Course Goals
In this course we will discuss the unique characteristics of desert weather and climate. We will explore the atmospheric processes responsible for creating these desert climates, and in doing so we will gain an understanding of processes that shape local weather and climate worldwide. By the end of the semester students taking this class will:

- Be familiar with deserts around the world
- Gain an understanding of the importance of desert meteorology locally and globally
- Understand various ways to classify arid regions
- Know the various atmospheric processes that cause aridity
- Know the unique meteorological conditions present in arid regions and understand the physical processes that shape desert climates and how these differ from those in non-arid regions
- Be familiar with the types of severe weather present in desert regions
- Understand how the human body responds to desert climates

Contact Information and Office Hours
Professor: Dr. John Cassano
Classroom: SEEC S126
Meeting Time: TR 1:00-2:15PM
Class web site: CU Canvas web page and at http://atoc.colorado.edu/~cassano/atoc4750
Office: SEEC C279
Office Hours: Tuesdays 12 to 1PM, Wednesdays 1 to 2PM, and by appointment
e-mail: john.cassano@colorado.edu

Feel free to contact me if you have any questions or concerns regarding this class. I will have two regularly scheduled office hour per week and you can also contact me by e-mail. If you need to talk to me at a time other than during my regularly scheduled office hours please e-mail me to setup an appointment. I am always happy to meet with students at times other than my regularly scheduled office hour.

If you send me an e-mail during the semester you should receive a response from me within 1 to 2 days. If you do not receive a response it is likely that I did not receive or missed your e-mail, so please resend your message or talk with me during class or office hours.

If you discuss any items with me before or after class please follow up with an e-mail to confirm our conversation.

Class web site
The class web site contains a copy of the course syllabus, outline of the lecture notes, a schedule of class lectures, homework assignments and due dates, exam dates, links to weather web sites, and honor code policies. In addition, important class announcements, including quiz dates will be posted on the web site, so make sure to check the web site at least once per week for any important information. Access to the class web site is required as all homework assignments, quiz announcements, and lecture notes will be posted on this web page.

Grades will be posted on the CU Canvas version of the class web site.

Textbook and Clickers
The required textbook for this class is Desert Meteorology by Thomas Warner. Copies of this text are available at the university bookstore. You will also be required to have a CU iClicker for this class. You must register your clicker on MyCUInfo. Directions on how to do this are available here:

https://oit.colorado.edu/tutorial/cuclickers-iclicker-remote-registration
Prerequisites
The prerequisite for this course is one basic weather course, such as ATOC 1050, ATOC 1060, ATOC 3050 or ATOC 3600. If there are any basic meteorology concepts which you don't remember please talk with Professor Cassano during office hours to review those concepts.

Course Requirements
Students are expected to read the textbook (reading assignments are listed at the end of this syllabus) and to attend the class lectures. The lectures will cover some, but not all of the material in the textbook, and will also present information not contained in the textbook. Homework, exams and quizzes will be based on information from the textbook and the class lectures. Lecture notes will be posted on the class web site. Students may wish to print or bring an electronic version of these notes to each lecture to use as an outline for taking notes during the class. Students are expected to both ask and answer questions during the class lectures.

Grading, Exams, and Homework
Your final grade in this course will be made up of:
- 2 mid-term exams (15% each)
- 1 final exam (15%)
- 8 quizzes and 7 in-class activities (35%)
- 5 homework assignments (15%)
- In-class clicker questions (5%)

Your final letter grade in this class will be determined based on the following letter grade divisions:
- A: Final grade greater than or equal to 92.5%
- A-: Final grade from 90.0% to 92.4%
- B+: Final grade from 86.7% to 89.9%
- B: Final grade from 83.3% to 86.6%
- B-: Final grade from 80.0% to 83.2%
- C+: Final grade from 76.7% to 79.9%
- C: Final grade from 73.3% to 76.6%
- C-: Final grade from 70.0% to 73.2%
- D+: Final grade from 67.5% to 69.9%
- D: Final grade from 65.0% to 67.4%
- D-: Final grade less than 65.0%

The dates of all exams and due dates for all homework assignments are listed at the end of this syllabus and on the class web page. The dates for quizzes and in-class activities will be announced in class and on the class web page under the Class News link at least one class period before the scheduled quiz or activity.

