



Module syllabus: *Remediation of degraded lands*

1. Overall information

Module coordinator	dr Monika Jędrzejczyk-Korycińska
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ECTS	5
Method for the verification of learning outcomes	<p>The final grade for the module is weighted on the average of the following student activities:</p> <ul style="list-style-type: none">- participating in field trips and preparing a short essay (0.3)- participating in classes (continuous evaluation of knowledge, activity and tests) (0.4)- Written final exam (0.3) <p>To be awarded a final grade, the student must have passed each activity of the module and participate in at least 80% of the classes</p> <p>Grades: below 51% – fail (F); 52-60% – with minimum academic criteria (E); 61-65% – satisfactory (D); 66-75% – good (C); 76-85% – very good (B), ≥ 85% – excellent (A)</p>

2. Description of student activity and work

Lecture/discussion sessions	
Responsible instructors	dr hab. prof. UŚ Adam Rostański, dr hab. Agnieszka Kompała-Bąba, dr hab. Izabella Franiel, dr Dominik Chłond
Content	<p>The main objective of this module is to acquaint students with the problems connected with the degradation of lands caused by the mining industry and the processing of ores and hard coal, methods for the remediation of post-industrial areas also including natural processes, as well as the biodiversity of the plants and animals of the degraded areas. Lectures/discussion sessions comprise the basic ecological knowledge of the remediation of degraded lands including natural processes, the biodiversity of such areas and some aspects of legal regulation.</p> <p>Lecture/discussion session content: Causes and effects of the degradation of different elements of the environment, classification of degraded and devastated lands, various methods of restoration/reclamation and management of anthropogenically transformed areas, natural processes that occur in industrial areas as well as the possibilities of shaping and creating habitats in degraded areas using the appropriate plants and animals species. Knowledge of the basic methods of the reclamation and revitalisation of degraded areas corresponds with the fundamental principles of Polish law and the implemented EU law.</p>
Number of didactic hours (contact hours)	15
Literature	Wong M.H. et al. (eds.) 1999. Remediation and Management of Degraded Lands.





	Lewis Publishers Boca Raton, London, New York, Washington, D.C. Russell D.L., 2011. Remediation Manual for Contaminated Sites. CRC Press Taylor & Francis Group, Boca Raton.
	Maciak F. 1999. Ochrona i rekultywacja środowiska. SGGW, Warszawa Karczewska A. 2008. Ochrona gleb i rekultywacja terenów zdegradowanych. Wydawnictwo Uniwersytetu Przyrodniczego, Wrocław. Greszta J., Morawski S. 1972. Rekultywacja nieużytków przemysłowych. Państwowe Wydawnictwo Rolnicze i Leśne, Warszawa, s. 21–23 Gilbert O.L., Anderson P. 1998. Habitat Creation and Repair. Oxford Univ. Press, Oxford Inżynieria Ekologiczna 1. Ochrona i rekultywacja gruntów 2000. PTIE, Wyd. Ekoinżynieria, Lublin. Rule J. 1994. Problemy nauki o ochronie środowiska. Wyd. Uniw. Marii Curie-Skłodowskiej, Lublin Gasidło K. 1998. Problemy przekształceń terenów przemysłowych. Wyd. Politechniki Śląskiej, Gliwice Land Contamination and Reclamation. EPP Publications (wybrane artykuły)

Laboratory	
Responsible instructors	Dr Monika Jędrzejczyk-Korycińska, dr hab. Agnieszka Kompała-Bąba, dr hab. Izabella Franiel, dr Dominik Chłond
Laboratory projects	Field trip 1 – degraded lands connected with the extraction and processing of heavy metals: Miasteczko Śląskie, Tarnowskie Góry Hałda Dolomitowa, Tarnowskie Góry Segiet, Bytom Żabie Doły, Świętochłowice Chropaczów. Field trip 2 – degraded lands connected with the extraction and processing of hard coal: Katowice Murcki KWK „Murcki-Staszic”, Katowice Kostuchna „KWK Boże Dary”, Ruda Śląska Halemba zwał „Borowa I”, Mikołów zwał „Borowa II”, Ruda Śląska – Zabrze KWK „Bielszowice”
Methodology of laboratory classes	Field courses during which students will become familiar with degraded areas of different origins and habitat conditions, methods of their reclamation and the biodiversity of degraded lands. Students will prepare a short essay related to the activities that are carried out in the subject areas and verify the information that they have obtained from the literature with actual conditions.
Number of didactic hours (contact hours)	20
Literature	Wong M.H. et al. (eds.) 1999. Remediation and Management of Degraded Lands. Lewis Publishers Boca Raton, London, New York, Washington, D.C. Russell D.L., 2011. Remediation Manual for Contaminated Sites. CRC Press Taylor & Francis Group, Boca Raton. Maciak F. 1999. Ochrona i rekultywacja środowiska. SGGW, Warszawa Karczewska A. 2008. Ochrona gleb i rekultywacja terenów zdegradowanych. Wydawnictwo Uniwersytetu Przyrodniczego, Wrocław. Greszta J., Morawski S. 1972. Rekultywacja nieużytków przemysłowych. Państwowe Wydawnictwo Rolnicze i Leśne, Warszawa, s. 21–23 Gilbert O.L., Anderson P. 1998. Habitat Creation and Repair. Oxford Univ. Press, Oxford Inżynieria Ekologiczna 1. Ochrona i rekultywacja gruntów 2000. PTIE, Wyd. Ekoinżynieria, Lublin. Rule J. 1994. Problemy nauki o ochronie środowiska. Wyd. Uniw. Marii Curie-





