

The Undergraduate Curriculum Committee recommends approval of the following:

1. Change in Courses

**ATMO 461. Broadcast Meteorology.**

Course description

From: Instruction in the practice of broadcast meteorology; practice in and preparation of weather forecast products and demonstration videotapes.

To: Instruction in the practice of broadcast meteorology; practice in and preparation of weather forecast products and demonstration videotapes. May be taken two times for credit with faculty advisor approval.

**GEOL 410. Hydrogeology.**

Lecture and lab contact hours

From: (3-0). Credit 3.

To: (2-2). Credit 3.

2. Change in Curriculum

**College of Science**  
Department of Statistics  
Minor in Statistics

3. Informational Items – GV Course Inventory Additions

**Texas A&M University at Galveston**

Request to add ARTS 150 to Galveston's course inventory

Request to add MUSC 226 to Galveston's course inventory

## **CHANGE IN COURSES**

C1

# Texas A&M University Departmental Request for a Change in Course Undergraduate ♦ Graduate ♦ Professional

• Submit original form and attachments •

1. Request submitted by (Department or Program Name): Department of Atmospheric Sciences

2. Course prefix, number and complete title of course: ATMO 461, Broadcast Meteorology

Attach a brief supporting statement for changes made to items 3a thru 3d, and 6 below.

3. Change requested

a. Prerequisite(s): From: \_\_\_\_\_ To: \_\_\_\_\_

b. Withdrawal (reason): \_\_\_\_\_

c. Cross-list with: \_\_\_\_\_

Cross-listed courses require the signature of both department heads.

d. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.

e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.

4. For informational purposes only, please indicate course number if this course will be stacked: \_\_\_\_\_

5. Complete current course title and current catalog course description:  
Broadcast Meteorology. Instruction in the practice of broadcast meteorology; practice in and preparation of weather forecast products and demonstration videotapes.

6. Complete proposed course title and proposed catalog course description (not to exceed 50 words):  
Broadcast Meteorology. Instruction in the practice of broadcast meteorology; practice in and preparation of weather forecast products and demonstration videotapes. May be taken twice for credit with faculty advisor approval.

7. a. As currently in course inventory:

Prefix		Course #		Title (excluding punctuation)																							
A	T	M	O	4	6	1	B	R	O	A	D	C	A	S	T	M	E	T	E	O	R	O	L	O	G	Y	
Lect.	Lab	SCH		CIP and Fund Code				Admin. Unit			FICE Code				Level												
0	0	0	2	0	1	4	0	0	4	0	1	0	0	0	2	0	3	5	1	0	0	3	6	3	2		

b. Change to:

Prefix		Course #		Title (excluding punctuation)																					
Lect.	Lab	SCH		CIP and Fund Code				Admin. Unit			Acad. Year		FICE Code				Level								

Approval recommended by:

Ping Yang *[Signature]* 12/19/13 *[Signature]*  
Department Head or Program Chair (Type Name & Sign) Date Chair, College Review Committee Date

*[Signature]* *[Signature]*  
Department Head or Program Chair (Type Name & Sign) Date Dean of College Date

Submitted to Coordinating Board by: \_\_\_\_\_ Chair, GC or UCC Date


Associate Director, Curricular Services \_\_\_\_\_ Date




January 29, 2014

## MEMORANDUM

**TO:** Office of the Registrar

**THROUGH:** Dr. Sarah Bednarz   
AOC Dean College of Geosciences

**FROM:** Dr. Ping Yang   
Department Head  
Department of Atmospheric Sciences

**SUBJECT:** **Change ATMO 461 to a repeatable course**

ATMO 461, Broadcast Meteorology, is currently a technical elective for METR majors. Students that are interested in pursuing a career in Broadcast will benefit from taking this course twice. The case studies in the Broadcast Meteorology course are based on current weather. Because students do not encounter the full range of weather events, during a single semester, students will work with different material if they repeat the course. By making this course repeatable, with faculty advisor approval, we can provide an additional technical elective to help students interested in pursuing a career in Broadcast Meteorology achieve their goals. If you have any questions please contact our Advisor, Missy Mathews, by email at [missy@tamu.edu](mailto:missy@tamu.edu), or by phone at 979-845-7688.



