REMEDIATION AND RECLAMATION OF DISTURBED LANDS
ENVR 4303-001/ENVR 4003-020
Spring 2024

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Office: FORS 123
Office Hours: M/W 11:00 AM-12:30 PM; T 4:30-6:30 PM
Department: Division of Environmental Science
Class meeting time and place: Lecture - Tuesday 6:45-8:25 PM in FORS 222; Lab - Tuesday
8:30-9:15 PM, location varies.

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: ENVR 3349, FORS 3349, or permission of instructor. The course will be conducted with
considerable student involvement via presentations and discussions, as well as lectures from the
instructor. Laboratory mini research projects and an approximately 12-hour day-long field trip will
supplement classroom discussions.

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.

<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>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 4303</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>N/A – Not Applicable</td>
<td>B–Basic</td>
<td>I–Intermediate</td>
<td>A–Advanced</td>
<td>M–Mastery</td>
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</table>

Definition of Rating Categories:
- N/A – Not Applicable – course does not support the Program Learning Outcome.
- B – Basic – course supports Program Learning Outcome by providing students with
  fundamental information, definitions, concepts, and lab activities relative to the expected
  outcomes.
- 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.

• 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.

• 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.

Student Learning Outcomes

• Differentiate between various remediation and reclamation techniques (PLO 1 and 2)

• Understand regulations related to remediation and reclamation of disturbed and/or contaminated lands (PLO 3)

• Analyze and discuss reclamation and remediation case studies with peers (PLO 4)

• Recognize the roles that humans play in land disruption and contamination as well as remediation and reclamation (PLO 5)

Text and Materials

No required textbooks. Required course content will be distributed via Brightspace (D2L) as needed.

Grading Policy

Course grades will be calculated as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Midterm</td>
<td>150</td>
</tr>
<tr>
<td>Final Exam</td>
<td>150</td>
</tr>
<tr>
<td>Presentation</td>
<td>150</td>
</tr>
<tr>
<td>Participation</td>
<td>65</td>
</tr>
<tr>
<td>Weekly Notes</td>
<td>135</td>
</tr>
<tr>
<td>Lab Exercise 1</td>
<td>100</td>
</tr>
<tr>
<td>Lab Exercise 2</td>
<td>150</td>
</tr>
<tr>
<td>Field Trip</td>
<td>50</td>
</tr>
</tbody>
</table>

**Total possible points** 950

Letter assignment: A = 90-100, B = 80-89, C = 70-79, D = 60-69, F = <60

Course Requirements

Exams

Students will take both a midterm exam and a final exam. Exams consist of short answer, essay, multiple choice, true/false, and problem-solving style questions. The final exam is comprehensive, although it will rely more heavily on the second half of the course.

Lab Exercises

Students will have two graded lab exercises throughout the semester. Details regarding those lab exercises will be provided via Brightspace (D2L) as they are assigned.

Presentation

Each student will give a 15-20 minute oral presentation over their choice of topics from a list to be provided later in the semester. The topics will deal with land remediation or reclamation. Further
details regarding the presentations will be provided through Brightspace (D2L).

**Weekly Notes**

Each student is required to submit their notes over the week’s required reading on the Monday prior to class through Brightspace (D2L). Notes can be handwritten, typed, or an annotated version of the required reading. The submitted notes should show that you have thoughtfully read the required materials and that you are prepared to discuss the topics with your peers. I will be posting the readings for the following week each Wednesday.

**Field Trip**

There is a required full day field trip that will be conducted on Friday, April 12, 2024. Students will submit a summary of concepts discussed at the field sites.

**Participation**

Students will receive a weekly grade out of 5 points for participation. This grade is calculated using attendance and participation in the group discussions. The lowest week’s participation grade will be dropped.

**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.

**Contact Hours and Study Hours**

The federal definition of a credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit. In this three-credit hour course, students can expect to spend approximately three hours each week in lecture a minimum of 6 hours outside of class on course related readings, homework, etc.

**Attendance**

Attendance to the lecture and designated lab periods is required. Attendance is factored into the weekly participation grade. All students are allowed one unexcused absence without a point deduction per semester. For excused absences, documentation is required.

**Student Syllabus Resources**

Additional information regarding the following policies can be found at: [https://www.sfasu.edu/student-syllabus-resources](https://www.sfasu.edu/student-syllabus-resources)

- Institution Absences (HOP 04-110)
- Academic Integrity (HOP 04-106)
- Withheld Grades Semester Grades Policy (HOP policy 02-206)
- Students with Disabilities and Disability Services
- Student Wellness and Well-Being
- Additional Campus Resources
- Crisis Resources
Course Calendar*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Week</th>
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<tbody>
<tr>
<td>Introduction to Course, Land Disturbance</td>
<td>Week 1</td>
</tr>
<tr>
<td>Land Disturbance and Contamination</td>
<td>Week 2</td>
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<tr>
<td>Review of Functions and Properties of Soils</td>
<td>Week 3</td>
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<tr>
<td>Remediation and Reclamation of Disturbed Lands</td>
<td>Week 4</td>
</tr>
<tr>
<td>Remediation of Contaminated Land</td>
<td>Week 5</td>
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<tr>
<td>Remediation Techniques</td>
<td>Week 6</td>
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<tr>
<td>Midterm (Tuesday, 3/5/2024)</td>
<td>Week 7</td>
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<tr>
<td><strong>Spring Break</strong></td>
<td>Week 8</td>
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<tr>
<td>Remediation Techniques</td>
<td>Week 9</td>
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<tr>
<td>Brownfield Redevelopment</td>
<td>Week 10</td>
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<tr>
<td>Reclamation and Establishment of Vegetation Communities</td>
<td>Week 12</td>
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<tr>
<td><strong>Field Trip Friday, April 12, 2024</strong></td>
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<tr>
<td>Reclamation</td>
<td>Week 13</td>
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<tr>
<td>Reclamation</td>
<td>Week 14</td>
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<tr>
<td>PhD Student lead lecture</td>
<td>Week 15</td>
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<tr>
<td><strong>Final Exam</strong> (Tuesday, 5/7/2024 @ 6:45 PM-8:45 PM)</td>
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*As the instructor of this course, I reserve the right to modify the list of topics as needed. Exam dates will not change except under emergency circumstances. Students will be notified via Brightspace (D2L).