

**OFFICE OF ACADEMIC AFFAIRS**  
**COURSE APPROVAL FORM**  
**COURSE CHANGE**



College: CoS Prefix/Subject Code: ESS Course Number: 111

Course Title: Climate and Global Change Credit Hours: 4 Cross Listed: \_\_\_\_\_

Nature of Change:  
*(Check all that apply)*

Effective Date: Fall 2017

Add to Charger Foundations

Course Title Change

Old Title:

New Title:

Course Number Change Old Number: \_\_\_\_\_ New Number: \_\_\_\_\_

Course Description Change

Old Description:

Intro to climate system including natural and human-induced changes in this system. Includes greenhouse effect, ozone depletion, pollution, urban heat island processes, continental drift effects, glacial melting and sea level changes, atmospheric and ocean circulations, solar activity variability.

New Description:

Intro to the atmosphere and climate system, including weather systems, climate extremes, and natural / human-induced changes in the atmosphere - climate system. Major topics discussed include greenhouse effect, solar impacts on climate, El Nino, climate change, atmospheric and ocean circulations, cyclones, hurricanes, thunderstorms, and tornadoes.

Course Requisite Change

Old Requisite:

New Requisite:

Course Restriction Change

Old Restriction:

New Restriction:

Fee Change

Old Fee: \_\_\_\_\_

New Fee: \_\_\_\_\_

Move to Inactive

Return to Active

Delete

**Justification of Change:**

The course name and description are to be changed to more accurately reflect how the course is currently taught; in addition to climate and global environmental change it also now includes a weather component to help it serve as an introductory course for subsequent weather-related atmospheric science courses.

Department Chair: Lawrence Carey

Digitally signed by Lawrence Carey  
DN: cn=Lawrence Carey, o=UAH, ou=ATS,  
email=chair@nssc.uah.edu, c=US  
Date: 2016.10.14 09:24:48 -05'00'

Grad. Council: \_\_\_\_\_

College Dean: Emanuel A. Waddell Jr.

Graduate Dean: \_\_\_\_\_

College Curriculum Committee: Emanuel A. Waddell Jr.

Undergrad Curriculum Cmte: \_\_\_\_\_

Provost: \_\_\_\_\_

Charger Foundations Cmte: \_\_\_\_\_

**Acknowledgements from other units:**

Department Chair: \_\_\_\_\_

College Dean: \_\_\_\_\_

## ESS 111 – Weather, Climate, and Global Change

**Course:** ESS 111

**Semester:** Fall 20XX

**Class Time:** T,R 3:55p – 5:15p

**Class Location:** Morton Hall Rm 200

**Lab Instructor:** TBA

**Lab Location:** Salmon Library Computer Labs

**Instructor:** Mr. Ryan Wade

**Office:** SWIRLL 120

**Office Hrs:** MWF 8:00-9:00, 13:30-15:30

TR 9:00-11:00

**Email:** ryan.wade@uah.edu

**Office Phone:** 256.824.4026

### Course Description:

Introduction to the atmosphere and climate system, including weather systems, climate extremes, and natural / human-induced changes in the atmosphere - climate system. Major topics discussed include greenhouse effect, solar impacts on climate, El Nino, climate change, atmospheric and ocean circulations, cyclones, hurricanes, thunderstorms, and tornadoes.

### Course Goals:

ESS 111 is a survey course of weather and climate for all majors. In this class we will cover a wide variety of topics to help you gain an understanding of the science behind daily weather, climate and climate change, as well as current-events topics such as ice storms, heat waves, El Nino, and global warming. It is NOT the aim of the course to make scientists out of all of you; but to help you gain a basic understanding of the atmosphere, and to develop critical thinking skills so that you can understand and intelligently discuss media articles, news reports, and science articles related to weather and climate.

You are expected to come to class prepared to discuss the day's topic. Regular class attendance is critical for your understanding of the material in this course. There will be material presented or discussed in class that may not be posted to Canvas. Although I will make every effort to post material on the course web site, your comprehension of the material will be much greater if you are actually in class when it is presented.

If you are having problems with the course material, I strongly urge you to come and talk to me sooner rather than later. I can't do anything if you wait until the last week of classes to come and talk to me about problems you've been having all semester. Remember that education is a two-way street – I can only present the material and facilitate discussion, but you must bring to class an intellectual curiosity and a willingness to learn. In order to get the most out of any class, you MUST take an active role in your own education!

### About the labs:

The labs associated with this class are designed to both enhance your understanding of lecture material, as well as to introduce some material that we simply don't have time to cover in lecture. As such, the labs don't always coincide exactly with what is going on in lecture. Although there are several lab sections associated with this class, don't play "musical lab periods". That is, unless you have permission in advance from the Lab Instructor, only attend the lab section that you are enrolled in. The lab rooms have very limited seating capacity. The lab section will make up 25% of your final grade for this class. Your Lab Instructor will have more information for you when you attend your first lab.