C2

Texas A&M University
Departmental Request for a Change in Course
Undergraduate ♦ Graduate ♦ Professional

• Submit original form and attachments •

- 1. Request submitted by (Department or Program Name): Geology and Geophysics
2. Course prefix, number and complete title of course: GEOL 410 Hydrogeology

Attach a brief supporting statement for changes made to items 3a thru 3d, and 6 below.

- 3. Change requested
a. Prerequisite(s): From: To:
b. Withdrawal (reason):
c. Cross-list with:

Cross-listed courses require the signature of both department heads.

- d. Change in course title and description. Enter complete current course title and current course description in item 5; enter proposed course title and proposed course description in item 6. Complete item 7 for change in title.
e. Change in course number, contact hours (lab & lecture), and semester credit hours. Complete item 7. Attach a course syllabus.
4. For informational purposes only, please indicate course number if this course will be stacked: GEOL 614

5. Complete current course title and current catalog course description:
Hydrogeology
Geologic conditions determining the distribution and movement of ground water and their effect on the hydrologic properties of aquifers.

6. Complete proposed course title and proposed catalog course description (not to exceed 50 words):

7. a. As currently in course inventory:

Table with columns: Prefix, Course #, Title, Lect., Lab, SCH, CIP and Fund Code, Admin. Unit, FICE Code, Level. Row 1: GEOL 410 HYDROGEOLOGY, 03000340060500021305, 003632

b. Change to:

Table with columns: Prefix, Course #, Title, Lect., Lab, SCH, CIP and Fund Code, Admin. Unit, Acad. Year, FICE Code, Level. Row 1: GEOL 410 HYDROGEOLOGY, 02020340060500021305, 14-15, 003632

Approval recommended by: John R. Giardino (Signature), Date 11/5/13, Chair, College Review Committee

Department Head or Program Chair (Type Name & Sign) Date, Chair, College Review Committee Date
Department Head or Program Chair (Type Name & Sign) Date, Dean of College Date (Signature), Date 12-4-13

Submitted to Coordinating Board by: Chair, GC or UCC Date

Associate Director, Curricular Services Date, Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu
Curricular Services - 02/11





Course title and number           GEOL 410: Hydrogeology  
Term                                    Fall 2014  
Meeting times and location       MWF 11:30-12:20PM; 104 Halbouty Building

### **Course Description and Prerequisites**

Geologic conditions determining the distribution and movement of ground water and their effect on the hydrologic properties of aquifers.

Prerequisites: Junior or senior classification or approval of instructor.

### **Learning Outcomes or Course Objectives**

Student will be able to do all of the following:

- 1) Use different concepts such as evaporation, infiltration, groundwater recharge, base flow to analyze hydrological cycle and surface-groundwater interaction.
- 2) Conduct quantitative calculation of base flow based on stream hydrographs.
- 3) Use three important physical parameters (porosity, hydraulic conductivity, and storativity) of aquifers to understand the groundwater flow systems.
- 4) Measure and calculate hydraulic head, elevation head, pressure head, and hydraulic gradient in the field.
- 5) Conduct calculation using Darcy's law for a variety of problems such as computing discharge of water between two paralleled rivers, computing contaminant travel time from a source to a discharge point, and calculating groundwater flow in horizontal and vertical directions.
- 6) Interpret local, intermediate, and regional groundwater flows, and the law of refraction for groundwater flow at the interface of two media with different hydraulic conductivity values.
- 7) Derive the groundwater flow governing equation and applying the equation for practical boundary value problems (BVPs).
- 8) Apply the concept of effective stress and seepage force for geo-engineering problems such as landslide and slope failure, uplifting, erosion of landform, seismic activity after injecting fluid to deep formation, groundwater-surface water interaction during the flooding, and overthrust faulting aided by groundwater.
- 9) Calculate freshwater-seawater interface in coastal aquifers and islands.
- 10) Compute drawdowns near a pumping well using Theis solution and leaky Theis solution.
- 11) Interpret different well testing results such as Pumping Test and Slug Test.
- 12) Calculate well capacity and well efficiency.