Exams and quizzes will consist of short answer questions. No make-up exams or quizzes will be offered. If you miss an exam or quiz you will receive a grade of zero for that exam or quiz. Exam dates can only be rescheduled if they conflict with other official university activities (e.g. participation on an athletic team). If you need to miss a regularly scheduled exam it is your responsibility to discuss this with Professor Cassano before the scheduled date of the exam, and you will be expected to take this exam at a date before the regularly scheduled exam date.

In-class activities will be group exercises. All students in each group will receive the same grade for these assignments. Students that are not present in class during the in-class activities will receive a grade of zero for that assignment and will not be able to make-up the missed activity.

Missed quizzes and in-class activities cannot be made up but the lowest 3 quiz and in-class activity grades (including zero grades for missed quizzes and in-class activities) will be dropped at the end of the semester.

Homework assignments will consist of multiple questions and problems from the class textbook and must be typed. You may turn in a hardcopy of your homework or e-mail this to Professor Cassano as a PDF file. Homework assignments are due by the end of class on the dates listed on the class schedule. Late homework assignments will not be accepted and will receive a grade of zero. Homework assignments will be graded on check plus (A), check (B) and check minus (C) grading scale.

Note: Students registered for the graduate level of this course (ATOC 5750) will be required to complete additional problems as part of their homework assignments.
Clicker questions will be asked in most classes. Students will earn 1 point for answering each question and 1 additional point for giving the correct answer. Students that earn at least 90% of the total number of possible clicker points over the semester will receive full credit (5% of final class grade) for their clicker score. Students that earn less than 90% of the total clicker points will receive a reduced clicker grade based on the number of points they earned.

Accommodation for Disabilities
If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

Classroom Behavior
Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the Student Code of Conduct.

Honor Code
All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

All students caught violating the honor code in this class will receive a final class grade of F. Cheating and academic dishonesty will not be tolerated in this class.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation
The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct intimate partner abuse (including dating or domestic violence), stalking, protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website.

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

Religious Holidays
Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams,
assignments or required attendance. In this class, please contact Professor Cassano two weeks before any conflicts to arrange for appropriate accommodations. See the campus policy regarding religious observances for full details.

How to succeed in this class

- Read the appropriate sections of the textbook and review class lecture notes before each class period
- Attend the lectures and ask and answer questions during class
- Do not miss lectures
- Earn as many clicker points as possible (remember, clicker points are worth half of a letter grade)
- Check the class web page regularly for the date of quizzes and in-class activities and other class news
- All homework assignments must be typed – assignments that are not typed will receive a grade of zero
- Turn in all homework assignments on time – no late assignments will be accepted
- Show all necessary work on your homework assignments, quizzes, in-class activities and exams – partial credit will be awarded as appropriate.
- Do not miss exams, quizzes or in-class activities
- Ask for help if you don’t understand something
- Contact Professor Cassano as soon as possible if you have any questions or concerns about this class
# Lecture, Homework, and Exam Schedule

The following is a tentative schedule of class lectures, due dates for homework assignments, and exam dates. Any changes to this schedule will be posted on the class web site under the *Class News* link.

