Use of Class Materials
The materials used in this class, including, but not limited to, exams, quizzes, and homework assignments are copyright protected works. Any unauthorized copying and selling of the class materials is a violation of federal law and may result in disciplinary actions being taken against the student. Additionally, the sharing of class materials without the specific, express approval of the instructor may be a violation of the University's Student Honor Code and an act of academic dishonesty, which could result in further disciplinary action. This includes, among other things, uploading any and all class materials (including class notes) to web sites for the purpose of selling and/or sharing those materials with other current or future students.

“Non Technology” Classroom (for “in person” class)
I prohibit the use of laptop computers and smart phones (including texting) during class time unless specified by the instructor and/or TA. This is a “zero tolerance” policy - we will be monitoring the classroom and will stop lecture and ask anyone using a device to turn it off. My expectation is that you are here to listen to and take part in lecture. Accordingly, your class notes must be taken with paper and pen.

Class Location and Time - TTh 11:00am-12:15pm in JES (Jester) A121A

INSTRUCTOR: Troy Kimmel, Senior Lecturer CV BIO (Email: tkimmel@austin.utexas.edu)
TEACHING ASSISTANT: Amelia Sosnowski (Email: amelia.eisenhart@utexas.edu)
OFFICE: Robert L. Patton Hall - RLP (Just east of UT SAC/Student Activity Center), Room 3.412
OFFICE HOURS (9 Hours Weekly): M/W 12:30 pm-3:30pm -- Tu/Th 12:30pm-1:50pm & 3:30pm-4:00pm
PHONES: Home Office 512-335-6472 - auto forwards to my cell (Use at all times other than class/time/office hours)
         UT Office 512-232-1590 (Office hours only), UT Geography Switchboard 512-471-5116

CLASS OBJECTIVES:
Our study of weather and climate is intended for Geography / Environment majors and all others interested in a broad brush examination of the atmospheric and climatic sciences. This study will be introductory in nature with only a very basic use of mathematics. We will start with a study of meteorology. From this foundation, we will go into the different aspects of the atmosphere and then, later, into climatological matters and discuss the various climatic regimes including that of Texas and the local area.

ATTENDANCE:
While this is probably not going to be the hardest course you've ever taken (or will take) in your college career, it is intensive. This is due, primarily, to the amount of material to be covered during the semester. It is, therefore, my philosophy that your success in this course will vary directly with your class attendance. Be aware of the fact that attendance will be taken on a regular basis, through the SquareCap classroom management application (which will be necessary for you to purchase); we will be using this application through your smart phone web browser. This attendance information will be used in the computation of your final class grade. Excessive absences will work against you while perfect attendance can help you to the next highest letter grade in borderline situations at the end of the semester. Regarding our class time, promptness is expected; you should make every effort to be in the classroom or on line at the times indicated. Late arrivals are an interruption to the class material being presented and are unfair to your fellow students that have made the effort to be on time.

UNIVERSITY OF TEXAS / POLICY ON SCHOLASTIC DISHONESTY:
In this class, there is zero tolerance for students who violate university rules on scholastic dishonesty with all suspected cases turned over to the University's Dean of Students office. Penalties for scholastic include the possibility of failure of course and dismissal from the University. Since dishonesty harms the individual, fellow students and the integrity of the University, policies on scholastic dishonesty will be STRICTLY ENFORCED in this class.

AMERICANS WITH DISABILITIES ACT (ADA):
The University of Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259, 471-6441 TTY, 866-329-3986 video phone.
If you have documentation regarding accommodations from the Dean of Students office, you must meet with me, in person and during office hours, as early as possible in the semester to discuss exact accommodations. When you come to this meeting, you will be required to provide written documentation from the Services for Students with Disabilities. Accommodations are NOT effective until you meet with me in office hours with your paperwork. No exceptions.

