ENV 504: Remediation of Soils and Groundwater

Fall '26

Lecture: Wednesdays 8:15a-11:00a, DIA 005

Problem session: Wednesdays 11:15a-1:00p, DIA 005

Instructor: Rizlan Bernier-Latmani

TAs: Isabelle Saugy, Louisa Wolpert

W	Date	Lecture (8:15a-11a)	Problem session (11:15a-1p)	Comment
1	Sept 9th	Introduction Contaminant Properties + case study example	Dry/wet density (hmwk #0)	
2	Sept 16th	Microbial processes and monitoring + Physicochemical monitoring	Chemical properties (hmwk #1)	Groups assembled + Case study data provided
3	Sept 23rd	Introduction to groundwater modeling (guest lecturer)	Modeling subsurface contamination (room SG0217)	Joaquin Jimenez-Martinez + Data for site to remediate provided
4	Sept 30th	Vapor phase processes	Microbial processes and monitoring (hmwk #2 + #3)	
5	Oct 7th	Students present case study (graded)	Students present case study (graded)	Data summary due (feedback in 2 wks)
6	Oct 14th	Adsorption	Vapor phase processes (hmwk #4)	
-	Oct 21st	*Semester break- no class*		
7	Oct 28th	Soil treatment and washing	Adsorption (hmwk #5)	
8	Nov 4th	In-situ bioremediation	Soil treatment/washing (hmwk #6)	
9	Nov 11th	Physicochemical remediation and barriers Regulations (Osites vs Osols)	In-situ bioremediation (hmwk #7)	Remediation strategy due (feedback in 2 wks) Prof. Isabelle Romy
10	Nov 16th (Monday)	**Optional** visit to contaminated site in Valais	Tamoil contaminated site in Collombey-Muraz (VS)	Trip by chartered bus
10	Nov 18th	Regulations and disposal	Physicochemical remediation and barriers (hmwk #8)	
11	Nov 25th	Final Exam		
12	Dec 2nd	Project		
13	Dec 9th	Project		

14	Dec 16th	Project	
	Jan 8th		Report due (graded)

The course is organized as a lecture during the first three 45-minute periods and a problem session during the fourth and fifth 45-minute periods.

Evaluation and grading information:

- Course materials. homework, solutions and reading assignments are available on http://moodle.epfl.ch/course/view.php?id=7931

- Homework will be discussed the week after the relevant content is discussed. It is not graded but serves to prepare for the exam.

- Project: Groups of 2-4 students will be asked to design a remediation strategy for a contaminated site. The following are the deliverables:
  - A summary of the data relevant to the site is due on Oct. 7th (not graded).
  - Presentation of an assigned case study on Oct. 7th (graded).
  - A selection of the remediation strategy is due on Nov. 11th (not graded).
  - A final report is due on January 8th. Please send an electronic copy by email to the instructor and wait for confirmation of receipt.
  - The oral presentation (during the exam session) consists of a 30-minute presentation followed by 15 minutes of questions for each group. You are expected to be able to get into the details of the design, including calculations.
  - All assignments are due by 5p on the day of the deadline. For the report, there will be a grade penalty for tardiness. See details in remediation project description. For the non-graded assignments, no feedback will be provided if the document is turned in late.

- The final exam: will be held on Nov. 25th at 9:15a, and will last 3 hours. It will cover the contents of the entire course.

- Grade distribution: 60% Project (10% case study, 30% oral, and 20% report)
  40% Final exam

- Office Hours: by appointment only.