Introduction to Meteorology – ATSC 3403
Department of Physical and Environmental Sciences
Spring 2019

A. COURSE INFORMATION

Course number/section: ATSC 3403.001
Class meeting time: MWF 12:00pm – 12:50pm
Class location: OCNR 132
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Lindsey Hayden
Office location: NRC 1102
Office hours: Monday - Thursday 3:00pm – 5:00pm
E-mail: lhayden@islander.tamucc.edu
Appointments: Email or stop by

C. COURSE DESCRIPTION

Introduction to meteorology and the dynamics of planetary atmospheres. Emphasis on atmospheric accretion, composition, evolution, structure, and dynamics. Lab exercises cover basic measurement techniques, weather maps, and forecasting. Safety training given during a laboratory meeting early in the semester is required for continued participation in this course.

Over the duration of this course, we will be following a particular historical weather phenomena, taking what we learn in each unit of the course and applying it to our understanding of that phenomena. The weather event in question will be decided by the instructor, and will change every semester. Depending on data availability and potential future interesting weather, the instructor may have to change which weather event is described during the course.

D. PREREQUISITES AND COREQUISITES

Prerequisites: None

Corequisites:
Lab ATSC 3403.101 or .102; SMTE 0096

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s):
Earlier editions may also be used but there will be some differences in pages, figures, etc.

**Optional Textbook(s) or Other References:**
If needed, additional material will be provided through Blackboard.

**F. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

The goal of this course is to provide students with an opportunity to learn about the basics of meteorology and other aspects of atmospheric science. Students will be required to attend laboratory sessions when scheduled. As a result of the in-class, various online supplements, and laboratory learning provided in this class, the student will be expected to:

1) Give an overview of the science of meteorology and how it is practiced (i.e. methods of observation, forecasting techniques, etc.).
2) Explain the details of Earth’s atmosphere (i.e. atmospheric composition, general circulation patterns, and vertical structure of the atmosphere).
3) Define the main physical properties and characteristics of the atmosphere that control short to long-term processes (i.e. temperature variations, atmospheric moisture, atmospheric stability, precipitation, etc.).
4) Describe the processes that control the motion of air masses on all spatial scales (wind systems, air masses and fronts, severe weather) and the effects they have on atmospheric properties.
5) Explain the non-meteorological aspects of atmospheric science (i.e. air pollution and pollution transport, climate change).
6) Integrate all specific concepts of meteorology and atmospheric science into a generalized multidisciplinary analysis of the atmosphere, its currents and contents, and resulting climates.

**G. INSTRUCTIONAL METHODS AND ACTIVITIES**

1. Presentation of new material and concepts using powerpoint, videos, etc, all of which will be provided during class period. Some materials will also be uploaded to course website for study purposes.
2. Individual and collaborative learning assignments to enhance new concepts.
3. Optional discussion time between student and instructor outside the lecture environment.
H. MAJOR COURSE REQUIREMENTS AND GRADING

There will be a variety of assessments in this course which will comprise the overall grade. See Table 1 for a tabular summary of grade weights.

1. Exams
   - There will be 4 exams in this course, including a “cumulative” final exam. Together, the exams will be worth 40% of the final grade.

2. Homework
   - Homework assignments will be given periodically to ensure and assess student comprehension, worth 25% of your final grade.

3. Final Project
   - This course will also have a final project. The tentative plan is to assign each student a significant historical/recent weather event and have them present on it and write a paper. Depending on time and number of students, it may become a group project. The final project will be worth 20% of the final grade.

4. Lab Work
   - Finally, there are ten labs that are worth 15% of the overall grade that must be completed according to the lab course the student is enrolled in. Rubrics for the lab reports will be given out by your lab teaching assistant.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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</thead>
<tbody>
<tr>
<td>Exams</td>
<td>40</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Lab Reports</td>
<td>15</td>
</tr>
<tr>
<td>Final Report</td>
<td>20</td>
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</tbody>
</table>

Grades will be assigned using the format in Table 2. These percentages will apply for all class materials as well as the final course grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60%</td>
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</tbody>
</table>
Students are required to take exams during the lecture period, except in cases of university-excused absences. This includes any materials required to be scanned and e-mailed as part of the exam. Makeup exams will be administered only in the case of serious illness, medical emergency, or as determined by the instructor. In order to receive a makeup exam, you must do the following:

1. Contact me or leave a message with the departmental secretary before the scheduled exam time, preferably with a university accepted excuse documentation.

