GEOL 1301-002 Section 37307 **Fall 2017**
Professor Robert H. Blodgett

Natural Hazards and Disasters

Description

Survey of the Earth sciences through an examination of natural hazards including causes and effects of earthquakes, tsunamis, volcanoes, floods, landslides, hurricanes, tornadoes, wildfires, climate change, and impacts of extraterrestrial objects. Discussion will focus on the personal and societal adjustments to these hazards.

Rationale

As the world's population and economy grows, humans are contributing to a rapid change in the world's climate and are encountering natural hazards more frequently. College-educated consumers, voters, and decision-makers need to understand the scope and impact of these hazards and the limitations that science and technology have in reducing their negative effects. A scientific understanding of the natural processes which create these hazards can reduce anxiety and help deal with their impact.

Objectives

- Learn to read, interpret, and comprehend scientific information
- Understand how geoscientists investigate Earth and its systems
- Become familiar with natural hazards which threaten Central Texas and the ways to minimize the personal and societal consequences of these hazards
- Understand the occurrence, development and major effects of earthquakes, tsunamis, volcanic eruptions, flooding, subsidence, soil movement, mass wasting, severe weather, ocean waves and currents, wildfires, and asteroid/comet encounters
- Conduct this academic inquiry in a respectful and professional manner

Outcomes

Course-Level - upon successful completion of this course, students will be able to:

- describe the scientific method as applied in the Earth sciences
- describe common Earth materials and their relationship to natural hazards
- explain how Earth and Solar System processes create hazards to life and property
- describe and explain the most common methods used to mitigate and prepare for each type of hazardous natural process
- explain the causes and effects of global climate change

General Education - as a Core Curriculum course, students completing this course will demonstrate competence in:

- critical thinking in the gathering, analyzing, synthesizing, evaluating and applying information
- quantitative and empirical reasoning through the application of mathematical, logical and scientific principles and methods

Instructional Methods

This course will be taught in a lecture/discussion format illustrated with videos, maps, diagrams, digital photographs and content on Web sites. Student learning will be assessed with three in-class exams and a take-home assignment.

Registration

Section 37307 – 3:00-4:20 P.M. Tuesday and Thursday in NRG Rm. 2213
Prerequisite - Reading proficiency on Texas Success Initiative (TSI) testing or have a TSI exemption; a knowledge of high school and middle school mathematics is required.
Credit - Credit may not be received for GEOL 1301 and either GEOL 1305 or GEOL 1405. This is a general survey course that does not count towards a geoscience major.

Required Textbook

Textbook - Keller, Edward A., and DeVecchio, Duane E., 2015. Natural hazards; Earth's processes as hazards, disasters, and catastrophes (4th edition): New York, Routledge, 554 p. ISBN 978-0-321-93996-8.

Communication

Professor: Robert (Bob) H. Blodgett, Ph.D., P.G., Professor
Office Hours: 10:30 AM-Noon Tuesday and 4:20-5:05 PM Tuesday and Thursday, or by appointment, in NRG Room 2216; 10:30 AM-Noon on Monday and Wednesday in HLC Room 2106
Telephone/ voice mail: 512-223-4276
Electronic mail: *rblodget @ austincc.edu* - checked at least daily Monday through Friday; Students are also expected to check their ACCmail accounts regularly during the work week.
Web page: *www.austincc.edu/rblodget*

Assessment and Grading

Examinations

Three in-class, closed-book tests will contain multiple-choice, matching, and short- and long-answer questions drawn from lectures, handouts, and reading assignments. The final examination on the last day of class will emphasize material covered since the last mid-term examination. No examinations will be given early. If a single mid-term exam is missed, the final exam score will be recorded for that missed exam. Scores of 70 or greater on the final examination will substitute for the lowest mid-term examination score. Review sheets will be distributed before each examination. You must notify the professor of any mistakes or disagreements in scoring within two days after a corrected exam has been returned to the class.

Grading

Your final course average will be calculated as follows:

30%	Midterm Exam 1	40%	Final Examination
30%	Midterm Exam 2		

There is no "extra credit." The following scale will be used to determine your course grade:

90-100%	- A	70-79%	- C	Below 60%	- F
80-89%	- B	60-69%	- D		

Students whose final course average is 59%, 69%, 79%, or 89% will be advanced to the next higher grade if their final exam score shows improvement over their mid-term exam scores.

Course Policies

Participation

You are expected to attend all classes, participate in class discussion, and work with your professor and classmates to learn the course content. This may include distributing and collecting course materials, setting up and storing computers, participating in demonstrations, and cleaning up the classroom.

Withdrawal

If you decide to withdraw from this class, it is your responsibility to protect your academic record by withdrawing no later than Monday, November 27, 2017. You must print out confirmation of your withdrawal to verify its completion. The professor also reserves the right to withdraw a student for not complying with course/ACC policies or for not meeting course objectives. Departmental policy forbids the professor from withdrawing you after November 27, 2017. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges and universities. With certain exceptions, all course withdrawals automatically count towards this limit. Students who enroll for the third or subsequent time in a course taken since Fall 2002, may be charged higher tuition for that course. Details on this policy can be found in the ACC Catalog: *www.austincc.edu/catalog/*.

Incomplete Grade
An incomplete (grade of "I") will only be given if extenuating circumstances, such as illness or death of a loved one, prevent a student from completing the final exam. Incompletes must be requested in writing with documentation of the extenuating circumstances. If a grade of I is given, the final exam must be taken no later than Apr. 2, 2018.

