

GEOGRAPHY 1401-02; WEATHER AND CLIMATE (Lecture)
Spring Semester 2017 (4 credit hours: Lecture – 75% and Labs-25%)

Professor: Dr. Samuel Adu-Prah
Office: LDB Room 324
Phone: 936-294-2478

Class Room: 215 Lee Drain Building (LDB)
Class Time: TR: 11:00-12:20 pm
Office Hours: Monday 9:00am -2:00pm or
Thursday: 2:00 –4:00 pm OR by
appointment

E-Mail: sxa054@shsu.edu
Course Website: [SHSU Blackboard](#)

COURSE DESCRIPTION:

This course will present and explore the introductory concepts of the physical processes and patterns that control our Earth's atmospheric system. In addition, topics like weather forecasting, air pollution and climate change, will also be incorporated into the course. There is a separate lab component (included in the course 4 credit hours) you have to register separately. The lab component of the course will reinforce and supplement concepts learned in class.

Course Objectives: Upon completion of this course, students should be able to:

- a) analyze, describe, and diagram the basics of major atmospheric processes including energy, pressure, wind, precipitation, air masses, fronts, and storm systems.
- b) perform basic calculations pertinent to these processes (fundamental algebra skills assumed).
- c) describe and diagram how these processes are linked in a system.
- d) analyze, describe and diagram the spatial patterns of weather systems.
- e) describe some of the impacts of weather on human activity.
- f) describe all of the different climates/biomes of the world and the reasons for each locale.
- e) articulate the different arguments for each side of the climate change debate.

By increasing knowledge of the geography of weather and weather-related phenomena, this course will allow students to further understand the physical and environmental system within which we live.

TEXTBOOK AND OTHER MATERIALS: The primary book for the class:

1. Gillespie, B. M., D. I. Netoff, and J. W. Tiller, 2014. *eWeather and Climate*. 7th edition, The Start Group, Huntsville, Texas. (This is an E-book, You will be provided with a code when you purchase the Lab manual at the **Campus Bookstore**.)
2. Other readings may be used and will be announced as the semester progresses. Such additional material and/or reading may be placed on blackboard, on reserve in the library or distributed in class.

Your Reading Responsibilities:

Because of time limitations, it will not be possible to discuss all assigned reading material in class. This means that:

The greatest emphasis on tests will be placed on lecture material; and, I assure you that on an exam I will not ask about obscure information in the text. As a general rule, *most*, if not all material you will be tested on will be covered in class to some degree. However, you should learn key concepts and vocabulary in the assigned readings.

Reading and study of the assigned material is an important preparation for this course. Certain assigned material will also be useful to you as a reference for key terms and ideas. **HOWEVER**, it is important to understand that **THERE IS NO SUBSTITUTE FOR ATTENDING CLASS**. Due to the nature of the course, some material that will be discussed in class will not be found in the books or readings assigned in class. Class lectures will draw from a variety of sources, and goes beyond information covered in any assigned readings.

Lecture Outlines:

The course will be somewhat geared toward a traditional lecture format. Whenever possible, classroom lectures in Power Point format will be posted on the course website available on Blackboard (usually the night before). However, keep in mind that some lectures and course discussions cannot be posted on Blackboard. While these outlines can be very useful as study tools, I would discourage you from totally relying on them – they are simply outlines and will not include all important material. **MOREOVER, BLACKBOARD WILL MOST LIKELY BE UNAVAILABLE AT CERTAIN TIMES DURING THE SEMESTER**. An inability to access lecture outlines from Blackboard (either due to a system problem OR simply because they are not available) does **NOT** constitute a valid excuse for missing an exam – thus, it would be wise to avoid waiting until the night before an exam to print them out and/or study them!

ATTENDANCE AND CLASSROOM OBLIGATION:

Students are expected to attend class on time on a regular basis. In accordance with university policy, attendance will be taken regularly and used to aid in your semester-end evaluation. Thus, regular attendance will allow you to earn free points, while failure to attend class may result in lowering of grades. *Any student missing 20 % of the course will NOT pass and you will NOT be counted present if you arrive to class late and attendance has already been taken.* It is the student's responsibility to acquire information of material covered while absent (including handouts and readings distributed and/or assigned in class). Students are also responsible for any changes in assigned material or due dates. **MAKE-UP ASSIGNMENTS WILL NOT BE GIVEN WITHOUT A DOCUMENTED EXCUSE.**

EVALUATION:

Course Grading

Homework Assignments	80 points	5%
Exam 1	100 points	15 %
Exam 2: Midterm Exams	100 points	15%
Exam 3:	100 points	15%
Final Exams: Exam 4	100 points	20%
Attendance & Participation	20 points	5%
Total Score	500 points	75%

Plus Lab work grade: 25%

Grading will be on the scale: 90 - 100% - A Range
 80 - 89% - B Range
 70 - 79% - C Range
 60 - 69% - D Range
 0 - 59% - F Range

