MET4750 : ATMOSPHERIC DATA ANALYSIS

Dr. Corene Matyas  Fall 2014

Office Hours
Monday Per 7, Wednesday Per 2 and 6; other times BY APPOINTMENT ONLY
Office: 3119 Turlington Hall  email: matyas@ufl.edu but please ONLY use SAKAI  phone: 294-7508
Notes: do not expect an immediate response to your message. I CANNOT return long distance calls – use Sakai.
When composing your message in Sakai, check the box (Send CC) that will send a copy to my regular email so that I am notified that a new message is waiting for me on Sakai.

Course Information:
This course will cover how atmospheric data are collected and analyzed both for meteorologic and climatologic-scale research and we will focus on the use of GIS as a tool for data processing. You should have a basic understanding of how data are collected both directly (e.g., instrumentation/sensors) and remotely (e.g., radar, satellite) from your previous coursework. We will explore where to obtain various types of data, and the types of research questions that may be answered using these data.

Required Materials
We do not have a required textbook for this course. Please bring a flash drive or portable hard drive to each class on which to save data as you CANNOT save data to the local computer.

Grades and Grading Scale
Homework exercises (50%) Quizzes (20%) Critique of Graduate Presentations (10%) Group Project (20%)

A: 92.5 % or above  A-: 89.5 - 92.49 %  B+: 86.5 - 89.49%  B: 82.5 - 86.49%  B-: 79.5 – 82.49%
C+: 76.5 - 79.49%  C: 72.5 - 76.49%  C- : 69.5 – 72.49%  D+: 66.5 - 69.49%  D: 62.5 - 66.49%
D- : 59.5 – 62.49%  E: < 59.5%

It is your responsibility to know your current grade. Grades will be posted to Sakai

Group Project
This project will give you the opportunity to collaborate with other undergraduates to complete a project at the end of the semester. The number of groups will depend on the number of students enrolled. Each group should propose a research question that requires a contribution of a different set of data by each group member. Time will be given during class so that groups can meet to set the delimitations of their project (spatial and temporal limits). Each member will acquire and pre-process their dataset, prepare metadata, and must report to the group if problems are encountered so that the research question must be modified. Each member must then contribute to the cumulative processing of the data to achieve the project’s goal. More details to follow on a separate handout.

Quizzes
We will have several quizzes that will cover definitions of variables and their proper use, details about how different variables are calculated and datasets are created, and scenarios where you are asked to explain the datasets you would seek to answer different research questions. Due dates will be announced in class.

Using GIS Assignment
A good researcher always knows the type of research being performed by their peers. We will begin the semester by researching how Atmospheric Scientists and Geographers analyze atmospheric data using GIS by consulting conference proceedings of the AMS and AAG. Each student will select a presentation, find details about the authors and coauthors of the study through a literature search, and will present their findings to the class. We will begin this assignment in the first week of class.
Homework Exercises and Feedback
Several laboratory exercises will be assigned to help you work through the concepts presented in this class. Due dates will be announced in class. You will need to access the computer lab in TUR3018 to complete your assignments and even though you will have time during class, you should also plan to spend time outside of class to complete the exercises if needed.

E-Learning Information
This syllabus, announcements, copies of handouts, grades, etc. will be posted on the Sakai E-learning course management system webpage. If you miss a class, it is your responsibility to learn the material covered during your absence. You are advised to check E-Learning frequently to verify activities and any announcements about quizzes, projects, etc. 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.

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. 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.

Attendance and Proper Conduct
Your performance in this course will likely suffer if you do not attend class regularly. Arrive to class on time and do not interrupt someone’s presentation if you are late. We will be utilizing the computers- please keep all foods and beverages away from them. DO NOT save anything to the hard drive of the computer! It may be erased as soon as you log off. Remember to turn off cell phones.

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

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.
Topics to be Covered
Who is using GIS for atmospheric data analysis?
Recap of variables and their definitions
Global and regional datasets
National Digital Forecast Database and Degrib
Analysis of ground-based weather radar data
Satellite estimates of rainfall
Analysis of point data: hurricanes and tornadoes

Important Dates
Our typical pattern will be introductory lectures on Mondays and Lab time to work on assignments on Wednesdays.

- September 1 – No Class  Labor Day
- October 8 – special visit by Dr. Sytske Kimball, University of South Alabama
- November 24 – Day to work on project
- November 27 - No Class Thanksgiving
- December 1 and 3 – Days to work on project
- December 8: Peer evaluation of student presentations
- December 10: Deadline for final project