MET6530: HURRICANES

Dr. Corene Matyas   T 3-4 R 3 3006 Turlington   **Fall 2017**

Office Hours
Tues/Thurs Period 6; other times available BY APPOINTMENT (with 24 hours notice)
Office: 3119 Turlington Hall   email: matyas@ufl.edu but **please ONLY use Canvas**   phone: 294-7508
Notes: please do not expect an immediate response to your message. 24 hours is a reasonable response period given other duties of faculty at a university. I am generally available during business hours Monday – Friday. I CANNOT return long distance calls.

Course Information
This course is designed to be a capstone course that utilizes concepts that you have learned in other weather-related courses. We will cover both meteorological and climatological concepts related to tropical cyclones (TCs), and there will be computer-related work with current forecasts, models, and data. We will use GIS software for some of the analysis. We will use current TC activity to develop an understanding of these weather systems, so please keep in mind that our class activities will change from one day to the next. If a tropical system is out there, we want to study it! It is assumed that you have a basic understanding of meteorological concepts such as the difference between high and low pressure systems and how clouds and thunderstorms develop. We will work in groups as well as individually. Please note that your enrollment in this course acknowledges your acceptance of the information contained within this syllabus.

Learning Outcomes
Perform spatial analysis on TCs using Geographic Information Systems
Interpret the conditions required for TC formation, intensification, and motion
Contrast forecasting models and understand National Hurricane Center products and statements
Utilize proper terminology and correct formatting of data while communicating orally and in written form
Explain hazards brought by TCs and recount some of the most famous storms

Required Textbooks and Tools
Textbook: Hurricanes of the North Atlantic: Climate and Society by Elsner and Kara (1999)
Tools: Learn how to remotely access UF Apps, and your storage space

Grades and Grading Scale
Research Project 45%,   Maps Discussion 10%, Forecasting 10%, Prolific TC Quiz/Presentation 15%, Quizzes (online and in class) 10% , Participation/Discussions/Quiz Prep 10%

A: 93 % or above   A-: 90 – 92.9 %   B+: 87 - 89.9%   B: 83 - 86.9%   B-: 80 – 82.9%
C+: 77 - 79.9%   C: 73 - 76.9%   C- : 70 – 72.9%   D+: 67 - 69.9%   D: 63 - 66.9%
D- : 60 – 62.9%   E: < 60%

It is your responsibility to know your current grade. Grades will be posted to Canvas. Information pertaining to UF grading policies can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Forecasting
The class will be divided into teams that will work together to forecast formation, or track and intensity. You will submit your forecasts using the Excel sheets that I provide. They are due by the end of class on the day when forecasting occurs. Due to the uncertain nature of tropical cyclones, it is not possible to determine how many forecasts we will submit during the semester – we are aiming for 5. You should use your Group's Canvas

page to submit details for the discussion, screen shots, etc. Only 1 person per group should upload the finalized forecast spreadsheet (.csv) and written summary (.docx). We will also learn to use GIS to plot the storm positions – everyone must learn how to do this! Forecasts will primarily be evaluated on utilization of proper format for data and interpretation and explanation of information in your written summary. If one or more group members are observed not to be contributing, their grades will be lowered accordingly. There is not a way to make up a forecast if you miss class. Your lowest score will be dropped. Instructions for format and content will be distributed when we begin forecasting in class.

Maps Discussion
The National Hurricane Center holds a daily maps discussion at 1:00 PM. The head forecaster presents a briefing on current TCs and regions of possible development. We will echo this format. Each student will give a briefing that includes satellite imagery, track locations, model predictions, and the NHC discussion. Specific information to include in your discussion will be presented on a separate handout – you must follow the instructions on this handout. You should also consult the rubric that will be posted online as that details how you will be evaluated. Dr. Matyas will upload a sample maps discussion and will present it as an example – you may follow the same sequence, updating the text and images with data from some point within 48 hours of your discussion time. You must submit your slides to Canvas by 9:00 am on the day of your discussion. Be mindful of terminology and spelling.

Quizzes
You will take several quizzes. Five will specifically cover Chapters 1-4 and 7 in the required textbook and these will be taken on Canvas. They will be available after Thursday's class and close before Tuesday's class so that no one is taking these quizzes during class time. There may also be unannounced in-class quizzes that will cover information we are using, such as what information can be found on the various websites we use, or how to plot the track data in a GIS. You will not take the midterm exam. Instead, the paper you will write about your research project will count towards 25% of your grade and appear in the midterm exam column on Canvas.

Prolific Tropical Cyclones
Each student will be assigned a tropical cyclone and will prepare a Power Point presentation about it. Specific details and format of information will be provided at a later date. You will upload your slides to Canvas and present them to the class. Your presentation will be evaluated using a rubric. There will also be a closed-book quiz on these TCs – date is listed at the bottom of the syllabus. I will assemble all slides presented into one presentation that you can use to study for the quiz. Unless official documentation is presented (Doctor's note, police report), NO MAKE-UP QUIZZES will be permitted! You will not be permitted to take the quiz if you arrive more than 10 minutes late.

