Oceanography and Meteorology, GEOL 3314

Term: Fall 2024

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Office Hours: Monday–Friday, 10am–5pm (by appointment)

Course Dates: August 26, 2024 – December 13, 2024

Course Times: Online via Canvas

Course Overview

This course introduces the foundational concepts of Oceanography and Meteorology, emphasizing the intricate relationships between the Ocean, atmosphere, and human activities. Students will explore how the Ocean's physical features and atmospheric properties influence weather patterns, climate, and broader environmental processes. The course draws upon knowledge from biology, chemistry, physics, and geology to provide a comprehensive understanding of the world's Ocean and its interaction with the atmosphere. Key topics include experimental methods in Oceanography and Meteorology, the dynamics of weather events, and the science behind long-term climate change. No prerequisites are required, making this course accessible to all students interested in the Earth's systems.

Student Learning Outcomes

After successful completion of this course, students will be able to:

1) Analyze concepts including energy, heat, circulation, density, and time in context of Oceanography and Meteorology. (Critical Thinking, Empirical and Quantitative Skills)
2) Identify variations in physical features of the world's oceans. (Critical Thinking, Empirical and Quantitative Skills)
3) Collaborate with classmates to classify various phenomena related to Oceanography and Meteorology. (Critical Thinking, Communication, Empirical and Quantitative Skills, Teamwork)
4) Discuss complex weather events and identify steps leading to development. (Critical Thinking, Communication)
5) Investigate scientific evidence related to climate change. (Critical Thinking, Empirical and Quantitative Skills)

Required Textbooks and Readings

There is no required textbook to purchase for the course. All materials are open access and available online through the course Canvas structure.

Graded Course Requirements Description

Performance Assessments: Grading is based on the total number of points earned/accumulated by each student at the end of the semester on reading assignments and discussion board entries,

practice activities (Labs completed at home, recorded and shared with the class), as well as performance on quizzes and the end of course reflective exam (research presentation).

1. Reading Assignments and Discussion Board Participation
Students are expected to respond to all assigned discussion prompts as well as review and respond to entries made by their peers in the course. The Discussion Board fulfills several important functions, including:

- Ensuring students keep up with the required readings and online discussions;
- Enabling students to utilize higher order thinking skills and critically reflect on readings;
- Providing opportunities for greater interaction within the course online environment;
- Providing opportunities to learn from classmates;
- Preparing students to complete weekly quizzes; and
- Preparing students to engage in and present their research.

To earn full credit (20pts per discussion), students must sufficiently respond to all discussion prompts in a manner that provides evidence that the student reviewed each model and understood the readings, videos and other resources provided. Discussion entries must include key terms covered. A penalty will be assessed for responses that do not adequately address the discussion prompts, and/or which do not provide evidence that the student read/reviewed all required materials included in each module. When responding to peers, students are expected to maintain a high level of professionalism and add additional information or suggestions cited from the materials covered in each module. It is fine to disagree and discuss alternative views, however incendiary (hostile, insulting and/or disrespectful online interactions) or other inappropriate posts will not be tolerated, and will receive zero credit.

All discussion responses are due by the date and time indicated on the course schedule. No credit will be given for late/missing posts. <u>There are 8 discussion posts during the course (160 total points; 40% of final grade)</u>. For more information, see the Discussion Board Grading Rubric in Canvas.

2. Lab (At-Home Demonstrations)
Students are required to complete four labs (at-home demonstrations) throughout the course. These activities are designed to help students gain hands-on experience with key concepts related to Oceanography and Meteorology. Each lab will involve simple experiments using readily available household materials to illustrate important principles discussed in the course. After completing each lab, students will:

- **Record a video** of the demonstration process, including a clear explanation of the steps taken and the results observed.
- **Write a summary** of the experiment, including the objective, materials used, procedure, observations, and a brief explanation connecting the results to the course concepts. The summary should also include responses to specific questions provided in the lab instructions.
- **Upload the video** and **written report** to the assignment submission portal in Canvas by the due date indicated on the course schedule.
- **Participate in the discussion** related to the demonstration, sharing insights and responding to at least one peer submissions to compare and contrast results and interpretations.

To earn full credit (20 points per lab), students must demonstrate a thorough understanding of the experiment, accurately follow the procedure, and thoughtfully connect their observations to course material. Videos and reports must be clear, well-organized, and professionally presented. <u>There are 4 Lab activities (At-Home Demonstrations) during the course (80 total points; 20% of final grade)</u>.

3. Quizzes

Weekly quizzes will cover the required readings from the textbook and other online sources, as well as include information from discussions. Quiz dates are indicated in the course schedule. <u>There are 13 quizzes, each worth 10 points (130 total points; 20% of final grade)</u>.

