



ENVS 305-01E Environmental Hydrology
COURSE SYLLABUS: Spring, 2020

INSTRUCTOR INFORMATION

Instructor: Dr. Haydn A. “Chip” Fox
Office Location: BA 245
Office Hours: 10:00—11:00 MWF (and most other times)
Office Phone: 903-886-5442

University Email Address: haydn.fox@tamuc.edu
Preferred Form of Communication: e-mail
Communication Response Time: Not instant, but usually same day

COURSE INFORMATION

Class meets Mon, Wed, Fri 9:00—9:50 BA 245

Textbook(s) Required: Manning, J. C. (1997) Applied Principles of Hydrology, 3rd ed. Prentice Hall **or** Waveland Press, depending on the printing.

Course Description

Catalog Description: Essentials of fluid mechanics. Flowing rivers, streams, and diverse surfaces; motions in lakes and reservoirs and ground water movement of various contaminants. Properties of rocks and soils as related to ground water diffusion and problems of concern to water resources.

Practical Description: This course will present an overview of nearly all aspects of the field of hydrology, including the hydrologic cycle, surface water (rivers and glaciers) and groundwater. The bulk of the course will concern groundwater and will focus on practical methods for ascertaining aquifer characteristics, the understanding of which is paramount to evaluating groundwater supplies and groundwater contamination problems and remediation.

Student Learning Outcomes (Should be measurable; observable; use action verbs)

1. You will be able to express the hydrologic cycle mathematically, and to explain how each part of the cycle is measured.
2. You will be able to explain the dynamics of how rivers flow, and how they form each of several different types of landforms.
3. You will be able to describe the nature and characteristics of groundwater flow
4. You will be able to design a high-capacity water well.
5. You be able to construct a water table contour map
6. Using data from a pump test and your groundwater map, will be able to determine the direction and rate of groundwater flow and the potential extent of any groundwater pollution event.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Using a word processor software to write and print you semester research project report.

Instructional Methods

Lecture/Discussion, and practice in applying pen and paper methods for skills such as groundwater mapping and pump-test aquifer characterization

Student Responsibilities or Tips for Success in the Course

Attendance is the most important responsibility, because the learning in this course is sequential, with each new topic requiring the knowledge and/or skills from the previous topic.

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 55%-69%
F = 59% or Below

2 Mid-term Exams	200 Points
Comprehensive Final Exam	100 Points
6 Homeworks @ 5 each	30 Points
10 Quizzes @ 5 each	50 points
Semester Project (Paper and Oral Presentation)	60 Points
Total	440 Points

Assessments

The first exam is a standard essay exam. The second mid-term and final exam are practicals, and will involve the skills of groundwater mapping, well design, aquifer characterization using pump-test data, and deriving a plan for the remediation of polluted groundwater in a realistic hypothetical situation.

The semester project paper and presentation is worth 60 points as follows:

- Paper in on time, Proper format (10 page minimum, typed, etc) (12 points)
- Properly referenced and/or Adequate Field Work (12 points)
- Ability to communicate clearly (grammar, sentence structure) (12 points)
- Looks like a "Semester" Project or not an overnight (12 points)
- Oral Presentation (12 points)

The homeworks and quizzes will be reflective of material learned in lecture and will help in preparing for exams

Semester Projects are expected to involve active research, not simply an Internet study. You will have a hard time making a project look like a semester project if it is only an Internet study (although I have seen some that do look like a semester project).

Typically, this will result in only 6 points in the "semester project" category. PLEASE DO NOT USE REPORT COVERS.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

If you e-mail me, I'll respond usually within a day, unless for some reason I'm gone somewhere. But also, I'm always happy to have you come visit me in my office, AG/IT 111, located in the northeast corner of the building within room 116. My office hours are stated above, but I'm in my office most of the time anyway except around lunch hour. Still, it's always a good idea to e-mail me to make sure I'm here if you're coming over.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Attend all sessions. More than four un-excused absences may result in a drop of one letter grade. Five or more absences may result in being dropped from the course.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Topical Syllabus:

Weeks — Definitely subject to change dependent on class progress

1 Jan 13 The Hydrologic cycle and properties of water (Chapters 1 & 2)

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|----|------------|--|
| 2 | Jan 20 | Evapo-transpiration and condensation (Chapters 3 & 6) |
| 3 | Jan 27 | Precipitation (Chapters 4) |
| 4 | Feb 3 | Runoff and Streams (Chapter 8) |
| 5 | Feb 10 | Infiltration (Chapter 5) |
| 6 | Feb 17 | Darcy's law (of groundwater flow) and Soil sieve tests EXAM I
Exam potentially Monday, Feb 19 |
| 7 | Feb 24 | Groundwater basics (Chapter 7) |
| 8 | March 2 | Watertable Contour Maps |
| 9 | March 9 | Well Design |
| | | SPRING BREAK MARCH 16 — 20 |
| 10 | March 23 | Determining drawdown from estimated aquifer characteristics |
| 11 | March 30 | Pump tests |
| 12 | April 6 | Pump tests, EXAM II, Exam potentially Monday, April 9 |
| 13 | April 13 | Groundwater velocity and practice problems |
| 14 | April 20 | Groundwater velocity and practice problems, Student Presentations |
| 15 | April 27 | Student Presentations All Week — Paper due Friday at the latest. |
| 16 | Final Exam | — May Something |

Presentation Rubric

Exemplary

- Speaks extemporaneously, perhaps relying on, but not reading notes or slides
- Knows the material
- Develops good rapport with the audience.
- Explanations are clear and at appropriate level for the audience
- Talks clearly and distinctly
- Material is well organized
- Slides are simple, clear, easy to read, and enough time is given to read or view each

Presentation of appropriate length

Good

Speaks extemporaneously, perhaps relying on, but not reading notes or slides
Knows the material reasonable well
Develops a fair rapport with the audience.
Explanations are clear, but not completely appropriate for the level of the audience
Talks clearly and distinctly
Material is well organized in a logical manner
Slides are simple, clear, easy to read, and enough time is given to read or view each
Presentation of appropriate length

Satisfactory

Relies too heavily on notes or material in the slides, speaks both extemporaneously, and reads material
Does not know the material as well as should be
Speaks at the audience, not to them
Explanations are somewhat hard to follow, or not at appropriate level for the audience
Talks clearly and distinctly
Material organization is O.K., but could be better
Slides are readable, but too complex
Presentation not completely within appropriate time constraints

Unsatisfactory

Reads notes or slides to the audience
Does not know the material
Does not appear to be speaking with the audience
Explanations are unclear and cannot be followed
Cannot be heard plainly
Material shows little thought to organization
Slides too complex and difficult to read. Not enough time is given to read or view each
Does not adhere to appropriate time constraints for presentation