TEXTBOOK MATERIAL:
We will utilize the following textbook during the semester:
Essentials of Meteorology (8th Edition) - C. Donald Ahrens - Required (No other publisher material needed, so new or used OK)
Goode's World Atlas (23rd Edition) - Recommended
These books are available at the University Coop and other bookstores. In addition, Cengage, our main textbook publisher, offers other options (especially if you have several classes requiring Cengage textbooks) as well as e-texts at https://www.cengage.com/unlimited.
As always, shop around for the best price for all of your textbooks.
GRADING PROCEDURE:
Your final grade will be determined by your numerical performance on the examinations as noted:

Examination #1 200 points
Examination #2 200 points
Examination #3 200 points
Place Name Examination 50 points
Examination #4 200 points
Attendance Pop Quizzes/Exercises 50 points
Final Cumulative Exam 300 points

Only three of the regular examination scores will count; the lowest of the four grades will be dropped (see MAKE-UP EXAMINATIONS). All numerical scores will be added together to arrive at a possible 1000 points at the end of the semester, where, when utilizing the UT “Plus” / “Minus” Final Grade Grading System and applying it to our 1000 point grading system...

900-933 = A- (GPA earned = 3.67), 934-1000 = A (GPA earned = 4.00)
800-833 = B- (GPA earned = 2.67), 834-866 = B (GPA earned = 3.00), 867-899 = B+ (GPA earned = 3.33)
700-733 = C- (GPA earned = 1.67), 734-766 = C (GPA earned = 2.00), 767-799 = C+ (GPA earned = 2.33)
600-633 = D- (GPA earned = 0.67), 634-666 = D (GPA earned = 1.00), 767-799 = D+ (GPA earned = 1.33)
0-599 = F (GPA earned = 0.00)

All exams in this class, with the exception of the PLACE NAME EXAM, are given outside of our class time during the evening hours (see the class material time line on the fourth page of this syllabus for the four exact dates).

All examinations will be objective (multiple choice). Exams will not be returned to you although your exam key (showing you the number of the question you missed) will be available through Canvas after each exam; If you want to see an exam or go over your answers, you must bring a paper copy of your exam key or a piece of paper indicating the questions you missed during office hours. Any questions regarding exams will be brought forth within the specified number of days after the exam date otherwise the grade is considered final.

MAKE-UP EXAMINATIONS:
There will be NO make-up of the four regular examinations under ANY CIRCUMSTANCES. It's precisely for the reasons of sickness and other unplanned absences as well as for the occasional "bad" test day that I allow the lowest of your regular four examination scores to be dropped. Also, please note that you are required to take the final exam on the date and time as specified by the University (no excused absences).

EXAMINATION DAYS:
In order to ensure honesty in the classroom (and given the class size for this particular class and section), please note that I have set guidelines in reference to examination days:
# Beginning with the handout of the examinations, I expect silence
# All material that you bring with you on examination day will be placed on the floor under your seat
# No headwear (caps, hats, hoodies) will be worn while in our classroom on examination days
# Once the examination is distributed, there will be no leaving the classroom for any reason.

CLASSROOM / CAMPUS EMERGENCY ACTION PLANS:
The status of University of Texas campus activities in times of emergency (i.e., severe/inclement weather) along with some important procedures in case of emergencies on our campus as well as in our classrooms can always be found on the University of Texas Emergency Web Page.
The University of Texas maintains Emergency Action Plans that addresses emergencies that could potentially affect the our community. You can reference the various plans here.
Our UT Siren System is used in times of emergencies when it is necessary for you to "shelter in place" in campus buildings (remain in or go to the nearest building on campus when the siren is activated and remain there until the "all clear" is given). The UT Siren System, as part of policy, is tested monthly on the first Wednesday of every month between 11:50 am and 12:00 noon. Please don't take the siren system tests for granted; be ready to take action if the siren system is activated!
We will discuss, during the first class day of the session, our emergency plan for our specific classroom in case of fire, severe/inclement weather and other different situations. Please take this discussion seriously and ask any questions that you may have!!