See attached "ACC Policies and Services" for additional policies

Studying

Science courses generally require a different approach to studying than other courses. In this course you will need to conceptualize things in three dimensions, understand complex concepts, and learn a whole new vocabulary for describing your planet. You will improve your performance if you:

- read each textbook chapter
- re-read the Concepts in Review section of each chapter
- take notes from both the textbook and lecture
- answer the "Check Your Understanding" questions scattered throughout each chapter
- learn the key terms highlighted in bold type in each assigned chapter.

Many students find it useful to make flash cards with the definitions and natural hazards significance of terms. You may also find it beneficial to study in groups with your classmates. Many students underestimate the amount of time needed to pass this course. At a minimum, you should spend 2 hours outside of class studying for every hour you spend in class. A free tutor may be available at an ACC Learning Lab; check *http://sites.austincc.edu/ees/tutoring-and-learning-labs/* after the first week of classes for locations and hours.

Classroom Etiquette

You are expected to be seated and ready for class on time, and not leave your seat during lecture. Take a seat near the door if you arrive late or need to leave early. Please notify the professor if you have to arrive late or leave early on a regular basis. As common courtesy, do not interrupt the professor or classmates when they are speaking, do not carry on conversations during lectures, and turn off audible alarms on your electronic equipment. Departmental policy prohibits the use of personal laptop computers in the classroom. Texting is only allowed at designated times - you are expected to focus on course content and not multi-task.

GEOL 1301 Course Schedule*

Date	Topic	Chapter
Aug. 29	Introduction	Preface, 1
Aug. 31	Earth Systems	1, App. A
Sept. 5	Earth Materials	App. B
Sept. 7	Geologic Time and Earth's Interior	2, App. D
Sept. 12	Plate Tectonics	2
Sept. 14	Earthquakes and Seismic Waves	3
Sept. 19	Earthquakes - Effects and Mitigation	3
Sept. 21	Tsunamis - Characteristics and Causes	4
Sept. 26	Tsunamis - Warning and Mitigation	4
Sept. 28	Volcanoes - Processes and Effects	5
Oct. 3	Volcanoes - Effects and Mitigation	5
Oct. 5	**EXAM 1** (Preface, Chap. 1-4, Appendices A, B & D)	-
Oct. 10	Hydrologic Cycle	6
Oct. 12	Flooding and Floodplains	6
Oct. 17	Mass Wasting	7
Oct. 19	Subsidence, Karst & Soil Movement	8
Oct. 24	Introduction to Meteorology	9
Oct. 26	Thunderstorms	9
Oct. 31	Lightning and Tornadoes	9
Nov. 2	Extratropical and Tropical Cyclones	10
Nov. 7	Extratropical and Tropical Cyclones	10
Nov. 9	**EXAM 2** (Chap. 5-9)	-
Nov. 14	Coastal Processes and Hazards	11
Nov. 16	Coastal Processes and Hazards	11
Nov. 21	Introduction to Climate Change	12
Nov. 23	**Thanksgiving**	-
Nov. 28	Effects of Climate Change	12
Nov. 30	Mitigation of Climate Change	12
Dec. 5	Fire and Wildfires	13
Dec. 7	Wildfire Mitigation/ Solar System Astronomy	13, 14
Dec. 12	Impacts and Extinctions	14
Dec. 14	**FINAL EXAM** (Chap.10-14 and review topics)	-

*Schedule changes may occur during the semester. Any changes will be announced in class.

ACC POLICIES AND SERVICES

Attendance/Class Participation: Regular and punctual class attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.

Incompletes: An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Statement on Scholastic Dishonesty: A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process & other policies at *http://www.austincc.edu/current-students***.**

Student Rights and Responsibilities: Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Statement on Students with Disabilities: Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Student Accessibility Services (SAS) office. Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed. Students who have received approval for accommodations from SAS for this course must provide the instructor with the 'Notice of Approved Accommodations' from SAS before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the 'Notice of Approved Accommodations' from the student. Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations. Additional information is available at *http://www.austincc.edu/sas*.

Safety Statement: ACC is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at *http://www.austincc.edu/ehs*. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at: *http://www.austincc.edu/emergency/*. Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

Concealed Handgun Policy: The ACC concealed handgun policy ensures compliance with Section 411.2031 of the Texas Government Code (also known as the Campus Carry Law), while maintaining ACC's commitment to provide a safe environment for its students, faculty, staff, and visitors. Beginning August 1, 2017, individuals who are licensed to carry (LTC) may do so on campus premises except in locations and at activities prohibited by state or federal law, or the college's concealed handgun policy. It is the responsibility of license holders to conceal their handguns at all times. Persons who see a handgun on campus are asked to contact the ACC Police Department by dialing 222 from a campus phone or 512-223-7999. Refer to the concealed handgun policy online at austincc.edu/campuscarry.

Use of ACC email: All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at *http://www.austincc.edu/accmail/***.**

Testing Center Policy: Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have an ACC Photo ID, the Course Abbreviation and Course Number, the Course Synonym, the Course Section, and the Professor's Name. Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at http://www.austincc.edu/testctr/**.**

Student and Instructional Services: ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: *http://www.austincc.edu/current/*. ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: *http://www.austincc.edu/tutor*. A Learning Lab Technician at any ACC Learning Lab can provide you with help setting up your ACCeID, ACCmail, or ACC Blackboard.