Syllabus
Wetland Delineation and Functional Assessment
ENVR 5314-001; ENVR 5014-020
Fall 2023

Instructor: Dr. Jenny Rashall and Dr. Hans Williams – Division of Environmental Science
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Office Hours: Dr. Williams: M-F 8:00-9:00 am or by appointment
Dr. Rashall: TR 10:30 am-12:15 pm, W 11:00 am-12:30 pm, or by appointment
Credit Hours: 3 Credit Hours – 2 x 1 hour lectures & 1 x 3 hour lab per week.
Meeting Times: Lectures-ENVR 4302-001: TR 9:30-10:20 am, Forestry Room 205
Laboratory-ENVR 4002-020: R 2:00-4:50 pm, Forestry Room 222 (we will usually meet at the garage)

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: ENVR 5314 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 are provided in the table below:

| M.S. Environmental Science Program Learning Outcomes Proficiency Levels |
|---|---|---|---|---|---|
| Course | PLO #1 Environmental Regulation and Compliance | PLO #2 Environmental Risk Assessment and Management | PLO #3 Occupational and Environmental Health | PLO #4 Statistical Methods and Data Management | PLO# 5 Critical Thinking through scientific written report and oral presentation |
| ENVR 5314 | M | A | N/A | A | M |
| 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).

ENVR 5314 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 THURSDAY, NOVEMBER 30 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 jurisdiction/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/pdfs/trel10-17.pdf](https://wetlands.el.erdc.dren.mil/pdfs/trel10-17.pdf)
[https://wetlands.el.erdc.dren.mil/guidebooks.cfm](https://wetlands.el.erdc.dren.mil/guidebooks.cfm)


- Also Wetlands Data Sheet and Wetlands Scoring Sheet

[http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/ApplicationSubmittalForms.aspx](http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/ApplicationSubmittalForms.aspx)

Supplemental/Suggested Text – National Wetland Plant Inventory List:


**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**

**Hydrogeomorphological Functional Assessment/Weeks 8 to 11**
- Functions versus Values
- Hydrogeomorphological 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

Proposed Field Laboratory Schedule – Thursdays 2:00 – 4:50 pm
Aug 31       Lecture for 50 minutes
Sep 7        Plant Community Concept and Vegetation Sampling
Sep 14       Wetland Identification (Estimating Plant Cover) – LAB EXCERCISE
Sep 21       Wetland Identification (Hydric Soil/Hydrology Indicators)
Sep 28       Wetland Identification and Delineation – REPORT ASSIGNED
Oct 5        Wetland Identification and Delineation – REPORT ASSIGNED
Oct 12       Wetland Identification and Delineation – REPORT ASSIGNED
Oct 19       First lecture exam to be given during lab period
Oct 26       HGM – WAA and Plot Locations, WAA and Plot Variables
Nov 2        HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 9        HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 16       HGM Functional Assessment of Wetlands – REPORT ASSIGNED
Nov 23       No Laboratory - Thanksgiving
Nov 30       TXRAM Assessment of Wetlands – REPORT ASSIGNED
Dec 7        Second lecture exam to be given during lab period

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.

REPORTS ARE DUE THE FOLLOWING THURSDAY BY MIDNIGHT FROM THE DATE THEY ARE ASSIGNED.

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 be 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. I highly encourage masks to be worn in the vans and to perform lab when social distances cannot be observed.

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.

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

Course & Lab Policies:

**Grading System:**

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Research presentation</td>
<td>100</td>
</tr>
<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>Graduate Total Course Points</strong></td>
<td><strong>500</strong></td>
</tr>
</tbody>
</table>
Course grade = (Total Points Earned/Total Points Available) x 100.

Grading Scale - The following scale is adhered to strictly. Individual overall means are calculated to the first decimal place.

90.0 - 100 = A
80.0 - 89.9 = B
70.0 - 79.9 = C
60.0 - 69.9 = D
< 60.0 = F

Late Assignments - Make-up exams will only be given if arrangements are made with the instructor before missing the scheduled exam. A documented excuse will be required. Otherwise, missing exams will be counted as zeroes in the overall grade computation. Late laboratory assignments will not be accepted.

Attendance - Attendance in the laboratory section is mandatory. The final grade may be reduced by one letter grade per absence.
Other Policies

Code of Conduct and Academic Integrity (HOP 10.4)

Academic integrity is a responsibility of all university faculty and students. Since joining the UTS, policy and procedures regarding student code of conduct and academic integrity have changed. Violations of academic integrity include:

a. Cheating
b. Plagiarism
c. Collusion
d. Misrepresentation of Facts

Please refer to the links below regarding the updated policy, including definitions, and procedures.
https://www.sfasu.edu/docs/policies/10.4.pdf
https://www.sfasu.edu/sco/about

Use of ChatGPT (or other similar AI tools or software) is not allowed in this course for any part of a graded assignment. Doing so is considered a violation of the cheating and plagiarism standards of the SFA Code of Conduct and Academic Integrity HOP.

Withheld Grades Semester Grades Policy (A-54)

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.

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, 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/.

Mental Health and Wellness

SFA values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
SFA Counseling Service
www.sfasu.edu/counselingservices
Rusk Building, 3rd Floor
936-468-1041

SFA Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services, Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line: 1.800.392.8343S
Suicide Prevention Lifeline: 1.800.273.TALK (8255)
Crisis Text Line: Text HELLO to 741-741
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. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class or other penalties.

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.

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. 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. Please read the complete policy at: http://www.sfasu.edu/policies/student-code-of-conduct_10.4.pdf

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

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