### Instructor Information

Name Dr. Hongbin Zhan  
Telephone number 979-862-7961 (o), 979-574-4819 (cell)  
Email address [zhan@geos.tamu.edu](mailto:zhan@geos.tamu.edu)  
Office hours Wednesday 3:00-5:00PM or by appointment  
Office location 259 Halbouty Building

### Textbook and/or Resource Material

Fetter, C. W., *Applied Hydrogeology*, Merrill Publishing Co., Columbus, OH, 592 pp., 4nd ed., 2001.  
Class notes from the instructor will be emailed to the students at the first day of class free of charge.

### Grading Policies

Grades will be based on demonstration of understanding of fundamental concepts in hydrogeology, and the ability to apply the concepts to conduct quantitative calculations of some commonly seen groundwater flow problems. An "A" indicates an excellent understanding of all concepts and the capability of interrelating the concepts into a seamless system, and the capability of applying the concepts for quantitative computation of complex groundwater flow problems. A "B" indicates the ability to apply knowledge and skills to solve complex problems. A "C" indicates a clear understanding of the concepts and the capability of performing most calculations correctly. In general, a "D" in this class indicates that a student has serious flaws in understanding the important concepts and is not capable of conducting quantitative calculations correctly. An "F" indicates that the student has a poor understanding of most concepts and cannot carry out the quantitative computation to most problems. The instructor will take attendance randomly and the summary of attendance will be taken into account for students whose numerical scores fall within 1.0 point of the boundaries between A-B (90), B-C(80), C-D(70), and D-F(60).

A student with an official medical, religious, and university excused absence will not be counted as absent. **Students should consult Student Rule 7 for attendance and excused absence.**

There are two exams (Midterm and Final) and a series of assignments and their weights towards the final grade are listed below.

**This class is stacked with GEOL 614 (Advanced Hydrogeology). A graduate student taking GEOL 614 must complete a term paper, which is not required for undergraduate students taking GEOL 410.**

The final grade is based on the following distribution of exams and homework assignments.

- homework assignments: 35% ;
- midterm exam: 30%
- final exam: 35% ;

Numerical grades on homework assignments, midterm exam and final exam will be rounded at the first decimal place (e.g. 89.50%→90%, 89.49%→89%). Letter grades for individual assignments will be computed as follows: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F <60%. No extra credit will be available.

## Course Topics, Calendar of Activities, Major Assignment Dates

Week	Topic	Required Reading
1	Hydrological Cycle; Management of groundwater.	Fetter Chapter 1.3, 1.5
2	Porosity.	Fetter Chapter 4.2
3	Groundwater potential and hydraulic head.	Fetter Chapter 5.1-5.5
4	Darcy's law and hydraulic conductivity.	Fetter Chapter 4.4
5	Aquifers, aquitards, and aquicludes.	Fetter Chapter 4.5, 4.7
6	Transmissivity and storativity of confined aquifers; Release of water from confined aquifers.	Fetter Chapter 4.10-11
7	Transmissivity and specific yield of unconfined aquifers.	Fetter Chapter 4.6, 4.8
8	Equations of groundwater flow; Analytical solutions of one-dimensional groundwater flow.	Fetter Chapter 5.7
9	Groundwater flow patterns; Groundwater and geology (effective stress, groundwater flow and faulting).	Fetter Chapter 8.6, class notes
10	Land subsidence; Groundwater and geotechnical engineering; Flood control.	Class notes
11	Sea water intrusion.	Fetter Chapter 9.7-9.8
12	Steady-state flow to a well (the Thiem solution).	Fetter Chapter 7.4.2
13	Transient flow to a well: the Theis method and pumping test.	Fetter Chapter 7.3
14	Transient flow to a well in leaky confined and unconfined aquifer and slug test.	Fetter Chapter 7.4.4

### Other Pertinent Course Information

Lab 1: Water budget and base flow calculations.

Lab 2: Map groundwater head distribution and groundwater flow magnitude and direction.

Lab 3: Apply Darcy's law for different sets of groundwater flow problems.

Lab 4: Identification and characterization of aquifers, aquitards and aquicludes.

Lab 5: Illustration of aquifer storativity.

Lab 6: Calculation of total stress, effective stress, and neutral stress.

Lab 7: Study land subsidence of Houston, TX; Shanghai, China; and Mexico City, Mexico.

Lab 8: Study seawater intrusion in Galveston, TX and California coast.

Lab 9: Case studies of cones of depression in Ogallala aquifer, USA and North China Plain.

Lab 10: Case study of pumping test interpretation.

