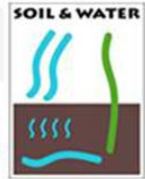


Teacher	Dr. Tomáš Pícek
Contact	University of South Bohemia, Department of Ecosystem Biology picek@prf.jcu.cz
Lectures	Wetland ecology Constructed wetlands
Key words	Wetlands, wetland ecology, constructed wetlands, wetland biogeochemistry, climate change, carbon sink, flooded soil, wastewater treatment
Learning objectives	The students will - get basic information about wetland ecology - learn about importance, functioning and types of wetlands - understand the biotechnology called "constructed wetlands" which is used for water treatment - know under which conditions it is suitable to use constructed wetlands for water treatments, what types of wastewater is possible to clean and how to build such systems - learn at least one method used in wetland ecology to characterize wetland ecosystem (like its state and functioning) - study how to work on one specific topic of wetland ecology and how to evaluate and present the data obtained by their own measurements
Main subjects	- definition of wetlands - importance of wetlands as natural systems, as carbon sink and source of biodiversity - importance of wetlands from human perspective - typical wetland features, characteristics and basic types of wetlands - effect of hydrology on wetlands functioning - biogeochemical processes and characteristics typical for wetlands - vegetation typical for wetlands and its adaptations to flooded soil - definition, types and functioning of constructed wetlands (CW) - building of CWs - management and maintenance of CWs - advantages and disadvantages of CWs - examples of CWs from whole world

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**Relevance to
EduSaPMan**

Wetlands are unique ecosystems which are interconnecting terrestrial and aquatic ecosystems - thus both key words "soil" and "water" of the title of Erasmus+ programme are included within the topic. The wetlands include the characteristics of aquatic and terrestrial ecosystems and thus they are like model ecosystems which allow us to show the differences between aquatic and terrestrial ecosystems. The lectures demonstrate special interactions of soil, water and vegetation within wetland ecosystem which can also be used as biotechnology for water treatment purposes. The lectures help students to understand the importance of soil in global carbon cycling and their effect on climate change. The lectures are closely connected especially to the lectures on microbial processes in soil, wetlands and carbon fluxes and wetlands restoration.

**Recommended
literature**

Mitsch, J.W., Gosselink, C.T. 2007. Wetlands. John Wiley and Sons, Inc. Hoboken, New Jersey.
Reddy, R., DeLaune, R.D. 2008. Biogeochemistry of Wetlands. CRC Press, Taylor & Francis Group.
Rydin, H., Jeglum, J. 2006. The Biology of Peatlands. Oxford University Press.
Vymazal, J., Kropflová, L. 2008. Wastewater Treatment in Constructed Wetlands with Horizontal Sub-Surface Flow. Springer.