

Subject name	Protection of Soils and Geological Heritage	
Subject code	R.9sX.PSG.SM.ROSAY	
Department	Soil Science and Soil Protection	
Faculty	Agriculture and Economics	
Subject supervisor/Lecturer	Profesor Krystyna Ciarkowska	
General information	semester	summer
	ECTS credits	3
	Lectures total	10 hrs
	Laboratories/classes	10/5 hrs
Objective and general description	<p>The main objective of the course is to promote students awareness of the importance of geological heritage conservation and soil protection, based on assessment of landscape conditions, susceptibility of soils to degradation and restoration of degraded soils as well as familiarize them with legislation on soil protection</p> <p><u>Lectures</u></p> <ol style="list-style-type: none"> 1. Geological heritage in Poland: its threats and forms of protection. 2. The Geosites net and proposals of the European Geoparks on the area of Poland. 3. Multifunctional role of soils in the environment. Basic terms related to soil protection and conservation. 4. Threats of soils in Poland, types and causes 5. Soil erosion. 6. Physical deterioration of soils, geotechnical deformations. 7. Chemical degradation – soil acidification and pollution with organic and inorganic materials 8. Biological degradation – organic matter decline 9. Legislation on soil protection. 10. Basis of soil reclamation. <p><u>Laboratories</u></p> <ol style="list-style-type: none"> 1-5. Properties of soils with different resistance against degradation processes: determinations of organic carbon, pH values and grain size distribution. 6-7. Buffer capacities determination. 8-9. Determination of cation exchange capacities. 10. Analysis of results and summary. <p><u>Field classes</u></p> <p>Visit to Ojców National Park to examine geological monuments and values of landscape.</p>	
Assessment method	Evaluation of student presentations, written exam, written report from field classes	
References	<ol style="list-style-type: none"> 1. Troeh F. R. Soil and water conservation : productivity and environmental protection, New Jersey, 1999. 2. Haan F., Reynweld M.I.V. Soil pollution and soil protection, International Book Distributing Co, 2004. 3. Mirsal I.A. Soil Pollution: Origin, Monitoring & Remediation, 	

	<p>Springer Verlag, 2009.</p>
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4. Unger P.W. Soil and Water Conservation Handbook: Policies, Practices, Conditions and Terms, Haworth Pr Inc, 2006.