4. Final Research Presentation

An important component of this course involves applying theory and research learned through course readings, videos, discussions, and lab experiences into real-world practice through application of course learning into a final presentation <u>(100 points; 20% of final grade)</u>.

Grading Structure

Assignment	Percentage %
Discussions – 8 @ 20pts = 160pts	40%
Lab (At-Home Demonstrations) – 4 @ 20pts = 80pts	20%
Quizzes – 13 @ 10pts = 130pts	20%
Final Paper/Presentation – 100 pts	20%
Total	100%

Grading Scale

➔ **A** - (90% or higher)
➔ **B** - (80 - 89%)
➔ **C** - (70 - 79%)
➔ **D** - (60 - 69%)
➔ **F** - (Below 60%)

*Last Day to Withdraw from Fall 2024 Courses: Monday, 4 November 2024.

Late Work and Make-Up Exams:

All assignments are due on or before the dates indicated on the course modules in Canvas. Each written assignment must be typewritten and submitted in Canvas by the student. No email attachments of assignments will be accepted unless organized in advance. Submission deadlines are final and access to submission links are removed after deadlines have expired. NO LATE assignments will be accepted unless a valid pre-approved or medical reason has been discussed with the professor. If an assignment is not completed on time due to a documented illness, funeral, or a university related activity, then a make-up date can be scheduled with the professor. All late assignments or non-submitted assignments will receive a score of zero points.

Course Policies and Expectations

Canvas. Students will access all components of the course through Canvas. Any changes to the course schedule, schedule of assignments, or any special assignments will be posted on Canvas. Students are expected to regularly check Canvas for updates and to download class handouts and materials. Online participation is imperative to the success in this online course. Students are expected to regularly review the course management system, check email, and contribute to course discussions and assignments.

Active Participation. In an online environment, active participation (attendance) is measured by each student's online presence in the course learning environment (Canvas) as well as completion of assigned activities. The importance of regular logins and active participation cannot be overstated. Participation is gauged by regular, on-time discussion forum postings and responses as well as contributions to peer review.

Academic Dishonesty. To be successful in this class, students must invest time for study. Honesty is expected. Academic dishonesty (cheating, plagiarism, collusion) will NOT be tolerated and will result in a grade of zero (0) for the assignment. A second infraction will result in automatic failure of the class. Dishonesty is defined as (i) the use of unauthorized materials, (ii) any communication with peers during quizzes, (iii) representing another's work as one's own (i.e., plagiarism) or (iv) fabricating information. The professor reserves the right to determine occurrences of cheating. Additional information on Academic Dishonesty is found in the University Policies included in Canvas.

UT Tyler Policy on Artificial Intelligence. UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. Students are ultimately responsible for the quality and content of the information submitted. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity, resulting that the student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, students can use AI platforms/tools to help revise and edit their work (e.g., to identify flaws in reasoning; to help generate new ideas; to spot confusing or underdeveloped paragraphs; to correct citations; and/or to serve as a personalized learning tool). When submitting work, students must identify any writing, text, or media generated with the assistance of AI following the APA guidelines listed within the course.

Tips for Success in this Course

1. **Participate.** I invite you to engage deeply, ask questions, and talk about the course content with your classmates and with me. You can learn a great deal from discussing ideas and perspectives with your peers and professor. Participation can also help you articulate your thoughts and develop critical thinking skills.
2. **Manage your time.** I get it—students usually juggle a lot, and I know you've got commitments beyond this class. Still, doing your best often means carving out enough dedicated time for coursework. Try scheduling specific blocks of time and ensure you have enough room to finish assignments, allowing extra space for any tech issues that might pop up.
3. **Login regularly.** I recommend that you log in to Canvas several times a week to view announcements, discussion posts and replies to your posts.
4. **Do not fall behind.** This class moves at a quick pace and each week builds on the previous class content. If you feel you are starting to fall behind, check in with me as soon as possible so we can troubleshoot together. It will be hard to keep up with the course content if you fall behind in the pre-work or post-work.
5. **Use Canvas notification settings.** Pro tip! Canvas can ensure you receive timely notifications in your email or via text. Be sure to enable notifications to be sent instantly or daily. (Canvas Notification Guide)
6. **Ask for help if needed.** If you are struggling with a course concept, reach out to me and your classmates for support.

University Policies & Student Resources:

University policies and student resources are available on the University website and in Canvas under "Syllabus". (You may copy or print the following information to include in your syllabus or use the links provided below.)

- University Policy
- Student Resources