

Lafayette College
Department of Civil and Environmental Engineering

CE 422: Environmental Site Assessment

Spring 2014

Instructor: Dr. Arthur D. Kney (kneya@lafayette.edu)
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Lectures: Room 327 AEC - Tuesday: 6:00 – 6:50 pm; Thursday: 1:10 -2:00 pm

Laboratory: Room 327 AEC - Thursday 2:00 – 4:00 pm

Text/Reading: All reading material will be provided by Professor – *Publications out of Print*
1) Environmental Site Investigation Guidance Manual, ASCE Publishing, 1996
2) Environmental Site Assessment, *Phase I: A Basic Guide -Second Edition*,
Kathleen Hess, Lewis Publishers, NY, 1998
3) ASTM 1527-13/1528-06 (for education purposes only)

Prerequisite: Chemistry 122 and permission of the instructor

Course Description: Introduction to preliminary site investigations for environmental hazards. Topics include identification of wetlands, titles search, air photo interpretation for environmental hazards, visual site surveys, operation of environmental monitors, current EPA regulations regarding site assessment and investigation, and sampling of surface materials.

Purpose: This elected course offers students with an interest in Environmental Engineering and/or Environmental Science experience in environmental real estate assessment with regards to identification of environmental conditions. CE-422 fulfills requirements for those students in pursuit of a Bachelor of Science (BS) degree in Civil Engineering, a Bachelor of Arts (AB) degree minor in Environmental Science and can apply to other engineering and science degrees. CE 422 is designed to be taken in a student's junior or senior year.

Course Objective: The objective of CE 422 is such that once a student has satisfactorily completed all requirements he/she will be able to conduct a Phase 1 Environmental Site Evaluation on an average commercial property with minimal guidance and report the information in a manner consistent with ASTM Standard 1527-13.

Learning Objectives: This is one of a series of courses taken in the area of environmental engineering. CE 422 serves to provide a student with the tools needed to evaluate a property from an environmental perspective regarding chemical and physical hazards that may be present. The student will learn how identify “recognized environmental conditions” in addition to gaining an understanding of how to safely deal with them. The final product of the course will be a professional report produced in accordance with ASTM E 1527-13 and E 1528-06 standards. The fundamental tools taught are necessary for a student interested in concentrating in the area of "Environmental Engineering" within the Civil and Environmental Engineering discipline.

After completing this course a student should be able to:

- understand how to use ASTM standard 1527-13/1528-06 with regard to Environmental Site Assessment (ESA). (ABET 3c, f and k)
- evaluate a commercial property through observation and inspection, records review (federal, state and local), deed search, and personal interviews. (ABET 3f and k)
- use various forms of technology to produce both graphical and visual documents that can be incorporated into both written and oral presentations. (ABET 3g)
- communicate oral and/or written findings gathered through an ESA in accordance with ASTM Standard 1527 in a clear and concise manner with a particular audience in mind. (ABET 3g)
- understand both the legal and ethical issues that are involved with assessing a property from an environmental perspective. (ABET 3f)
- maintain a professional relationship with all people involved in a project and uphold engineering standards with regard to the ASCE code of ethics and professionalism. (ABET 3f and h)

Expectations Rules and Procedures:

1. Attendance is required at all regularly scheduled lectures, labs, and field trips.
2. Assignments must be submitted by 4:00 PM on the due date. 10 % will be deducted each day homework is overdue. ***The first 10 % is deducted at 4:01 PM, the next 10 % the following day at 4:01 PM and so on... WEEKENDS COUNT!***
3. **Course Project:** During the semester, students will conduct a “Blind” Phase 1 Environmental Site Assessment (ESA). Groups of two will be assigned. Each group may choose their own site; however, the site must be within Northampton County. The instructor must give final approval to the choice of site. A site visit should **not** be conducted unless approved by the instructor. Each group will give a preliminary presentation concerning the choice of site and will give a final presentation summarizing the results of the results of their site assessment. Each group must also submit a project portfolio and final report.
4. **Costs:** You will be required to make phone calls, send letters, pay copying fees, and travel within the Lehigh Valley in order to obtain information for your project from various local, state, and federal agencies. You will be responsible to cover the costs associated with these activities.

Grading: General:

Reading assignments/quizzes	- 10 %
Class attendance, participation and leadership	- 10 %

Projects:

Virtual Brownfield/Site Recon	- 15 %
Site selection presentation	- 5 %
Final presentation	- 10 %
Final report	- 25 %
Phase I Exam	- 25 %

Federal Credit Hour Statement - The student work in this course is in full compliance with the federal definition of a four [two or one as appropriate for half and quarter unit courses] credit hour course. Please see the Lafayette College Compliance webpage (<http://registrar.lafayette.edu/additional-resources/cep-course-proposal/>) for the full policy and practice statement.