Instructor: Stephen Shields  
Office: VIN 135  
Phone: 325.486.6934  
Dept. office: 325.942.2242  
E-mail: Stephen.shields@angelo.edu  

Office hours, Tuesday and Thursday 8:30 -10:30am, and Tuesday 3:00 – 4:00pm;  
Or contact me to set up an alternate time to meet.  

Course Materials  
Supplementary Readings: Papers of interest will be found in a folder on your blackboard webpage.  

Course description, content, and activities  
A quantitative overview of the hydrologic cycle including both surface and groundwater hydrology. Topics to include surface water, aquifer properties, groundwater, modeling, human use and abuse of water resources, contamination, and extraction. This course encompasses the occurrence, movement and quality of fresh water in the water cycle, including environmental problems and possible solutions. Case studies will be explored in part through readings and field trips.  

Grading  
- 10 in-class and/or out of class exercises (typically weekly) (30%)  
- Daily quizzes (lowest 4 will be dropped) (10%)  
- 1 field trip report (10%)  
- 1 individual research report and presentation (6%)  
- 1 group research report and presentation (6%)  
- 1 group field trip assignment and report (8%)  
- 1 mid-term exam (15%)  
- 1 final exam (15%)  

There will be no make-ups for homework, in-class activities, or field-trip assignments. Make-up exams will be given for tests only under extenuating circumstances. Prior email notification is required to permit a make-up exam.  

Both the midterm and final will include questions from field trips, readings and guest lectures. The exams may include conceptual, short-answer questions and calculations. The final will be cumulative but will focus on the second half of the course.  

Late penalties for assignments will be 10% per class if unexcused. Overall grades will be as follows:  
90 – 100 = A  
80 – 89 = B  
70 – 79 = C  
60 – 69 = D  
59 and below = F  

Grades may be rounded up at the discretion of the professor.  

Student learning outcomes
1) To practice techniques used in the field of Hydrology/Hydrogeology. Many of these are applicable to other fields. Some problem-solving techniques that you will learn and practice:
   a. Field applications of hydrology: surface water
   b. Field applications of hydrology: water from wells and groundwater
   c. Researching topics of hydrology/hydrogeology
   d. Quantifying water flow and discharge using mathematics
   e. Applying Darcy’s Law of flow
   f. Working in groups for field trip activities, in-class activities, and research assignments
   g. Reading scientific literature and writing professional reports
   h. Carefully defending your thinking when answering questions.

2) To learn the practical and theoretical applications of surface hydrology and subsurface hydrology.

3) Learn about the water resources of Texas, and public policy as related to water supply and contamination issues.

These learning outcomes are all assessed by grades on Exams, field trip assignments, research reports, and in-class activities.

**Attendance Policy**
Attendance is expected, it will be difficult to pass this class if you do not attend regularly and participate. Daily quizzes will be the first five minutes of every class. Failure to show up on time will result in zero grades on the daily quiz. The four lowest scores will be dropped.

**Cell Phones and Other Electronic Devices**
Please keep all electronic devices on vibrate or silent. The use of electronic functionality on your device, which is not authorized by the instructor during a test, may result in the forfeiture of your grade for that test.

**CLASS PREPARATION ASU EMAIL:**
Since class announcements will be routinely distributed via email and Blackboard, you will need to regularly check your ASU email account and our course Blackboard site (daily). All course correspondence will be through your ASU email account and Blackboard. ASU provides Internet and email services to you at any of the computer labs on campus. Call 942-2911 to set this up if necessary.

**GENERAL POLICIES RELATED TO THIS COURSE:**
All students are required to follow the policies and procedures presented in these documents:
- Angelo State University Student Handbook
- Angelo State University Catalog

**Academic Integrity**
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

**STUDENTS WITH DISABILITIES**
ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or
activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website at www.angelo.edu/ADA. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

**Ms. Dallas A. Swafford**  
*Director of Student Disability Services*  
325-942-2047  
dallas.swafford@angelo.edu  
Located in the *Houston Harte University Center 112*

**TITLE IX at ANGELO STATE UNIVERSITY**

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex. You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Boone, J.D.