2. Schedule a date and time for the makeup exam with me prior to the exam if possible. If scheduling prior to the exam is not possible, you must provide appropriate documentation and explanation. I will not contact you regarding your missed exam.

3. Exams not made up within one week of the original exam date (excluding long-term medical emergencies, etc.) will be forfeit.

Please note, a final grade of “I,” or “incomplete,” will be awarded only in rare circumstances and only when there is a documented medical emergency, family emergency, or legal reason for not completing the required course work by the end of the semester. Awarding an incomplete requires a written agreement between instructor and student outlining how and when the work will be completed.

I. COURSE CONTENT/SCHEDULE

*Table 3: Course units breakdown with tentative due dates for each unit assignment.*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Dates</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Ch1, Ch2</td>
<td>1/14-1/18</td>
</tr>
<tr>
<td>2</td>
<td>Ch3, Ch4</td>
<td>1/21-1/25</td>
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<tr>
<td>3</td>
<td>Ch5, Ch6</td>
<td>1/28-2/1</td>
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<tr>
<td>4</td>
<td>Review, Exam 1</td>
<td>2/4-2/8</td>
</tr>
<tr>
<td>5</td>
<td>Ch7</td>
<td>2/11-2/15</td>
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<tr>
<td>6</td>
<td>Ch8</td>
<td>2/18-2/22</td>
</tr>
<tr>
<td>7</td>
<td>Ch9, Ch10</td>
<td>2/25-3/1</td>
</tr>
<tr>
<td>8</td>
<td>Review, Exam 2</td>
<td>3/4-3/8</td>
</tr>
<tr>
<td>9</td>
<td>Ch11, Ch12</td>
<td>3/11-3/15</td>
</tr>
<tr>
<td>10</td>
<td>Ch13</td>
<td>3/18-3/22</td>
</tr>
<tr>
<td>11</td>
<td>Ch14</td>
<td>3/25-3/29</td>
</tr>
<tr>
<td>12</td>
<td>Ch15</td>
<td>4/1-4/5</td>
</tr>
<tr>
<td>13</td>
<td>Review, Exam 3</td>
<td>4/8-4/12</td>
</tr>
<tr>
<td>14</td>
<td>Ch16, Ch17</td>
<td>4/15-4/19</td>
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A discussion forum will also be provided as a way for students to ask each other questions and get explanations from their peers as well as the instructor, if needed. This is not required and will not reflect on students’ grades. However, students are expected to be respectful at all times and follow TAMUCC’s standards of ethics.

**Note:** The dates listed above are tentative and are subject to change at any time. Changes in this course schedule may be necessary and will be announced to the class by the Instructor.

### COURSE POLICIES

**Attendance/Tardiness**
Attendance will not be taken for this course. Nevertheless, you are all adults; you are paying for your education and you are responsible for your own choices regarding the amount of work you put into this class.

**Late Work and Make-up Exams**
Students are required to take exams within the allowed timeframe, except in cases of University-excused absences. Makeup exams will be administered only in cases of serious illness or a medical emergency, as described above.

**Extra Credit**
There is a chance some small extra credit assignments may be given, with point values dependent on the amount of work required. Individual extra-credit assignments will not be given.

**Cell Phone Use**
Cell phones should not be used during class and will not be allowed during exams and presentations. If you bring your cell phone, please make sure it is either off or on silent.

**Computer Use**
Computers may be used for note taking if that is your preference. If you do not have the proper computing resources and need help finding computer resources, you can contact the TAMUCC IT department.

### J. COLLEGE AND UNIVERSITY POLICIES
- Academic Integrity (University)
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade
is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  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 call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

K. **OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in the Center for
Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

Please note, the instructor reserves the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if necessary. Any such changes will be announced by the instructor in a timely manner during regularly scheduled lecture periods.