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>27 Aug</strong></td>
<td><strong>29 Aug</strong></td>
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<tr>
<td>Introduction / Chapter 1</td>
<td>Chapter 2a</td>
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<tr>
<td><strong>3 Sept</strong></td>
<td><strong>5 Sept</strong></td>
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<tr>
<td>Chapter 2a</td>
<td>Chapter 2b</td>
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<tr>
<td><strong>10 Sept</strong></td>
<td><strong>12 Sept</strong></td>
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<tr>
<td>Chapter 2b</td>
<td>Chapter 2b</td>
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<tr>
<td><strong>17 Sept</strong></td>
<td><strong>19 Sept: Homework #1 Due</strong></td>
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<tr>
<td>Chapter 2b</td>
<td>Chapter 3</td>
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<td><strong>24 Sept</strong></td>
<td><strong>26 Sept</strong></td>
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<tr>
<td>Chapter 3</td>
<td>Exam 1</td>
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<tr>
<td><strong>1 Oct</strong></td>
<td><strong>3 Oct</strong></td>
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<tr>
<td>Chapter 4a</td>
<td>Chapter 4a</td>
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<tr>
<td><strong>8 Oct</strong></td>
<td><strong>10 Oct</strong></td>
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<tr>
<td>Chapter 4b</td>
<td>Chapter 4b</td>
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<td><strong>15 Oct:</strong></td>
<td><strong>17 Oct: Homework #2 Due</strong></td>
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<td>Chapter 5</td>
<td>Chapter 5 / Chapter 6</td>
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<td><strong>22 Oct</strong></td>
<td><strong>24 Oct</strong></td>
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<td>Chapter 7</td>
<td>Chapter 9</td>
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<td><strong>29 Oct</strong></td>
<td><strong>31 Oct: Homework #3 Due</strong></td>
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<tr>
<td>Chapter 10</td>
<td>Chapter 10 / Chapter 11</td>
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<td><strong>5 Nov</strong></td>
<td><strong>7 Nov</strong></td>
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<tr>
<td>Chapter 11</td>
<td>Exam 2</td>
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<td><strong>12 Nov</strong></td>
<td><strong>14 Nov</strong></td>
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<tr>
<td>Chapter 12</td>
<td>Chapter 13</td>
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<td><strong>19 Nov</strong></td>
<td><strong>21 Nov: Homework #4 Due</strong></td>
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<tr>
<td>Chapter 13</td>
<td>Chapter 16</td>
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<tr>
<td><strong>26 Nov</strong></td>
<td><strong>28 Nov</strong></td>
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<td>No Class</td>
<td>No Class</td>
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<td><strong>3 Dec</strong></td>
<td><strong>5 Dec: Homework #5 Due</strong></td>
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<tr>
<td>Chapter 17</td>
<td>Chapter 19</td>
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<tr>
<td><strong>10 Dec</strong></td>
<td><strong>12 Dec</strong></td>
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<tr>
<td>No Class</td>
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**Exam 1**: Chapters 1, 2 and 3  
**Exam 2**: Chapters 3, 4, 5, 6, 7 and 9  
**Final Exam**: Comprehensive with focus on chapters 10, 11, 12, 13, 16, 17 and 19  

Final Exam: Sunday 15 Dec 4:30-7:00 PM SEEC S126
Homework Assignments
Students registered for ATOC 4750 only need to answer the questions listed below.
Students registered for ATOC 5750 need to answer the questions and solve the problems listed below.

Homework 1 (due Thursday 15 September)
Chapter 2 – questions 1, 3, 4, 5, 7, 10, and 12; problems 3, 5

Homework 2 (due Thursday 13 October)
Chapter 3 – questions 1, 2, 3, 5, 6, 7, 9, and 11; problems 2, 3
Chapter 4 – questions 1, 3, and 5; problems 2, 3, 5, 6, 7, 8

Homework 3 (due Thursday 27 October)
Chapter 6 – questions 1, 5
Chapter 7 – questions 2, 4, 6
Chapter 9 – questions 1, 2, 3, 4, 5; problems 1, 2, 3

Homework 4 (due Thursday 17 November)
Chapter 10 – questions 1, 2, 3; problems 1, 2, 3
Chapter 11 – questions 1, 2, 3, 4; problems 1, 2, 3
Chapter 12 – questions 1, 2; problems 1, 2, 3

Homework 5 (due Thursday 1 December)
Chapter 13 – questions 2, 3, 4; problems 1, 2
Chapter 16 – questions 1, 2, 5, 7
Chapter 17 – questions 1, 2, 3, 5

Reading Assignments

Chapter 1 – all pages
Chapter 2 – all pages, Note: The chapter section “Some basic concepts of atmospheric structure and dynamics” is a review of basic concepts and is optional
Chapter 3 – Start of chapter up to “African deserts” section; You may wish to skim the rest of the chapter (especially the figures) that discuss details of the world’s deserts
Chapter 4 – all pages
Chapters 5 to 7 – none, but review as needed to answer homework questions
Chapter 9 – all pages
Chapter 10 – all pages
Chapter 11 – all pages
Chapter 12 – all pages
Chapter 13 – all page
Chapter 16 – all pages
Chapter 17 – all pages
Chapter 19 – all pages