TOPICAL Outline/ Subject to change

CHAPTERS IN EBOOK

The Earth's Place in Space ----- Chap 1

Cosmic Beginnings
 Comparative Planetology
 Earth's Life Support System
 Vertical Zonation of the Atmosphere
 Origin and Evolution of the Atmosphere

Air Temperature ----- Chap 2

Solar Energy
 Electromagnetic Radiation
 Heat Transfer Processes
 Fate of Insolation on Earth
 Controls of Insolation and Absorption
 Greenhouse Gases
 Temperature: Vertical Variation in the Troposphere
 Temperature: Horizontal Patterns on the Earth's Surface
 Temperature: Daily and Seasonal Variations
 Global Energy Budget
 Temperature Scales and Sensible Temperature

Exam 1: Thursday, Feb 9, 2017

Air Pressure and Winds ----- Chap 3

Temperature and Pressure
 Wind Direction and Velocity
 Cyclones and Anticyclones
 Global Pressure and Wind belts
 Surface Wind Belts
 Local and Upper Level winds

Atmospheric Moisture ----- Chap 4

Special Properties of Water
 Phase Changes
 The Hydrologic Cycle
 Factors that Control Evapotranspiration
 Relative Humidity
 Forms of Condensation and Deposition
 Precipitation

Exam 2: Midterm Exams: Thursday March 9, 2017

Air Masses, Fronts and Frontal Cyclones-----Chap 5

Air Masses

North American Air Masses

Fronts, Cyclones and Anticyclones

Development of Frontal Cyclones

Severe Weather-----Chap 6

Thunderstorms

Hurricanes

Exam 3: Tuesday April 13, 2017

Climate and Ecosystems-----Chap 7

Climate Classification

Basic Climate Patterns

Climograms

Koeppen Climate Classification

Climate Change-----Chap 8

Evidence of Past Climate Change

Theories of Climate change

Current and Future Trends and Impacts of Global Climate Change

Regional Trends and Impacts on Climate Change in the United States

Final Exam: Thursday, May 11, 2017; 12.00 pm – 2.00 pm

*The course syllabus is a general plan for the course; deviations from this schedule may be necessary and will be announced to the class.

Important Dates;

March 13 – 17: Monday through Friday: **Spring Recess- No Class**

April 4 - 7 **Conference- No Class/Assignment**

Thursday, May 11, 2017 – 12.00 pm – 2.00 pm Final Exam

Exams:

The exams will be comprised of subjective (multiple choice, matching, true/false) questions.

Exam questions will be drawn from lecture, textbook readings, visual presentations, films, guest speakers and classroom discussion.

Make-up Exams:

In the event that a student is absent from an exam, he or she will take a comprehensive final.

Thus, in this event the weight of final exam will be equivalent to two exams. It is the student's responsibility to contact me within 24 hours after the test date for this option to be considered.

Make-ups will only be given if the student provides a documented excuse.

Academic Honesty:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action; *NO QUESTIONS ASKED!* The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. I suggest you read the Student Handbook regarding the official University policy regarding academic honesty.

STUDENTS WITH DISABILITIES POLICY:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

Religious Holy Days

If a student desires to be excused from class, assignment, or a test to participate in activities associated with a religious holy day, then the student must notify the instructor of each scheduled class that he/she will miss for religious reasons. In such cases, the student will be required to take the test or submit the assignment early—unless there are good reasons for not being able to do so and the instructor has agreed to those reasons.

Special Circumstances

If unusual circumstances arise during the semester, such as a medical problem, death in the family, etc., that adversely affects your attendance **PLEASE discuss this with me immediately and provide documentation.** Under these conditions, I will gladly do my best to accommodate your situation by excusing absences, allowing late work to be turned in within a reasonable time period, and so on. However, if you wait until after-the-fact, at the end of the semester, to let me know that you were experiencing these adverse circumstances, there is *nothing* I can do about it at that time. **I will not retroactively make accommodations and I will not give extra credit assignments to make up for grade deficiencies of any type.**

Visitors in the Classroom

Unannounced visitors to the classroom must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom. This policy is not intended to discourage occasional visiting of classes by responsible persons.

IMPORTANT: Final Remarks:

Hopefully we will all enjoy ourselves exploring weather & climate this semester. As mentioned above, I hope that everyone feels free and willing to ask questions, make comments, etc. However, the size of the class and the acoustics of the classroom will make it imperative that people refrain from engaging in casual conversations with one another. If you are talking to a neighbor it becomes very difficult for people around you to hear anything. Thus, I'm asking you ahead of time to **NOT** strike up conversations amongst yourselves (*AND DO NOT TALK ON THE PHONE – IN FACT TURN ALL CELL PHONES OFF WHEN ENTERING THE CLASSROOM!*). This behavior not only disrupts the learning experience, it is also disrespectful. If you have something to say about the course material, please share it with the rest of us.