

# CESTA

## Memory of the Land: Ecology

**Lecturer:** Jolana Turečková, Ph.D.

**Contact:** [turejo@img.cas.cz](mailto:turejo@img.cas.cz)

**Consultations:** by appointment

### **Course description:**

Living organisms and their nonliving environment are inseparably interrelated. Organisms form communities and interact with the physical environment in given areas. All that creates an ecological system or *ecosystem*. The course on environmental science will provide students with fundamentals of ecology as set up years ago by Eugene P. Odum and updated by other authors. It will be conducted at two different levels - the one focused on global view of mechanisms functioning throughout the entire biosphere and the other as a detailed insight into different ecosystems. The global issues will be discussed at classes given weekly and the detailed principles will be shared with students at interactive field trips that will take the students to particular biotopes that include fauna and flora specific to central Europe. Some trips will be organized together with other teachers engaged in the CESTA project so that the students get to understand, for instance, the role of politics or architecture in modifying the Czech lands in the past and at present.

### **Course objectives:**

The students will be given fundamentals in ecology based on ideas of E.P.Odum and his followers. At the end of the course they should comprehend the terms ecosystem, biosphere and environment. They should be also able to use the terminology of this field at appropriate social, political and historical contexts and subsequently present their objective opinions about the ongoing events in the central Europe as well as on the entire planet. Since the common goal of the CESTA project is to bring a scent of the Czech Language to the students, some chosen terms and species nomenclature will be given in both English and Czech languages for comparison.

### **Course Schedule:**

#### **I. Building up CESTA: Roads and Pathways, Transitions and Alternatives**

##### ***Week 1***

Orientation in Prague surroundings, issues of travelling in the Czech Republic, definition of an origin of the Czech landscapes and nature.

#### **II. European and Global Contexts**

##### ***Week 2***

*Organism, population and environment: What adapts to what? Defining an individual and species. Population and food chains, biocenosis, its succession and climax, biotic and abiotic limits for survival will be discussed.*

### **Week 3**

*Major ecosystems around the world and in the Czech Republic. Natural and artificial ecosystems. Phytogeographic and zoogeographic rules in history and nowadays reality.*

## **III. Ideas and Ideologies: Church, Nation, State and Totalitarian systems, World Heritage Towns and Vanished Villages**

### **Week 4**

*Middle Ages, human and migration. Read-outs of paleontology, early, historical and modern migration of peoples. Ecology and crusading. Modern abandoning countryside.*

### **Week 5**

*Nature as a chemical lab: Temperature, light, water and oxygen rule the life.*

## **IV. Central Europe in its Diversity: Transitions and Alternatives, Contacts and Conflicts; Czechs and their Neighbors**

### **Week 6**

*Cities and agglomeration. Cities as utterly artificial system. Synantropic and invasive species. Strictly one-way matter and energy flow and the hinterland change.*

## **Cesta to Harz**

### **Week 7**

*... and then, nothing was left: Saving genetic variability. Need for keeping current biodiversity on the planet. Natural methods of preserving; reintroduction, in situ and ex situ protection of species.*

## **V. REVIEW: Basic concepts and boundaries; Planning integrative projects**

### **Week 8 Spring Break**

### **Week 9**

*Drinking water: Talks and walks to understand role of a translucent Mother of life. Oceans: The start and the end point.*

## **VI. Revolution and Social Change**

### ***Week 10***

*Energy and food sources: Dying planet or a point for a radical change of approaches?*

### **Cesta to the East of Bohemia**

### ***Week 11***

*The Cradle: Is it going to be flooded and drowned? Is a green house effect a real threat? Prognosis and ways to prevent it.*

## **VII. From Institutions and Legal Framework to a new revolt and individualization**

### ***Week 12***

*International conventions on environment (UNESCO, Ramsar, Kyoto Protocol, UN Convention on Climate Change etc.).*

### **Cesta to Cracow**

## **VIII. Memory and Forgetting; Biographies and oral history**

### ***Week 13***

*Civilization: Awesome prognosis or evolution breakpoints? Globalization; women, environment and sustainable development. Religion and environmentalism. Celebrities in environmental science.*

## **IX. Landscapes: Real and Imaginary**

### ***Week 14***

*National reserves and parks in the Czech Republic and worldwide: Does their foundation mirror natural environment of the various countries?*

## **X. CESTA at its End: What's Next on the Road? Transitions and Alternatives of the Future**

### ***Week 15***

*Therapy for the sick Globe*

### ***Presenting students' integrative projects***

### **Prague on the Go to (field trips):**

- Jílové u Prahy
- Revitalization sites around Prague

- Šumava mountains
- Harz

## Grading

Attendance is mandatory. Missing more than one class during the semester is going to impede your progress and affect your grade. The grade for the semester is going to be determined on the basis of:

- Occasional quizzes (25%)
- Midterm test (10%)
- Interdisciplinary project (40%)
- Diary/portfolio (25%)

## Required readings:

- Odum, E.P. (1971): Fundamentals of Ecology, Saunders.
- Odum, E.P., Brewer, A. and Barret, G.W. (2004): Fundamentals of Ecology, 5<sup>th</sup> Ed., Cengage Learning.
- Lomborg, B. (2001): The Sceptical Environmentalist, Cambridge University Press.
- Miller, G.T. and Spoolman, S. (2008): Sustaining the Earth: an integrated approach, Cengage Learning.
- <http://www.czechtourism.com/eng/uk/docs/holiday-tips/romantic-holiday/reasons-why/07-nature/>

The list will be expanded during the course.