You may submit reports in the following manner:

**Online:** www.angelo.edu/incident-form  
**Face to Face:** Mayer Administration Building, Room 210  
**Phone:** 325-942-2022  
**E-Mail:** michelle.boone@angelo.edu

For more information about resources related to sexual misconduct, Title IX, or Angelo State’s policy please visit: www.angelo.edu/title-ix.

**Religious Holy Day**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

**Syllabus Changes**

The faculty member reserves the option to make changes as necessary to this syllabus and the course content. If changes become necessary during this course, the faculty will notify students of such changes by email, course
announcements and/or via a discussion board announcement. It is the student’s responsibility to look for such communications about the course on a daily basis.

**INCOMPLETE GRADE POLICY (OP 10.11 Grading Procedures)**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required.

**Field Trip(s)**

Mandatory:
Date TBA (on a Saturday); Concho Valley Hydro Trip with Mr. Stephen Shaw of First View Resources and ASU.
Field Trip #2: TBA

**Guest Lectures**

TBA; week of 9/23 – 9/27

Join GEO (Geologic Exhibition Organization) and AAPG!

One of your most rewarding responsibilities as a Geoscience major or minor is the chance to participate in activities of GEO, our organization of geology students at ASU, and a student chapter of the American Association of Petroleum Geologists (AAPG), an international professional organization.

Other professional societies to consider joining:
NGWA – National Groundwater Association
GSA – Geological Society of America
AEG – Association of Engineering Geologists
**Tentative class schedule** (subject to change):

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
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<tbody>
<tr>
<td>8/27, 8/29</td>
<td>Introduction; origin of water on Earth, water cycle and properties of water (Chapters 1 and 2)</td>
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<tr>
<td>9/3, 9/5</td>
<td>9/2 Labor Day, Water cycle and properties of water; evaporation and precipitation (Chapter 2)</td>
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<tr>
<td>9/10, 9/12</td>
<td>Watershed delineation, fluvial geomorphology, runoff, flooding and drought</td>
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<tr>
<td>9/17, 9/19</td>
<td>Porosity and other hydraulic properties (Chapter 3)</td>
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<tr>
<td>9/24, 9/26</td>
<td><strong>GSA Phoenix</strong>, Guest Lectures and out of class assignments</td>
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<tr>
<td>10/1, 10/3</td>
<td>Porosity and other hydraulic properties (Chapter 4 and 6)</td>
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<tr>
<td>10/8, 10/10</td>
<td>Regional groundwater flow and aquifer properties (Chapter 7 and 8)</td>
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<tr>
<td>10/15, 10/17</td>
<td><strong>Review for Mid-Term, Midterm Exam (10/17)</strong></td>
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<tr>
<td>10/22, 10/24</td>
<td>Regional groundwater flow and aquifer properties (Chapter 7 and 8)</td>
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<tr>
<td>10/29, 10/31</td>
<td>Ground water and aquifer systems (Chapter 5) (<strong>Group presentations and reports due 10/31</strong>)</td>
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<tr>
<td>11/5, 11/7</td>
<td>Water quality and groundwater contamination (Chapter 10)</td>
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<td>11/12, 11/14</td>
<td>Well dynamics and well-field management (Chapter 11)</td>
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<td>11/19, 11/21</td>
<td>Hydrologic field methods (Chapter 12)</td>
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<tr>
<td>11/26, 11/28</td>
<td>Chemical qualities of water (Chapter 9) 11/28 Thanksgiving Break</td>
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<tr>
<td>12/3, 12/5</td>
<td>12/3 research papers due, Presentations/Final Exam review</td>
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<tr>
<td>12/10</td>
<td><strong>Final exam 10:30a-12:30p</strong></td>
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