Research Project
Instead of taking the midterm exam with the undergraduates, graduate students will pursue their own research topic. Your project should involve data analysis, and must be related to tropical cyclones in some way – either the storms or their impacts on humans and/or the natural environment. An outline of your intended research is due to me by the date listed at the end of the syllabus and I REQUIRE that you meet with me prior to this date so that we can discuss your ideas. Both of these activities count as part of the grade on the project. You will be giving a presentation on your research topic in class at the end of the semester, and you will also submit a research paper. Dates for these activities are listed at the bottom of the syllabus. The outline, meeting, and oral presentation will comprise the 20% of your grade that will be listed under Final Project in Canvas.

Participation/Discussions
Throughout the semester, you will be asked to participate in such activities as quizzing your classmates to writing quiz questions, class-wide and group discussions, and interpreting textbook images in front of the class.

Contributing to these activities will be an easy way to earn full credit for 10% of your grade. Those who choose not to participate, who do not regularly attend class, or who do not complete assignments will be penalized. Attendance alone does not qualify as participation. Repeated tardiness will also result in a lower grade.

Academic Honesty

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor for this class.

You are encouraged to help each other with projects, but you must turn in your own work. The exception is with forecasting assignments, where the group will collaborate and only one student will turn in the assignment for the group on their group's Canvas page. All suspected cases of honor code violations will be reported to the Dean of Students Office and actions such as lowering of the course grade, and/or other penalties may be assigned.

Canvas

This syllabus, announcements, copies of handouts, grades, and other course information will be posted on Canvas. Access this page at http://lss.at.ufl.edu   If you miss a class, it is your responsibility to learn the material covered during your absence. Come see me if you have questions. You are advised to check Canvas frequently to verify that week's activities and any announcements about upcoming quizzes, projects, etc. I may also post announcements and many of your assignments will be submitted through this website.

Disability Statement

Students requesting classroom accommodation must first register with the Dean of Students Office. This office will provide documentation to the student who must then provide this documentation to the Instructor. Please provide this documentation to me as soon as possible and a minimum of 1 week before a quiz or exam.

Contact information for the Counseling and Wellness Center and UPD

http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575
University Police Department: 392-1111 or 9-1-1 for emergencies.

Attendance and Proper Conduct

Your performance in this course, and participation grade, will suffer if you do not attend class regularly. Arrive to class on time and do not interrupt someone's presentation if you are late. Wait to the side, then take a seat when the student is finished. We will be utilizing the computers in TUR 3006 – please keep all foods and beverages away from areas where computers are being used. Remember to turn off cell phones, and please refrain from casual conversation once class begins. Arriving late to class more than twice will result in a lowered grade. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Online Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open during the last

two or three weeks of the semester, but students will be given specific times when they are open.
Summary results of these assessments are available to students at https://evaluations.ufl.edu/results.

Information on Certificates

So long as you receive a grade of B- or higher, this course counts as 33% of the credits needed for the graduate certificate: Applied Atmospheric Science. If you are interested in pursuing the certificate, you can apply by going to http://admissions.ufl.edu/start.html and scrolling down to the section for CERTIFICATE. There is no charge to apply if you are already a UF student. If you have applied but don't see that you are enrolled in the certificate, please email me as the Certificate Coordinator so I can check into the problem. I have uploaded fliers to Canvas that list all certificate courses.

How This Course Relates to the Student Learning Outcomes for the Certificate

- Knowledge: Students will demonstrate knowledge of the subject matter related to the atmospheric sciences and articulate orally and in writing the results and applications of their research and scholarship.
- Skills: Students will demonstrate problem solving skills by applying the scientific method to the analysis of published and self-generated data for a research project of their design that is related to the atmospheric sciences.
- Professional Behavior: Students will exhibit professional behavior and ethical practice while conducting their research.

Lecture Topics

Definition of a tropical cyclone (TC) and acronyms we will use in the semester
Weather in the tropics and TC formation criteria
Supplemental information to Chapters 2 and 3 in your book
Climatology and steering
Chapter 4 of the book
Climatology of major hurricanes and Chapter 7 of the book
Forecast models

Important Dates

We will have lectures and related activities each day except for the midterm exam and project days.
We may do forecasting on any given Tuesday during 4th period until we reach November.

September 1 – All quiz questions, answers, and explanations uploaded to Canvas by 11:59 pm
September 5 – evaluate the forecast discussion I give in class and upload rubric to Canvas by 11:59 pm
September 7-12 – Chapter 1 reading quiz available after/ due before class
September 14-19 – Chapter 2 reading quiz available after/ due before class
September 21-26 – Chapter 3 reading quiz available after/ due before class
October 5-10 – Chapter 4 reading quiz available after/ due before class
October 10 and 12 – Chapter 7 student presentations
October 12 – Deadline to email outline for research paper through Canvas (no link available in Canvas)
October 19-24 – Chapter 7 reading quiz available after/ due before class
October 18-20 – Chapter 7 reading quiz available after/before class
November 3 – Midterm Exam for Undergraduates – Graduates should continue work on their projects

November 9 and 14 – Prolific TC student presentations
November 16 – Prolific TC quiz (in class)
November 22 – Day to work on project (attendance in class optional – can work remotely if needed)
November 24 - No Class Thanksgiving
November 28 – Day to work on project – last chance to get help on project
December 5: Present results of project to the class (**email presentation to instructor using Canvas by 9:00 am**); Peer evaluation of student presentations (attendance/participation is mandatory)
December 11: Deadline for research paper to be uploaded to Canvas (use final project assignment link)

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.