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Lectures	Microbial processes in soils
Key words	Soil microorganisms, microbial physiology, microbial growth, enzymes, environmental factors, carbon, nitrogen and phosphorus transformations
Learning objectives	- to show structural and functional diversity of soil microorganisms - to elucidate main factors affecting microbial processes in soil - to explain carbon transformation in soil with a main focus on the role of key players and wood web - to explain nitrogen and phosphorus transformations in soil
Main subjects	- composition of microbial community - microbial growth in aerobic and anaerobic conditions - ecological stoichiometry - anaerobic food chain - soil enzymatic activity - key environmental factors affecting biological transformations in soils - carbon transformations, substrate availability and soil food web - nitrogen transformations, N availability gradient in soils - phosphorus transformations and availability in soils
Relevance to EduSaPMan	The lecture will give a theoretical background of soil processes and the effect of environmental conditions on C and nutrient transformations and fluxes in the soil. The knowledge will substantially improve the understanding of the topics presented in related subjects like Wetland Ecology, Wetland C flux, Soil Degradation and Soil Zoology. In addition, it facilitates to link and combine the knowledge of the above subjects.
Recommended literature	RM Maier, IA Pepper and CP Gerba. Environmental microbiology. Vol. 397. Academic press, 2009. EA Paul. Soil microbiology, ecology and biochemistry. Academic press, 2014.