UT POLICY ON EMAIL NOTIFICATION
Instructor to student email is a recognized and accepted form of official communication here at the University of Texas. It is critically important that (1) you make sure to have your current and most frequently checked email address on file in UT Direct and (2) you check it on a daily basis. I will send class email frequently during the semester and you'll be given updates and change notices in references to lectures as well as exams.
### GRG301K Class Note Outline

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUBJECT MATTER</th>
<th>CHAPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 Jan -</td>
<td>Introduction to Weather, Climate and the Atmosphere</td>
<td>Ch 1</td>
</tr>
<tr>
<td>14 Feb</td>
<td>Earth-Sun Relationship; Heat Transfer &amp; Balance; Greenhouse Effect, Energy Balance</td>
<td>Ch 2, 3</td>
</tr>
<tr>
<td>(8 Class</td>
<td>Latent Heat, Latitudinal Heat Balance; Heat and Temperature; Temperature Scales, Data, Uses</td>
<td>Ch 3</td>
</tr>
<tr>
<td>Sessions)</td>
<td>Moisture, Moisture Measurements; Atmospheric Stability; Dew/Frost; Cloud Formation; Fogs Types and Formation</td>
<td>Ch 4, 5</td>
</tr>
</tbody>
</table>

**Mon / 18 Feb .. 700pm-830pm.. JES A121A.. EXAMINATION #1 (Covered in class lecture material - Roughly Ch 1 - 5)**

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUBJECT MATTER</th>
<th>CHAPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 Feb -</td>
<td>Cloud Classification, Types/Features; Precipitation Formation/Types</td>
<td>Ch 5</td>
</tr>
<tr>
<td>14 Mar</td>
<td>Atmospheric Pressure; Pressure Readings; The &quot;Standard&quot; Atmosphere; Global Scale/Upper Level Winds; Forces at Work; Wind Measurement</td>
<td>Ch 6</td>
</tr>
<tr>
<td>(7 Class</td>
<td>General Air Circulation; Jet Streams, El Nino/La Nina/ENSO; Local Scale Winds; Air Masses; Weather Patterns; Cyclogenesis</td>
<td>Ch 7, 8</td>
</tr>
<tr>
<td>Sessions)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wed / 13 Mar .. 700pm-830pm.. JES A121A .. EXAMINATION #2 (Covered in class lecture material - Roughly Ch 6 - 8)**

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUBJECT MATTER</th>
<th>CHAPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 Mar -</td>
<td>High and Low Pressure Areas; Fronts and Associated Weather</td>
<td>Ch 8</td>
</tr>
<tr>
<td>18 Apr</td>
<td>Weather Forecasting</td>
<td>Ch 9</td>
</tr>
<tr>
<td>(7 Class</td>
<td>Introduction to Thunderstorms; Thunderstorm Hazards - Lightning, Hail, Flash Floods</td>
<td>Ch 10</td>
</tr>
<tr>
<td>Sessions)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tues / 02 Apr .. During Class ... JES A121A ... PLACE NAME EXAM**

**Mon / 22 Apr .. 700pm-830pm.. JES A121A .. EXAMINATION #3 (Covered in class lecture material - Roughly Ch 9-10)**

<table>
<thead>
<tr>
<th>DATE</th>
<th>SUBJECT MATTER</th>
<th>CHAPTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 Apr -</td>
<td>Tornadoes</td>
<td>Ch 10</td>
</tr>
<tr>
<td>07 May</td>
<td>Tropical Meteorology</td>
<td>Ch 11</td>
</tr>
<tr>
<td>(5 Class</td>
<td>Introduction to Climatology and Climate Classification</td>
<td>Ch 13</td>
</tr>
<tr>
<td>Sessions)</td>
<td>Koppen Climate Types A (Tropical) and B (Arid)</td>
<td>Ch 13</td>
</tr>
<tr>
<td></td>
<td>Koppen Climate Types C (Subtropical) and D (Temperate)</td>
<td>Ch 13</td>
</tr>
<tr>
<td></td>
<td>Koppen Climate Types E (Polar) and H (Highland)</td>
<td>Ch 13</td>
</tr>
<tr>
<td></td>
<td>US/Texas/Austin Climate Classification &amp; Climate Change</td>
<td>Ch 14</td>
</tr>
</tbody>
</table>

**Wed / 08 May .. 7:00pm-8:30pm.. JES A121A.. EXAMINATION #4 (Covered in class lecture - Roughly Ch 10-14)**

**Thu / 09 May .. In Class Time .. JES A121A... FINAL REVIEW SESSION**

**Mon / 13 May -**

**Fri / 17 Dec ... TBA ... RLP 3.412... FINAL OFFICE HOURS**

**Sat / 18 May ... 9:00am - 12 noon... Location TBA... FINAL GRG301K CUMULATIVE EXAMINATION**
This is a list of geographic locations of which all graduating high school and college students should be aware. Put your atlas skills to work by using your Goode’s World Atlas (strongly recommended), get to know the actual locations of each place listed here.

