Cover Sheet: Request 10717

MET4750 Atmospheric Data Analysis

Info

Process	Course|Modify|Ugrad/Pro
Status	Pending
Submitter	Matyas, Corene matyas@ufl.edu
Created	2/1/2016 8:31:32 AM
Updated	3/8/2016 8:23:59 AM
Description	How atmospheric data is collected and analyzed for meteorologic and climatologic-scale research. Where various types of data are obtained and how to analyze data to answer specific research questions.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Geography 011609000	Binford, Michael W.		2/1/2016
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Pharies, David A		2/10/2016
No document changes					
University Curriculum Committee	Comment	PV - University Curriculum Committee (UCC)	Case, Brandon	Added to the March agenda.	2/17/2016
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/17/2016
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 10717

Info

Request: MET4750 Atmospheric Data Analysis
Submitter: Matyas, Corene matyas@ufl.edu
Created: 2/1/2016 8:31:32 AM
Form version: 1

Responses

Current Prefix
Enter the current three letter code (e.g., POS, ATR, ENC).

Response:
MET

Course Level
Select the current one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Response:
4

Number
Enter the current three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles.

Response:
750

Lab Code
Enter the current lab code. This code indicates whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response:
None

Course Title
Enter the current title of the course as it appears in the Academic Catalog.

Response:
Atmospheric Data Analysis

Effective Term
Select the requested term that the course change(s) will first be implemented. Selecting "Earliest" will allow the change to be effective in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's expectations. Courses cannot be changed

retroactively, and therefore the actual effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires at least 6 weeks after approval of the course change at UF.

Response:
Earliest Available

Effective Year
Select the requested year that the course change will first be implemented. See preceding item for further information.

Response:
Earliest Available

Requested Action
Indicate whether the change is for termination of the course or any other change. If the latter is selected, all of the following items must be completed for any requested change.

Response:
Other (selecting this option opens additional form fields below)

Change Course Prefix?

Response:
No

Change Course Level?
Note that a change in course level requires submission of a course syllabus.

Response:
No

Change Course Number?

Response:
No

Change Lab Code?
Note that a change in lab code requires submission of a course syllabus.

Response:

No

Change Course Title?

Response:
Yes

Current Course Title

Response:
Atmospheric Data Analysis

Proposed Course Title

Response:
Spatial Analysis of Atmospheric Data using GIS

Change Transcript Title?

Response:
Yes

Current Transcript Title

Response:
ATMOSPH DATA ANALYSIS

Proposed Transcript Title (21 char. max)

Response:
Atmos Data Analy GIS

Change Credit Hours?
Note that a change in credit hours requires submission of a course syllabus.

Response:
No

Change Variable Credit?
Note that a change in variable credit status requires submission of a course syllabus.

Response:
No

Change S/U Only?

Response:
No

Change Contact Type?

Response:
No

Change Rotating Topic Designation?

Response:
No

Change Repeatable Credit?
Note that a change in repeatable credit status requires submission of a course syllabus.

Response:
No

Change Course Description?
Note that a change in course description requires submission of a course syllabus.

Response:
No

Change Prerequisites?

Response:

Yes

Current Prerequisites

Response:
GEO 3250 or MET 3503 or MET 4352

Proposed Prerequisites

Response:
GEO 3250 or MET 3503 or MET 4532

Change Co-requisites?

Response:
No

Rationale

Response:
fix typo for MET 4532
there is also a 1 word typo in the course description - can "data is collected" be
changed to "data are collected"?

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 Canvas**   phone: 294-7508
Notes: do not expect an immediate response to your message. I CANNOT return long distance calls.

Course Goals and Objectives:
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 and spatial analysis. 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 spatial analysis techniques that may be used to answer research questions using these data. A previous course in GIS is highly recommended, or basic computer programming skills. We will be utilizing a GIS each week in our lab activities.

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
Lab 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 Canvas. Information pertaining to UF grading policies can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

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 using spatial analysis methods we learned during the semester to achieve the project's goal. More details to follow on a separate handout.

Quizzes
We will have weekly quizzes that will cover definitions of variables and their proper use, details about how different variables are calculated and datasets are created, spatial analysis techniques that are appropriate for each dataset, GIS commands that are needed to perform the analyses, and scenarios where you are asked to explain the datasets you should seek and methods you should employ to answer different research questions.

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.

GIS-Based Lab Assignments
Weekly laboratory exercises will be assigned to help you work through the concepts presented in this class. These assignments are available on Canvas and are due each week – submit them to the Assignments link in Canvas. Each question will be graded and the assignment returned to you with comments. You will need to access the computer lab and ArcGIS software 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. I cannot help you if ArcGIS doesn't work correctly when you decide to bring your own laptop instead of using our lab environment. It is wise to back up your data to an external device – plan for several GB of raw and analyzed data. Follow GIS conventions when setting up your directory names and file names. Retain all data from each week's assignments as some weeks are cumulative and you will need to pick up where you left off the previous week.

Critique of Graduate Presentations
During the last two days of class, graduate students will orally present their term research projects. Your attendance is mandatory. You will receive a rubric to use when evaluating their presentation. Please fill out the rubric while the presentation is going on, making notes where there are good points, as well as suggestions for improvements. You must fill out each row in the rubric, and provide 1-3 sentences at the end with overall comments. Complete one rubric for each student and submit to Canvas. Put the student's name at the top, but do not include your own. I will give feedback on the quality of your evaluation, and remove your name from the filename before giving them to the graduate students to help them in their future presentations.

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. All 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 will be erased as soon as you log off. Remember to turn off cell phones. You are only to use the computers for class-related activities during class time. 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.

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?	(week 1)
Recap of variables and their definitions	(week 2)
GIS-based spatial analysis of global and regional reanalysis datasets	(weeks 3-5)
Working with National Digital Forecast Database and Degrib for GIS analysis	(week 6)
Importation of ground-based weather radar data into GIS	(week 7)
Shape metrics and spatial analysis of radar data for hurricanes	(weeks 8-10)
Spatial analysis of satellite estimates of rainfall	(week 11)
Analysis of point data using GIS: hurricanes and tornadoes	(week 12)
Consultations for final projects	(weeks 13-14)
Final project evaluations	(week 15)

Important Dates

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