Syllabus
ENV 5314
Wetland Delineation and Functional Assessment
ENV 5314-001; ENV 5014 - 020

Instructor: Jason C. Paul – Division of Environmental Science
Office: FO 122; Office Phone: 936-468-3812; Email: pauljason@sfasu.edu
Office Hours: M, W: 2:00-5:00 pm or by appointment
Credit Hours: 3 Credit Hours – 2 x 1 hour lectures & 1 x 3 hour lab per week.
Meeting Times: Lectures-ENV 514.001: TR 9:30-10:20 am, Forestry Room 208
Laboratory- ENV 514.021: R 2:00-4:50 am, Forestry Room 208

Course Description: An introduction to the history, regulations and current technical criteria for the identification and delineation of wetland boundaries and the functional assessment of wetlands.

Program Learning Outcomes: ENV 514 is a course that may be taken for students earning an MS in Environmental Science degree who have not taken the course as an undergraduate and wish to master the concepts of wetland delineation and functional assessment. A grade of "B" or better must be earned for the course to count towards an MS degree. Program Learning Outcomes include the following:

1. The student will demonstrate understanding of environmental regulation and compliance.
2. The student will demonstrate understanding of environmental risk assessment and management.
3. The student will demonstrate understanding of occupational and environmental health.
4. The student will demonstrate understanding and competency in statistical methods and data management.
5. The student will demonstrate competency in critical thinking communicated through effective scientific written reports and oral presentations.

The following matrix indicates the level at which ENV 514 supports the MS Env. Sci. Program Learning Outcomes:

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO #1 Environmental Regulation and Compliance</th>
<th>PLO #2 Environmental Risk Assessment and Management</th>
<th>PLO #3 Occupational and Environmental Health</th>
<th>PLO #4 Statistical Methods and Data Management</th>
<th>PLO #5 Critical Thinking through scientific written report and oral presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 514</td>
<td>M</td>
<td>A</td>
<td>N/A</td>
<td>A</td>
<td>M</td>
</tr>
</tbody>
</table>

N/A = Not Applicable  B = Basic  I = Intermediate  A=Advanced  M=Mastery

Student Learning Outcomes: Students are expected to master an understanding of Section 401 and 404 permitting under the Clean Water Act, as well as understand all pertinent regulations involving wetland protection and mitigation (PLO#1). Lecture and laboratories are designed to present concepts and practice current techniques for wetland delineation and functional assessment (PLO#2). This course does not address occupation and environmental health, which does not fit the objective of the course (PLO#3). Data sheets will be technically complete and statistical methods will be used to assess wetland functionality (PLO#4). Written reports will be assigned and will emulate professional reporting requirements (PLO#5). In addition, the written assignments, lecture, and laboratory assignments will be designed to prepare students for careers in wetlands regulation, delineation, and management with state and federal agencies, and private industry or consulting (PLO#5). An oral presentation will be conducted by the student at the end of the semester that will demonstrate mastery of wetland delineation, mitigation, or regulation (PLO#1, PLO#2, PLO#4, PLO#5).
ENV 514 Special Presentation:
Graduate students are required to prepare a 25-minute class presentation in Power-Point format. The presentation must be related to jurisdictional wetland identification and delineation or wetland functional assessment. The presentation is worth 100 points and will be presented on TUESDAY DECEMBER 3 during the lecture period. A copy of the PowerPoint presentation (in converted .pdf format) should be provided on or before the day the presentation is given to the instructor via email.

Examples of Potential Presentation Topics for Graduate Students:
- Recent and/or proposed changes in WOTUS/wetlands regulations
- Supreme Court rulings and how they affected jurisdictionality/interpretation of wetlands and/or wetland connectivity to WOTUS (i.e. Rapanos vs. U.S. Army Corps of Engineers (USACE); Solid Waste Agency of Northern Cook County v. USACE)
- Current wetland mitigation guidelines
- General versus Standard wetland permitting
- Section 404 Exemptions
- Differences between NRCS wetland delineation method for FSA purposes versus USACE wetland delineation methods

Required Texts: The manuals used for this course are public domain, federal documents that are freely available online:


https://wetlands.el.erdc.dren.mil/guidebooks.cfm
https://wetlands.el.erdc.dren.mil/hgmhp.html

http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/ApplicationSubmittalForms.aspx

Supplemental/Suggested Text – National Wetland Plant Inventory List:
http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html

Lecture Topics/Dates:
Wetlands Regulations/Week 1-2
- Federal Water Pollution Control Act ("Clean Water Act")
- Food Security Act
- State and Federal Wetland Permitting Process
Wetland Identification and Delineation/Weeks 2 to 4
- The 3-Parameter Approach
- Regional Supplements to the 1987 Manual
- Wetland Vegetation Criteria and Indicators
- Wetland Soils Criteria and Indicators
- Wetland Hydrology Criteria and Indicators
Wetland Identification and Delineation Field Methods/Week 5
- Preliminary Desktop Evaluation and Field Preparation
Routine Field Methods
Comprehensive Field Methods

Problem Wetlands/Disturbed Wetlands Identification and Delineation/Weeks 6 and 7

Midterm – During Lab – October 10, Meet in FO 208.

Hydrogeomorphic Functional Assessment/Weeks 8 to 11
Functions versus Values
Hydrogeomorphic Classification System
Reference Wetlands and the Reference Domain
Reference Standards
Functional Indices, Sub-indices, and Model Development

Texas Rapid Assessment Method (TXRAM) – Wetlands and Streams/Weeks 12 to 13

Practical Application of Indices - Wetlands Mitigation/Week 14

December 8, 2020: 8:00 – 10:30 am - FINAL

Proposed Field Laboratory Schedule – Thursdays 2:00 – 4:50 pm
All laboratories, except for written test dates, will be conducted in the field. Students are required to wear hard-hats, long-pants, and work boots for the field. You will get wet and muddy, dress accordingly.

