

CLARKSON UNIVERSITY
 Department of Civil and Environmental Engineering
CE491/MP401/CH481-02 Environmental Remediation Design Project
Spring 2005

Course Syllabus

Instructors: Stefan J. Grimberg
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Office Hours Stefan Grimberg
 Monday 10:00 - 11:00
 Tuesday 10:00 – 11:00
 Wednesday 3:00 – 4:00
 Friday 1:00 – 2:00
 or by appointment

Class Meetings: Tuesday / Thursday 2:00 – 3:50 Rowley 244

Catalog description: Science and engineering concepts are synthesized to generate safe, economic, and effective solutions to real-world environmental restoration projects. Emphasis is placed on multidisciplinary teamwork and communication.

Course Objectives	CEE Outcomes addressed	Evaluation Methods
To use fundamental knowledge in sciences and mathematics to solve a real-world problem	1a, 1d, 1g	1, 2
To design, build and test a bench-scale model of the developed process	1b, 1c	2
To communicate results to the public and judges	2a, 2b, 3b	3
To work in a multidisciplinary team	2c, 3a	1, 2, 3

Organization: The goal of this class is to design and build a process that will accomplish the goals set forth in the Task descriptions, presented by WERC. Students will be divided into committees, which will change in make-up as the project progresses. A portion of the meetings will be devoted to committee discussion. Additional committee meeting will be required and should be scheduled by the committees.

Requirements: Attendance is required at all meetings.
All students are to actively participate within their committees on several levels:

- contribution toward technical progress in design;
- contribution toward creating deliverables;
- contribution towards labor work (dishwashing, lab cleaning, etc.)

Each committee will make formal group presentation to the class during class meeting at least every other week. All committee members must contribute to the preparation of the presentation, though not all must present each time. Each person must make at least one formal presentation during the semester. Presentations will be critiqued by your instructor.

Evaluation Methods: Three methods will be used to assess student performance: (1) Class participation, (2) Laboratory work, (3) Formal presentations and design notebooks. Each will be graded periodically on the basis of:

- + good
- 0 acceptable
- improvement needed.

Your instructor will keep a tally of these marks and will use them in determining the final grade. All students will also grade themselves and their peers at the end of the semester. These will also be taken into account in the final grade. Students will be informed of their progress several times during the semester. At the end of the class students will grade each other on various aspects of the class.

Grade Distribution:

Committee participation:	60%
Formal presentation:	25%
Design notebooks:	10%
Participation:	5%

Important Dates and Deadlines for WERC Contest 2005

January

- 9 Classes begin
- 9 -27 research technologies, regulations, economics, learn analytical methods, order chemical supplies
- 27 determine specific technology or technologies
begin testing

February

- 1 contact auditors
- 12-15 February Break**
- 16 confirmation letters to auditors
- 23 First draft report complete

March

- 2 Report to auditors, incorporate changes
- 4 Fax Safety Summary and Flow Sheet
- 11 Fedex report**
- 12-20 Spring break**
- 15 Report due at WERC, e-mailed
- 12-4/2 Build final bench scale model
Create poster presentation
Practice oral presentation

April

- 1 e-mail chemical inventory of bench scale system to NMSU Safety Office
- 2 Travel to New Mexico
- 4 Oral Presentation
- 5-6 Bench-Scale Demonstration
- 4-7 Contest
- 24-29 Finals week, NO FINAL

Travel: Several students will travel to New Mexico to present the work of the class. The number of students that can travel will be

determined by funding availability, though it is expected that at least four students (and the instructor) will travel. The students who travel will be determined by majority class vote with instructor approval. Students are expected to choose (vote for) those students they feel will most successfully represent the group.