

“Reclamation of Disturbed Soils” - A West Virginia University Senior-level Course¹

Jeff Skousen²

Abstract: A Reclamation course has been taught at West Virginia University since 1975. Richard M. Smith first taught the class from 1975 to 1978, and then John Sencindiver took over from 1978 to 1985. Jeff Skousen has taught the class since 1986. Student enrollment varies from 40 to 60, and student majors include plant and soil sciences, natural resources, forestry, wildlife, geology, biology, and mining and civil engineering. The course is lecture-based and course topics include mining and reclamation history, coal resources and mining regions, underground and surface mining methods, pre-mine planning and permitting, assessing land disturbance impacts, evaluating soil and overburden properties using Acid-Base Accounting, handling and placing geologic materials, replacing soils, revegetating disturbed areas, evaluating water quality and hydrologic properties, controlling and treating acid mine drainage, and developing productive post-disturbance land uses after reclamation. Eighteen problems are assigned which require the students to calculate such things as coal tonnage, drilling and blasting costs, overburden volumes and moving costs, hydrologic measurements, acid mine drainage, Acid-Base Accounting, overburden handling and placement plans, application of lime and alkaline waste materials to mine soils, revegetation species and seeding rates, USLE, and design and costs of active and passive treatment of acid mine drainage. Two, one-day field trips to an active surface mine and to an acid mine drainage treatment facility are required.

Keywords: Academic teaching, Calculations, Coal mining, Problem solving, Reclamation technologies.

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 2. Jeff Skousen, Professor of Soil Science, West Virginia University, Morgantown, WV 26506, jskousen@wvu.edu.