Aug 27 No Laboratory
Sep 3 Plant Community Concept and Vegetation Sampling
Sep 10 Wetland Identification (Estimating Plant Cover) – LAB EXCERCISE
Sep 17 Wetland Identification (Hydric Soil/Hydrology Indicators)
Sep 24 Wetland Identification and Delineation – REPORT ASSIGNED
Oct 1 Wetland Identification and Delineation – REPORT ASSIGNED
Oct 8 Midterm – lecture exam to be given during lab
Oct 15 Wetland Identification and Delineation – REPORT ASSIGNED
Oct 22 HGM – WAA and Plot Locations, WAA and Plot Variables
Oct 29 HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 5 HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 12 HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 19 TXRAM Assessment of Wetlands – REPORT ASSIGNED
Nov 26 No Laboratory - Thanksgiving
Dec 3 STUDY FOR FINAL

Lab Materials:
Hard-hat; hiking/work boots that reach above the ankle or rubber/waterproof boots (snakeproof/waterproof boots are recommended but not required); ankle-length pants; shirt with sleeves MUST be worn. For your safety absolutely NO shorts, Capri pants, flip-flops, backless shoes, or sandals will be allowed to be worn in field labs. **If you come to a field lab dressed inappropriately you will not be allowed to attend laboratory and your absence will be considered unexcused.**

Bring a covered clipboard to write with and to collect vegetation samples for keying out. Bring rainwear, and warm clothing according to projected weather. A hand lens and plant identification field guides are recommended. Masks must be worn in order to ride in the vans and to perform lab. Masks must also be worn during class (see policy below).

**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
Course & Lab Policies:

A. Social Justice Statement
This course and its instructors expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. This class will be a safe haven for the thoughts and ideals of all students. Our University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, genetic information, citizenship, veteran status, sexual orientation, gender identity, and gender expression. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

B. Academic Accommodation for Students with Disabilities Policy (6.1)
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, and 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. For additional information, go to http://www.sfasu.edu/disabilityservices/

Students with documented disabilities who require course adaptations or accommodations should make an appointment to speak with the Professor.

C. Acceptable Student Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy 10.4). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

D. Responsible Use of Technology: It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class or lab. If a cell phone rings during a lecture or laboratory, or I observe the use of text messaging, I will deduct ten (10) points from the offending student's total point score for each occurrence. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may also be grounds for dismissal from class. The use of a cell phone or any unauthorized electronic device during an exam is considered cheating. See cheating policy below.

E. Attendance Policy: Attendance for lectures and laboratories are mandatory. There will be no make-up laboratories. Each laboratory unexcused absence will result in a 5% reduction from your final course grade and the forfeiture of the points assigned for that laboratory. After two unexcused lecture absences, each additional lecture absence will result in a 5% reduction from your final course grade. Students are responsible for providing documentation for an excused absence.

F. Excessive tardiness/leaving early: Lecture and laboratory will begin promptly at the appointed time. Repeated tardiness will not be tolerated. A student can be late to class twice without penalty. A ten (10) point reduction in the total point score will be applied for each additional occurrence. Tardiness to laboratory will usually result in the student missing the laboratory. See above for the laboratory attendance policy

Students that have to leave during lecture/laboratory for a legitimate reason must make prior arrangements. If a student decides to leave during a lecture/laboratory for unexcused reasons, do not return during that particular period. A ten (10) point reduction in a student's final point total will be applied for each occurrence.
G. **Course Grade:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>2 written exams @ 100 pts. each</td>
<td>200</td>
</tr>
<tr>
<td>8 Laboratory Assignments @ 25 pts. Each</td>
<td>200</td>
</tr>
<tr>
<td><strong>Graduates Only: Presentation @ 100 pts.</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Graduate Total Course Points</strong></td>
<td>500</td>
</tr>
</tbody>
</table>

Course grade = (Total Points Earned/Total Points Available) x 100.

H. **Withheld Grades/Semester Grades Policy:**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

I. **Student Academic Dishonesty Policy:**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty:

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf](http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf)

Consequences of Academic Dishonesty (Cheating):

The severest penalty (an F for the course) will be assigned to any student caught cheating or plagiarizing on an assignment.

J. **Seat Belts in College Vehicles:** In accord with SFA University Policy and the laws of the State of Texas, all occupants of any college vehicle will wear a seat belt when riding in that vehicle. There will be no exceptions to this policy. In accord with Texas law, any unrestrained vehicle occupant who is over the age of 15 may be issued a citation for failure to wear a seat belt.

   a. Drivers!!!! I will need 2 drivers who can get or have van certification. **Please see me if you would like to become a driver.**

K. **Tobacco-Free Policy:** University Policy 13.21 states that campus is tobacco and vape free. This includes all tobacco and vape related products, and includes all activities during field labs! See: [http://www.sfasu.edu/policies/13.21-smoking-vaping-and-use-of-tobacco-products.pdf](http://www.sfasu.edu/policies/13.21-smoking-vaping-and-use-of-tobacco-products.pdf)

L. **Firearms and Concealed Carry:** University Policy 13.9 deals with firearms and the concealed carry policy. Students with concealed carry licenses that choose to carry on campus are required to follow all Texas laws and University policies and it is their responsibility to understand and comply accordingly. See: [http://www.sfasu.edu/policies/13.9-Firearms-Explosives-and-Ammunition.pdf](http://www.sfasu.edu/policies/13.9-Firearms-Explosives-and-Ammunition.pdf)