**GLOBAL SCALE FEATURES**

- Equator
- * Tropic of Cancer
- * Tropic of Capricorn
- Arctic Circle
- * Antarctic Circle
- * North Pole
- South Pole
- * Prime Meridian
- International Date Line

**CONTINENTS**

- Europe
- * Africa
- * North America
- South America
- * Asia
- * Antarctica
- Australia

**OCEANS**

- Atlantic
- * Pacific
- * Indian
- Arctic

**SEAS, BAYS, GULFS, STRAITS, CHANNELS, PASSAGES, CANALS**

- Mediterranean Sea
- * Strait of Gibraltar
- * Dardanelles
- Black Sea
- * Suez Canal
- * Red Sea
- * Arctic
- * Persian/arabian Gulf
- * Bay of Bengal
- * Gulf of Alaska
- * Hudson Bay
- * Caribbean Sea
- * Panama Canal
- * North Pole
- * Windward Passage
- * Strait of Magellan
- South Pole
- * Cape of Good Hope
- * Cape Horn
- * South Pole
- * Yucatan Channel
- * Bering Sea
- * Prince William Sound

**MAJOR ISLANDS AND ISLAND GROUPS**

- Greenland
- * Iceland
- * Greater Antilles
- Lesser Antilles
- * British Isles
- * Madagascar
- Cyprus
- * Sicily
- * Borneo
- New Guinea
- * Taiwan
- * Japan
- * Mediterranean Sea
- * Hawaiian Islands
- * New Zealand
- * Strait of Hormuz
- * Tahiti
- * Panama

**OCEAN CURRENTS**

- North Equatorial Current
- * Equatorial Counter Current
- * South Equatorial Current
- Gulf Stream
- * Labrador Current
- * Canary Current
- * East Brazil Current
- * Japan (Kuroshio) Current
- * California Current
- Alaska Current
- * Peru (Humboldt) Current
- * East Australian Current

**MAJOR MOUNTAIN RANGES, PLATEAUS AND BASINS**

- Alps
- * Andes Mountains
- * Atlas Mountains
- * Himalayas
- Brazilian Highlands
- * Arabian Plateau
- Ural Mountains
- Himal Kush Mountains
- * Rocky Mountains
- * Amazon Basin
- Congo Basin
- * Great Basin
- * Scandinavian
- * Congo Basin
- * Great Basin
- * Amazon Basin
- * Arabian Plateau
- * Ural Mountains
- * Iranian Plateau

**DESERTS**

- Atacama
- * Australian
- * Gobi
- * Kalahari
- * Patagonian
- * Sahara
- * Mojave
- * Sonora
- * Chihuahua

**PENINSULAS**

- Arabian
- * Balkan
- * Crimea
- Florida
- * Iberian
- * Korean
- Italian
- * Indochina
- * Indian
- Scandinavian
- * Yucatan
- * Baja California
- Labrador
- * Palmer (Antarctic)
## NORTH AMERICAN PHYSICAL FEATURES


## CANADIAN PROVINCES

| * Price Edward Island * Newfoundland * Manitoba * British Columbia | * Nova Scotia * Quebec * Saskatchewan * Alberta |

## CANADIAN TERRITORIES

| * Northwest Territories | * Yukon |

## UNITED STATES

- * Know All Fifty States and the State Capital of Each
- * District of Columbia
- * Major Cities:
  - O New York City
  - O San Francisco
  - O Miami
  - O Houston
  - O Minneapolis/St. Paul
  - O Atlanta
  - O Chicago
  - O Seattle
  - O Boston
  - O St Louis
  - O Denver
  - O Miami
  - O Los Angeles
  - O Dallas/Fort Worth
  - O Washington DC
  - O New Orleans
  - O Memphis
  - O Detroit

## MEXICO

- * Know That it Consists of 31 States and Federal District of Mexico City
- * Know Locations of the U.S./Mexico Border States:
  - O Sonora
  - O Nuevo Leon
  - O Chihuahua
  - O Coahuila
  - O Tamaulipas