### Required Text and Materials:

Aguado, E. and Burt, J.E.: Understanding Weather and Climate

You will be expected to access lecture notes, readings, assignments, and quizzes from the course web site in Canvas.

### Attendance

Roll will be taken every day. Students are encouraged to attend ALL lectures as we will review key concepts from each lecture topic and some material that are not included in the powerpoint notes. Each class will build upon ideas learned in the previous classes. Lectures will also include periodic guest speakers, whose lecture topics will also be included on exams. Attendance during guest lectures is mandatory. If a student must miss class for a medical reason or for an officially sanctioned University student activity (those identified by the Provost), he/she should let the instructor know as soon as possible, and communicate with fellow classmates to obtain missed lecture material.

**Grading:**

Grades will be assigned based on the following percentages:

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

Exam 1	15%
Exam 2	15%
Exam 3	15%
Homework Quizzes	15%
Final Lab Average	25%
Attendance & Participation	15%

\*\*\*Missed Class Penalty: -10% for every 5 unexcused absences \*\*\*

**Missed Class / Exam / Quiz / Assignment Policy**

Make-up exams and quizzes will not be given except for an illness documented by a physician, official college sponsored activities with appropriate documentation, or a death in the immediate family with a note from the Dean's office.

**Homework Quizzes**

Students will be responsible for answering assigned homework questions, but these homework assignments will not be directly handed in to the instructor. Rather, you will take an open notes online quiz through the course's Canvas webpage and will be available generally starting Monday of each week and will be due each week (except where noted) on Friday at 5pm. Canvas will stop accepting submission at 5pm on Friday, but bear in mind that it's a good idea to get these completed well ahead of time. If for some reason Canvas gives you technical problems and you can't submit answers to the questions, you **MUST** document this in an email to IT prior to 5pm on Friday if you want us to consider allowing you additional time to complete the questions, though don't expect this excuse to work more than once during the semester. Otherwise, these questions **MUST** be turned in on time for credit, and late assignments will not be accepted. There will be approx. 8-10 of these weekly question assignments, and together they will count for 15% of the final grade in the course.

**Computers in the Lab**

Use of the computers in the lab is for class assignments and assigned learning activities only.

**Complaint Procedure:**

If you have difficulties or complaints related to this course, your first action usually should be to discuss them with me. If such a discussion would be uncomfortable for you or fails to resolve your difficulties, you should contact Dr. Larry Carey, Chair of the Atmospheric Science Department. Dr. Carey's office is NSSTC, Room 4042. His telephone number is (256) 961-7872. If you are still unsatisfied, you should discuss the matter with Dr Emanuel Waddell, Associate Dean of the College of Science. The Associate Dean's office is located in C207 of the Materials Science Building (MSB). His phone number is (256) 824-6844 and email address is [adeancos@uah.edu](mailto:adeancos@uah.edu).

**UAlert Emergency Notification System:**

UAHuntsville has implemented the UAlert emergency notification system. UAlert allows you to receive time-sensitive emergency messages in the form of e-mail, voice mail, and text messages. Everyone who has a UAHuntsville e-mail address will receive emergency alerts to their campus e-mail address. In order to also receive text and voice message alerts, you are asked to provide up-to-date phone contact information. Participation in UAlert text and voice messaging is optional, but enrollment is strongly encouraged. **You can't be reached through UAlert unless you participate.** The information you supply is considered confidential and will not be shared or used for purposes other than emergency notification. To review your UAlert account, add or update phone and alternate e-mail addresses, and set the priority for your contact methods, please visit the UAlert web site: <http://ualert.uah.edu>.

**Disability Services:**

I would like to hear from anyone who has a disability that may require some modification of seating, testing, or other class procedures. Please see me after class or during my office hours to discuss appropriate modifications. In order to obtain exam or assignment accommodations, the student must provide me with a *letter of accommodation* within the first two weeks of class. More information can be obtained by contacting the Office of Disability Support Services at 256.824-1997 ([dssproctor@uah.edu](mailto:dssproctor@uah.edu)). <http://www.uah.edu/health-and-wellness/disability-support>

## Academic Misconduct

From the Code of Student Conduct in the UAH Student Handbook (<http://www.uah.edu/dos/student-conduct/handbook>), academic misconduct is defined as follows.

