FALL 2020

ENV 510 ENVIRONMENTAL RISK ASSESSMENT (2 Credits)

Course Syllabus

This course is primarily taught through interactive television although course may be taught using either format at instructor discretion. A Zoom invitation was emailed to all students registered for the class as of August 24, 2020. Students may participate remotely with a camera (turned on).

Instructor: Laura Rectenwald, Ph.D., P.G.
Adjunct Professor –Forestry
Stephen F. Austin State University

Office Hours: By Appointment, Phone, Teams or Zoom
Phone: Office 903-234-8443
Email: LRectenwald@titaniumenvironmental.com
Class Hours: Tues. 6:00-8:00 p.m.
Location: FL 103
Remote:
https://sfasu.zoom.us/j/92950898103?pwd=THhhaGJ5WmxJMXVDbXg1dmgxNh5UT09
Meeting ID: 929 5089 8103
Passcode: 525820

COVID-19 MASK POLICY

Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.


Course Description:

Environmental risk assessment drives decision making in a vast number of settings. Being able to identify, understand, quantify and communicate risks to human health and the environment will compliment graduates’ work in many fields including science, law, real estate, medicine and industry.

During the course, students will learn to recognize sources of risk to human health and the environment and will be introduced to methods that may be used to describe and quantify the risk posed by sources of chemical contamination to humans, ecological systems, soil, groundwater, surface water, and air. Emphasis will be placed on use of tools provided by key regulatory agencies for assessment of risk.
**Required Course Text:**


*E1903 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process. Access through ASTM Standards on Campus.*

Other sources will be used throughout the course that are publicly available online from the Texas Commission on Environmental Quality (TCEQ) and the Railroad Commission of Texas (RRC). Links will be supplied.

**Objectives:**

This course is designed to

1. Describe approved methods for identifying risk and conducting environmental risk assessments for a variety of purposes including real estate transactions, construction of emission sources, occupancy and use of properties and identification of recent and historic spills.
2. Describe some of the options for remediation and control of contaminated media.
3. Explain some of the options for obtaining analytical data, sources of variability and error in data, and use of regulatory targets to quantify risk.
5. Describe uncertainty and variability in the risk assessment process.
6. Describe the importance of accurate and clear communication regarding environmental risk.

**Program Learning Outcomes (PLOs)**

The student will demonstrate understanding of

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1 Environmental Regulation and Compliance</th>
<th>PLO 2 Environmental Risk Assessment</th>
<th>PLO 3 Occupational and Environmental Health</th>
<th>PLO 4 Statistical Methods and Data Management</th>
<th>PLO 5 Effective Scientific Written and Oral Reports</th>
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<tbody>
<tr>
<td>ENV 510</td>
<td>I</td>
<td>M</td>
<td>I</td>
<td>I</td>
<td>A</td>
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N/A = Not Applicable B= Basic I=Intermediate A=Advanced M=Mastery

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 skills.

**Student Learning Outcomes**

This course will enable the student to:

1. Recognize sources of actual and potential environmental and regulatory risk.
2. Develop a plan to assess environmental media and to determine whether contamination is present.
3. Access and utilize publicly available tools to evaluate the extent and magnitude of environmental risk posed by contaminated soil, groundwater, surface water and air to human and ecological receptors.
4. Identify means to reduce/control environmental risk posed by contaminated environmental media.
5. Critically evaluate observations and data to avoid misunderstanding and miscommunication.
6. Appreciate the inherent uncertainty in predicting current and future outcomes related to environmental contamination.
7. Communicate environmental risk to affected decision-makers and support the decision-making process.

**Topics for class study and discussion:**

Reading will come out of the aforementioned texts. Links to the publicly available documents will be provided throughout the course. If you have any questions at any time email or call the instructor.

**Course Materials:**

1. Each student will have access to all course materials through direct email from the instructor.
2. Materials will include websites for review and reference materials, Adobe format documents and links to the current media for reports on risk assessment currently being used in the public domain.
3. Copies of portions of presentation materials will be made available from time to time. Publication of presentation material is a bonus and not an obligation of any lecturer during the course. If a student has difficulty accessing web site materials they must contact the Graduate Program Coordinator in Nacogdoches, however the ultimate responsibility for accessing the material resides with the student.
4. Students are expected to read all the materials assigned and take notes during the class period.
5. Course materials will be posted in this Google Drive folder: [https://drive.google.com/drive/folders/11wmC2i1cJFEwFOchVu77YCEc_j_4Kl1?usp=sharing](https://drive.google.com/drive/folders/11wmC2i1cJFEwFOchVu77YCEc_j_4Kl1?usp=sharing)
**Course Grading:**

1. Six Written Assignments – 60%
2. Final Examination – 25%
3. Discussion/participation – 15%

Final examination will be a combination of multiple choice, true-false, short answers and essays. The final exam will be comprehensive.

This course includes six written assignments that will provide opportunities to practice newly acquired assessment skills. These assignments will rely on supplied materials and are not intended to be research projects although some self-study may be needed in order to complete the assignments. Assignments will be graded based on accurate representation of data, demonstrated understanding of site information/remediation criteria, and clarity of writing to intended audience.

Attendance is expected and excessive non-attendance may be considered in final grade. Participation in discussion online or in-class is required. More details on this section will be provided in class.

Withdrawal from course: You are responsible for knowing university procedure. Not adhering to guideline could result in F grade being recorded.

Note: you are considered enrolled and accountable for all class activity until such time that an official withdrawal notification is received.

**Grading will be assigned as following:**

- a. A: 90% +
- b. B: 80% - <90%
- c. C: 70% - <80%
- d. D: 60% - <70%
- e. Failing: <60%

**Websites as references:**

- [https://www.tceq.texas.gov/](https://www.tceq.texas.gov/)
- [http://www.rrc.state.tx.us/](http://www.rrc.state.tx.us/)
- [https://www.epa.gov/](https://www.epa.gov/)
- [https://www.osha.gov/](https://www.osha.gov/)
- [http://environmental.netronline.com/](http://environmental.netronline.com/)

**Videoconferencing:**

Origination site:
Titanium Environmental Services, LLC
311 East Cotton Street
Longview, Texas 75601

Receiving site:
Stephen F. Austin State University
Dr. Kenneth Farrish, Director
Department of Environmental Science
Stephen F. Austin State University
Science Research Center
Nacogdoches, Texas
Office Phone: (936) 468-3304 or (903) 468-2475
Fax: (936) 468-6911
E-mail: kfarrish@sfasu.edu
**Academic Integrity Statement:**

Academic dishonesty, defined in the Stephen F. Austin State University policy A-9.1 Academic Integrity, such as cheating, unauthorized collusion and plagiarism will not be tolerated. University policies require the course instructor to investigate the allegations and notify the Office of the Dean, College of Sciences and Mathematics for disciplinary action. Penalties may include reprimand or no credit for the assignment or exam, or re-submission of the paper, or make-up exam, or failure of the course. In the event disciplinary measures are imposed on the student, it becomes part of the student’s official school record (Policy A9.1) and remains on file in the Dean’s office. A student may appeal the decision of the faculty regarding academic dishonesty by following the Appeals process outlined in Policy A-2, Academic Appeals by Students. Policies cited may be found at [http://www.sfasu.edu/upp/](http://www.sfasu.edu/upp/)


**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, 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.

Ethel G. Gallant Administrative Assistant
P.O. Box 6130 - SFA Station
Nacogdoches, TX 75961
Phone: 936-468-3004
TTY: 936-468-1004

For further information on SFASU Disability Accommodation, please go to website:
[http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/)