## CENTRAL AMERICAN REGION

| * Belize * Honduras * Panama | * Guatemala * Nicaragua * El Salvador |

## CARIBBEAN REGION

| * Puerto Rico * Haiti * Panama | * U. S. Virgin Islands * Dominican Republic * Cuba |

## SOUTH AMERICAN REGION

| * Colombia * Suriname * Peru * Chile * Uruguay | * Venezuela * French Guiana * Brazil * Paraguay * Guyana |

## UNITED KINGDOM

| * England * Northern Ireland | * Wales * Scotland |

## EUROPE

| * Finland * Denmark * France * the Netherlands * Austria * Italy * European Turkey * Czech Republic * Republic of Macedonia * Montenegro * Slovak | * Sweden * Iceland * Germany * Luxembourg * Spain * Greece * Poland * Romania * Croatia * Bosnia Herzegovina * Norway * Republic of Ireland * Belgium * Switzerland * Portugal * Malta * Hungary * Bulgaria * Serbia * Albania |
### SOUTHWESTERN ASIA
- * Turkey
- * Jordan
- * Oman
- * Bahrain
- * Israel
- * Syria
- * Saudi Arabia
- * United Arab Emirates
- * Kuwait
- * Iran
- * Lebanon
- * Yemen
- * Qatar
- * Iraq
- * Afghanistan

### SOUTHERN ASIA
- * Pakistan
- * Sri Lanka
- * Bhutan
- * India
- * Myanmar / Burma
- * Bangladesh
- * Nepal

### SOUTHEASTERN ASIA
- * Thailand
- * Cambodia
- * Indonesia
- * Laos
- * Malaysia
- * Philippines
- * Vietnam
- * Brunei

### EAST AND INTERIOR ASIA
- * People’s Republic of China (Mainland)
- * People’s Republic of Mongolia
- * Democratic People’s Republic of Korea (North Korea)
- * Republic of Korea (South Korea)

### NORTHERN AFRICA
- * Morocco
- * Libya
- * Algeria
- * Egypt
- * Tunisia

### SAHARAN AFRICA
- * Mauritania
- * Chad
- * Mali
- * Sudan
- * Niger

### WESTERN AFRICA
- * Gambia
- * Guinea-Bissau
- * Ghana
- * Benin
- * Sierra Leone
- * Senegal
- * Liberia
- * Burkina Faso
- * Nigeria
- * Guinea
- * Ivory Coast (Cote D’ivoire)
- * Togo
- * Cameroon

### EQUATORIAL / CENTRAL AFRICA
- * Central African Republic
- * Congo Republic
- * Equatorial Guinea
- * Democratic Republic of Congo (Zaire)
- * Gabon

### EASTERN AFRICA
- * Ethiopia
- * Uganda
- * Tanzania
- * Somalia
- * Rwanda
- * Djibouti
- * Kenya
- * Burundi
- * Eritrea

### SOUTHERN AFRICA
- * Angola
- * Botswana
- * Swaziland
- * Namibia
- * Zambia
- * Zimbabwe
- * Lesotho
- * Malawi
- * Mozambique
- * Republic of South Africa

### RUSSIAN FEDERATION
- * Russia
- * Azerbaijan
- * Kazakhstan
- * Tadzhikistan
- * Estonia
- * Ukraine
- * Belarus
- * Kyrgyzstan
- * Turkmenistan
- * Latvia
- * Armenia
- * Georgia
- * Moldavia
- * Uzbekistan
- * Lithuania

### AUSTRALIA
- * Australian Capital District
- * Queensland
- * South Australia
- * Western Australia
- * New South Wales
- * Tasmania
- * Northern Territory
- * Victoria

### OCEANIA
- * Polynesia (Area Inside a Triangular Line That Connects Hawaiian Islands
- * Easter Island and New Zealand - Means "Many Islands."
- * Micronesia (North & West of Polynesia - Means "Small Islands."
- * Melanesia (Narrow Area West of Polynesia - Means "Black Islands,"
  Which Mainly Refers to the Color of the Inhabitants of These Islands)

Last updated 12/29/2018 tmk