### 7.2.1 Academic Misconduct

All forms of academic dishonesty, including, but not restricted to, the following:

- a. Copying from another student's exam paper.
- b. Using materials during a test not authorized by the person giving the exam.
- c. Collaborating or failing to prevent collaboration during a test with any other person by giving or receiving information without authority.
- d. Stealing, buying, or otherwise obtaining all or part of an exam.
- e. Selling or giving away all or part of an exam.
- f. Bribing any other person to obtain an exam or information about an exam.
- g. Substituting for another student, or permitting any other person to substitute for oneself, to take an exam.
- h. Submitting as one's own, in fulfillment of academic requirements, any theme, report, term paper, essay, or other written work; any speech or other oral presentation; any painting, drawing, sculpture, musical composition or performance, or other aesthetic work; any computer program; any scientific experiment, laboratory work, project, protocol, or the results thereof; etc., prepared totally or in part by another.
- i. Selling, giving, or otherwise supplying to another student for use in fulfilling academic requirements any work described above.
- j. "Plagiarism," defined as the use of any other person's work (such work need not be copyrighted) and the unacknowledged incorporation of that work in one's own work offered in fulfillment of academic requirements. This includes the use and incorporation, without acknowledgement, of the wording or expressions (even if paraphrased), information, facts, arguments, analysis, or ideas of another.
- k. Submitting in fulfillment of academic requirements, if contrary to course regulations, any work previously presented, submitted, or used in any course.
- l. Falsifying records, laboratory results, or other data used in a course.
- m. Cheating or deceit in any other manner.

Academic misconduct is serious; it erodes the academic integrity of our University and the value of a UAH degree. As such, instances of academic misconduct will be dealt with by the instructor according to Section 7.10 of the Student Code of Conduct. Academic sanctions can be imposed by the instructor that are appropriate to the circumstance and can be as severe as awarding an 'F' for the relevant graded assignment or even for the entire course.

Most examples of academic misconduct are obvious. *However, some issues such as proper attribution and referencing in your work may raise some legitimate questions. If you have any questions regarding academic misconduct issues (e.g., plagiarism etc.), please feel free to ask the instructor for a clarification.* Although students are ultimately responsible for their own conduct, the instructor is available to help you avoid academic misconduct in the completion of assignments.

### Cell Phone and Other Portable Electronic Devices (laptops, tablets, pads) Policy

In order to facilitate a productive teaching and learning environment, cell phones voice, texting, web, and Internet Apps capabilities are not to be used during class period. Please mute your cell phone if you bring it to class. If your phone rings/beeps, then please quickly mute it. Unless otherwise approved by the instructor, portable electronic devices, (smart phones, laptops, tablets, and pads) are allowed for electronic note taking only.

### Changes in Course:

Since all classes do not progress at the same rate, the instructor may wish to modify the above requirements or tentative schedule as circumstances dictate. For example, the instructor may wish to change the number and frequency of exams, or the number and sequence of assignments. However, the students must be given adequate notification. Moreover there may be non-typical classes for which these requirements are not strictly applicable in each instance and may need modification. If such modification is needed, it must be in writing and conform to the spirit of this policy statement.

### Course Content and Tentative Schedule:

Please note that changes to this schedule will likely change as the semester progresses. A more detailed schedule will be posted and regularly updated on the course Canvas web site.

<b>Semester Timeline</b>	<b>Lecture Categories</b>	<b>Lecture Topics</b>
Week 1	Global Planetary Scale	Structure of the Atmosphere
Week 2	Global Planetary Scale	Global Temperature Patterns Global Wind Belts & Pressure Patterns
Week 3	Global Planetary Scale	Ocean Currents El Nino / La Nina
Week 4	Global Planetary Scale	Solar Radiation / Energy Transfer Greenhouse Effect
Week 5	Global Planetary Scale	Climate Classification
Week 6	Global Planetary Scale	Paleoclimate / Proxy Temperature Data Natural / Historical Climate Change
Week 7	Global Planetary Scale	Anthropogenic Causes for Climate Change Climate Change Impacts
Week 8	Synoptic / Continental Scale	Atmospheric Force Balances Pressure & Wind
Week 9	Synoptic / Continental Scale	Air Masses & Fronts
Week 10	Synoptic / Continental Scale	Continental Mid-latitude Cyclones Gulf Coast Cyclones & Nor-Easters
Week 11	Synoptic / Continental Scale	Precipitation Patterns Flooding
Week 12	Mesoscale / Regional Scale	Topography Influence on Weather & Climate Urban Heat Island
Week 13	Mesoscale / Regional Scale	Cloud Formation Precipitation Processes
Week 14	Mesoscale / Regional Scale	Thunderstorms
Week 15	Mesoscale / Regional Scale	Hurricanes
Week 16	Microscale	Tornadoes Microclimates
	<b>Exam #3</b>	