Lab 11: Case study of slug test interpretation.

Lab 12: Case study of horizontal well and hydraulic fracturing

### References:

Freeze, A. R. and Cherry, J. A., *Groundwater*, Prentice Hall, Englewood Cliffs, NJ, 1979.

Bear, J., *Hydraulics of Groundwater*, McGraw Hill, New York, 567 pp., 1979.

Hiscock, Kevin, *Hydrogeology, Principles and Practice*, Blackwell Publishing, Oxford, UK, 2005.

### **Americans with Disabilities Act (ADA)**

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 believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit <http://disability.tamu.edu>

### **Academic Integrity**

*For additional information please visit: <http://aggiehonor.tamu.edu>*

*"An Aggie does not lie, cheat, or steal, or tolerate those who do."*

# **CHANGE IN CURRICULUM**

**D1**

# **CHANGE IN CURRICULUM**

**COLLEGE OF SCIENCE**  
DEPARTMENT OF STATISTICS  
MINOR IN STATISTICS

D1

# Texas A&M University Request for a Change in Curriculum

1. Request change for:  Degree Program  Minor  Certificate
2. Request submitted by (Department or Program Name): Department of Statistics
3. Program Designation and Name  
(e.g., B.A. in History, Minor in History, Certificate in European Union): Minor in Statistics

4. **Brief** description of change:  
 Currently students can use both STAT 414 and MATH 411 towards the minor in Statistics.  
 Change the requirement so that student may only use one of STAT 414 or MATH 411 towards a minor in Statistics.

5. Rationale for change:  
 The topics covered in STAT 414 and MATH 411 have about a 70% overlap. Thus, it is to the student's benefit to take a course other than MATH 411 if they have already taken STAT 414.

Use the checkboxes below to make sure that all information is included.

6. a. Proposed curriculum attached.  Yes  No  
 b. Current catalog curriculum with handwritten edits attached.  Yes  No  
 c. Current Howdy degree evaluation with handwritten edits attached.  Yes  No  
*Please make sure the attached proposed curriculum, catalog and Howdy degree evaluation match.*
7. a. Will degree program hours change (increase/decrease) due to the proposed curriculum changes?  Yes  No  
 b. If yes, degree program hours will change from: \_\_\_\_\_ to: \_\_\_\_\_  
 c. If yes, is the Texas Higher Education Coordinating Board form attached?  Yes  No  
<http://www.thecb.state.tx.us/index.cfm?objectid=A0F9F7FA-9A92-4F11-2756AD3BBFF01D60>
8. If proposed changes affect other unit(s), are letters of support attached?  Yes  No

**IMPORTANT NOTE:** Curriculum changes submitted through the approval process and fully approved by February (December-UCC/GC, January-Faculty Senate, February-President) will be effective in the next academic year. Changes requiring approval beyond the University should complete the internal approval process early in the fall semester whenever possible in order to ensure timely implementation.

**Approval recommended by:**

Michael Longnecker Michael Longnecker 12-13-2013  
 Department Head or Program Chair (Type Name & Sign) Date

[Signature] 1/8/14  
 Dean of College Date

[Signature] 12/20/13  
 Chair, College Review Committee Date

Chair, GC or UCC

Questions regarding this form should be directed to Curricular Services at 845-8201 or [sandra-williams@tamu.edu](mailto:sandra-williams@tamu.edu).  
Curricular Services - 07/12



**Area : Statistics Minor ( 15.000 credits ) - Not Met**

**Description :** No grade below a 'C' is acceptable.  
Student must not be an APMS or BS MATH major.

Met	Condition	Rule	Subject	Attribute	Low	High	Required Credits	Required Courses	Term
No		A.	STAT 211						
			Must make a grade of 'C' or better. MATH 151 and 152 are prerequisites.						
No	AND	B.	STAT 212						
			Must make a grade of 'C' or better. MATH 151 and 152 are prerequisites.						
No	AND	C.	Elective 9hrs						
			Must make a grade of 'C' or better. Select from STAT 307, 407, 408, 414, 415, 485, 489; MATH 411. (Cannot use both STAT 307 and 407) Also, STAT 485 and 489 must be approved by the STAT department.) <i>(Cannot use both STAT 414 and MATH 411.)</i>						

unofficial evaluation