insightful and constructive	Does not contribute
Level of class preparation	Always fully prepared and on task	Mostly prepared and on task	Somewhat prepared and on task	Rarely prepared and on task	Consistently unprepared and not on task

Grading

The final grade is determined as follows:

- Participation 20%
- Homework (6 at 3.33%) 20%

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- Quizzes (3 at 6.66%) 20%
- Presentation 10%
- Final Paper 30%

Readings

EU Biodiversity strategy for 2030, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52020DC0380>

Guidelines for defining, mapping, monitoring and strictly protecting EU primary and old-growth forests, https://environment.ec.europa.eu/publications/guidelines-defining-mapping-monitoring-and-strictly-protecting-eu-primary-and-old-growth-forests_en

Keith H., et al., 2024. Carbon carrying capacity in primary forests shows potential for mitigation achieving the European Green Deal 2030 target. *Communications Earth and Environment* 5, 256.

Lindenmayer D.B., Laurance W.F., 2012. A history of hubris – Cautionary lessons in ecologically sustainable forest management. *Biological Conservation* 151, 11-16.

Nature restoration law, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1991&qid=1722240349976>

Van Meerbeek K., et al., 2019. Reconciling conflicting paradigms of biodiversity conservation: human intervention and rewilding. *BioScience* 69, 997-1007.

Outline of Course Content

Most topics addressed in class are supplemented by field visits to relevant locations (city parks with various natural habitats and restoration measures, dendrochronological laboratory, etc.). One to three weeks is spent on each of the below areas. For all questions and topics there is also some consideration of the implications within the context of the Czech Republic.

Topic 1 – Environment in central Europe in the 21st century

- Main environmental issues and challenges
- Possible solutions (national and EU level)
- EU Green Deal and relevant documents
- Human perception: rational decision making or unconscious attitudes?

Topic 2 – Environment in central Europe in the past

- Postglacial development of nature and human society
- Changes in human imprint on nature and environment at local and regional scales

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- Changes in perception of wild nature by human society
- Problem of shifting baseline syndrome

Topic 3 – Climate change as a reality: what can we do?

- Recent changes and prediction of climate in central Europe
- Adaptation and mitigation options
- Cultural and sociological consequences

Topic 4 – Biodiversity crisis in Europe: causes, current state and possible solutions

- Examples of biodiversity losses with causes and consequences
- Habitat and species protection in the EU
- EU Biodiversity strategy and Nature restoration law
- Cultural and sociological consequences

Topic 5 – Habitat and species protection in the EU

- Natural habitats, and animal and plant species under EU protection
- EU Biodiversity strategy and Nature restoration law
- Protection of wildlife areas and concept of rewilding
- Cultural and sociological consequences

Topic 6 – Forestry in central Europe in 21st century: How to combine forest management and nature conservation to support biodiversity and other ecosystem services?

- Concept of ecological forestry, close-to-nature forest approaches
- Forest certifications
- Mapping and protection of primary and old-growth forests (REMOTE database)
- Problems of pests (bark beetle outbreaks) and invasions
- Case study Czechia: what is currently being done and what is being planned?

Topic 7 – Forestless landscape in central Europe in 21st century: Exploitation and drainage of the landscape and how to facilitate its recovery?

- Detrimental effects of modern agriculture and land-use on biodiversity
- Landscape drainage and its consequences
- Water ecosystems
- Decline in pollinators and options to recovery
- Animals as ecosystem engineers
- Case study Czechia: what is currently being done and what is being planned?