	Skłodowskiej, Lublin Gasidło K. 1998. Problemy przekształceń terenów przemysłowych. Wyd. Politechniki Śląskiej, Gliwice Land Contamination and Reclamation. EPP Publications (chosen articles) Ecological Engineering, Elsevier Publications (chosen articles) Archives of Environmental Protection (chosen articles)
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Classes (Seminar)

Responsible instructors	Dr Monika Jędrzejczyk-Korycińska
Projects	Student projects on the remediation of post-industrial areas
Methodology of classes	Students will prepare PowerPoint presentations on the reclamation of post-industrial areas
Number of didactic hours (contact hours)	10
Literature	Wong M.H. et al. (eds.) 1999. Remediation and Management of Degraded Lands. Lewis Publishers Boca Raton, London, New York, Washington, D.C. Russell D.L., 2011. Remediation Manual for Contaminated Sites. CRC Press Taylor & Francis Group, Boca Raton. Greszta J., Morawski S. 1972. Rekultywacja nieużytków przemysłowych. Państwowe Wydawnictwo Rolnicze i Leśne, Warszawa, s. 21–23 Gilbert O.L., Anderson P. 1998. Habitat Creation and Repair. Oxford Univ. Press, Oxford Inżynieria Ekologiczna. Ochrona i rekultywacja gruntów. PTIE, Wyd. Ekoinżynieria, Lublin. Rule J. 1994. Problemy nauki o ochronie środowiska. Wyd. Uniw. Marii Curie-Skłodowskiej, Lublin Gasidło K. 1998. Problemy przekształceń terenów przemysłowych. Wyd. Politechniki Śląskiej, Gliwice Land Contamination and Reclamation. EPP Publications (chosen articles) Ecological Engineering, Elsevier Publications (chosen articles) Archives of Environmental Protection (chosen articles)

3. Forms of verification

Continuous evaluation of knowledge, activity and practical skills	
Grades	Grades are awarded on a scale of A-F, where A is the best and F is a fail. <u>An excellent performance (A)</u> – the student actively participates in classes, demonstrates an excellent understanding of the given problems connected with degradation of lands and methods for their reclamation <u>A good performance (C)</u> – the student demonstrates good judgment and knowledge, correctly performs an experiment, correctly exhibits a sense of the experimental procedure, properly assesses and presents the experimental results.





	<p><u>A satisfactory performance (E)</u> – the student demonstrates satisfactory judgment and knowledge, is poorly engaged and needs additional help to finish the experiment and final assessment of the experimental results correctly, presents satisfactory presentation of experimental results.</p> <p><u>A performance that does not meet the minimum academic criteria (F)</u> – the student is not engaged in the experiment, does not exhibit a sense of experimental procedures, poorly interprets and presents the experimental results.</p>
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Reports from realised laboratory projects

Evaluation	<p>Student will prepare a short essay that is evaluated in terms of the quality of the assessment and presentation of published material, use of reference materials. Grades for essays are awarded on a scale of A-F, where A is the best and F is a fail. An excellent report (A) – without any essential errors Fail (F) – no report</p>
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Projects realised during classes

Evaluation	<p>Students will prepare a project for the remediation of degraded land. In the evaluation of the project, the following are taken into consideration: the purpose of the project, use of appropriate remediation methods and their appropriateness, the innovation of the project and its costs as well as the conclusions. Evaluation comprises judgment and knowledge related to the sense of the project and engagement in its realisation, the quality of assessment and presentation, use of reference materials. Grades for projects are awarded on a scale of A-F, where A is the best and F is a fail. An excellent project (A) – without any essential errors Fail (F) – no project</p>
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Final test

Grades	<p>Grades are awarded on a scale of A-F, where A is the highest and F is a fail. Excellent (A) – the student presents fluent knowledge of the causes of the degradation of lands by industrial activity, methods for the reclamation and restoration of degraded areas, their biodiversity and some aspects of the legal regulations of land reclamation and restoration, has minimal errors that do not affect the quality of the presentation. Good (C) – the student presents good knowledge of the causes of the degradation of lands by industrial activity, methods for the reclamation and restoration of degraded areas, their biodiversity and some aspects of the legal regulations of land reclamation and restoration, makes rare but subtle errors. Satisfactory (E) – the student exhibits satisfactory knowledge, but with a poor understanding of the causes of land degradation and the possibilities for its reclamation using natural processes and data on habitat conditions and some legal regulations and makes subtle errors. Fail (F) – the student does not present satisfactory knowledge of the causes of land degradation and the possibilities of its reclamation using natural processes and data on the habitat conditions and some legal regulations and makes many</p>
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substantial errors, which disqualify their presentation.

