Remediation and Reclamation of Disturbed Land

**Syllabus**

**Instructor:** Kenneth W. Farrish  
Room 101 Forestry Lab Building  
936-468-2475 or 2331

**Department:** Environmental Science

**Lecture Room:** Forestry Lab Building Room 103

**Laboratory:** Forestry Lab Building Room 109

**Text:** N/A

**Course Description:** Three semester hours, two hours lecture and three hours laboratory per week. Focus on remediation and reclamation of contaminated and disturbed lands. **Required one all day field trip.** Prerequisite: ENV 349, FOR 349, or permission of instructor. The course will be conducted in the format of a colloquium with considerable student involvement via presentations and discussions. Laboratory mini research projects and a 12 hour day-long field trip will supplement classroom discussions.

**Learning Outcomes:** The primary objective of this advanced level course is to provide insight into the theory and practice of land remediation and reclamation. Emphasis will be placed on understanding principles of land remediation and reclamation from case studies and research reports.

**B.S. Environmental Science Program Learning Outcomes**

1. Demonstrate competency in environmental assessment;
2. Demonstrate understanding in environmental management;
3. Demonstrate understanding in environmental policy and professional ethics;
4. Demonstrate competency critical thinking communicated through effective scientific written reports and oral presentations.
5. Demonstrate preparation to pursue a professional career and/or graduate degree programs.
B.S. Environmental Science Program Learning Outcomes

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1 Environmental Assessment</th>
<th>PLO2 Environmental Management</th>
<th>PLO3 Environmental Policy &amp; Professional Ethics</th>
<th>PLO4 Critical Thinking, Oral &amp; Written Communication</th>
<th>PLO5 Professional Career &amp;/or Graduate Degree Program</th>
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</thead>
<tbody>
<tr>
<td>ENV 403</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
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N/A – Not Applicable  B – Basic  I – Intermediate  A – Advanced  M – Mastery

Definition of Rating Categories:

1. **N/A** – Not Applicable – course does not support the Program Learning Outcome.

2. **B** – Basic – course supports Program Learning Outcome by providing students with fundamental information, definitions, concepts, and lab activities relative to the expected outcomes.

3. **I** – Intermediate – course supports Program Learning Outcome by providing students with topic-specific information, concepts, applications, and lab activities that increase the students’ skills in making tactical implementation decisions relative to the expected outcomes.

4. **A** – Advanced – course supports Program Learning Outcome by providing students with transitional, high level topic-specific information, activities, and opportunities that enable the students to apply their critical thinking and tactical skills to resolved increasingly challenging strategic situations.

5. **M** – Mastery – course supports Program Learning Outcome by providing students with opportunities to independently apply tactical and strategic planning skills to successfully accomplish real-world, non-academic management objectives. Completes students’ preparedness for entry-level professional activity accomplishment.

A. Tentative Course Calendar (subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Jan. 21</td>
<td>Course Organization and Introduction</td>
</tr>
<tr>
<td>Jan. 28</td>
<td>Review of Functions and Properties of Soils</td>
</tr>
<tr>
<td>Feb. 4</td>
<td>Land Disturbance and Contamination</td>
</tr>
<tr>
<td>Feb. 11</td>
<td>Remediation and Reclamation of Disturbed Land</td>
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<tr>
<td>Feb. 18</td>
<td>Remediation of Contaminated Land – Site Assessment</td>
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<td>Feb. 25</td>
<td>Remediation Techniques – Case Studies</td>
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<tr>
<td>Mar. 3</td>
<td><strong>Mid-Term Exam</strong></td>
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<td>Mar. 10</td>
<td><strong>Spring Break</strong></td>
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<tr>
<td>Mar. 17</td>
<td>Remediation Techniques – Case Studies</td>
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<tr>
<td>Mar. 24</td>
<td>Remediation Techniques – Case Studies</td>
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<tr>
<td>Mar. 31</td>
<td>Remediation Techniques – Case Studies</td>
</tr>
<tr>
<td>Apr. 7</td>
<td>Reclamation and Establishment of Vegetation Communities</td>
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<tr>
<td>Apr. 14</td>
<td>Reclamation – Case Studies</td>
</tr>
<tr>
<td>Apr. 21</td>
<td>Reclamation – Case Studies</td>
</tr>
</tbody>
</table>
B. Presentations - Each student will make a presentation to the class during the semester. The presentation will consist of a report on a case study or research report that deals with an aspect of land remediation or reclamation (topics are assigned). Visual aids should be prepared using PowerPoint to help illustrate important points. After each presentation, the presenter will then lead a discussion of the subject of the paper or report. The presentations will run between 15 and 20 minutes, with about 5 to 10 minutes of discussion. **Graduate students will give two presentations.** Participation in the discussions is required by all students and is a component of the final grade.

C. Laboratory Mini Research Projects - The class will conduct two mini research projects during the semester. One of these will deal with vegetative reclamation of disturbed land. The other will deal with bioremediation of petroleum contaminated soils. The vegetative reclamation project grade will be based on experimental success with vegetation in a growth chamber project. An extensive scientific laboratory report will be prepared on the bioremediation project. Specific instructions for these projects will be contained in separate handouts. The twelve hour all day field trip is part of the laboratory section and will be conducted on a Friday in the second half of the semester.

**Course Policies:**

A. Grading System
   
   Class presentation(s) at 30 percent of final grade  
   Participation in Class Discussions at 10 percent of final grade  
   Mini Research Project 1 (Reclamation Contest) at 10 percent of final grade  
   Mini Research Project 2 (Oil Remediation) at 25 percent of final grade  
   Mid-Term Exam at 10 percent of final grade  
   Final Exam at 15 percent of final grade

B. Grading Scale
   
   90.0-100 =A  
   80.0-89.9=B  
   70.0-79.9=C  
   60.0-69.9=D  
   <60.0 =F

C. Late Assignments - Late assignments will not be accepted without a documented excuse. Make-up of missed work will only be allowed if arrangements are made with the instructor before missing the scheduled work. A documented excuse will be required.
D. Attendance - Attendance on the field trip is mandatory. The final course grade will be reduced two letter grades for unexcused absence on the field trip.

E. Students must complete the on-line course evaluation. Grades will be withheld until the course evaluation is completed. Other Policies - All classroom conduct and performance should be compatible with the code of ethics stated in the current SFA Student Handbook. Students with documented disabilities who need course adaptations or accommodations should make an appointment to discuss their needs with the course instructor as soon as possible.

General Student Policies:
The following policies apply to all students enrolled in courses at Stephen F. Austin State University.

ACADEMIC INTEGRITY (A-9.1): Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

WITHHELD GRADES (A-54): Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

STUDENTS WITH DISABILITIES: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/
ACCEPTABLE CLASSROOM BEHAVIOR: Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic, or other penalties. This prohibition applies to all instructional forums, including electronic/online forums, classroom meetings, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the iCare program http://www.sfasu.edu/judicial/earlyalert.asp. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

RESPONSIBLE USE OF TECHNOLOGY: It is expected that all students will only use cell phones, PDAs, laptop or tablet computers, MP3 players, and related devices outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop/tablet for matters unrelated to the course may be grounds for dismissal from class or other penalties.