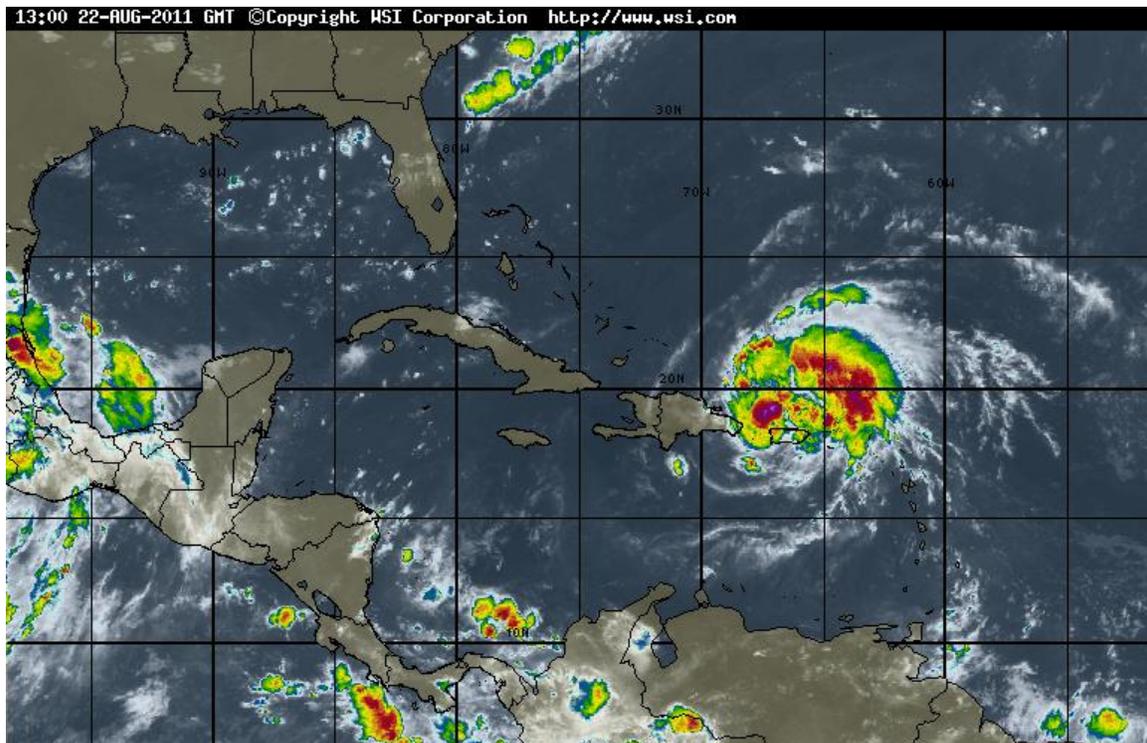


**Syllabus**  
**METEOROLOGY 4443/5443**  
**TROPICAL METEOROLOGY**

**Fall 2012**  
**Section 1, MWF**  
**Time: 10:00- 10:50AM**  
**Where: NWC 5600**  
**Professor: Mark Morrissey**  
**Phone: 405 325-6561**  
**Office: NWC 5321**  
**Email: mmorriss@ou.edu**



This course is intended to introduce both undergraduates and graduate students to the weather and climate of the Tropics. Tropical weather systems are inherently different from those in the mid-latitudes. However, they are also inherently connected to the mid-latitudes through various forcing mechanisms (Satellite photo above: case in point). Material presented includes an overview of tropical weather, basic physics of air-sea interaction and the attendant effects on tropical weather. The El Nino phenomenon has perhaps the greatest effect on day-to-day tropical weather even though it is considered a *climate variation*. A thorough understanding of El Nino would not be complete without

some understand of ocean dynamics as well. The recent intense hurricane seasons of the last few years in all parts of the world also attest to the strong relationship between climate and weather in the tropics and the connections with the mid-latitudes. Thus, the understanding of the physics and effects of El Niño and global warming allows one to enhance their ability to forecast both tropical and mid-latitude weather events.

Below are some of the topics covered in this course (non-inclusive):

### **First Couple of Lectures: Introduction to the Tropics**

- 1. Physical controls of the tropical circulation (i.e. basic physics of the tropical, e.g., heat-energy balance, air-sea interaction, etc.)**
- 2. Tropical general circulation**
- 3. Peculiarities of the tropics (e.g. heat lows, tropical easterly jets, etc.)**
- 4. Ocean properties**
- 5. El Niño/La Niña**
- 6. El Niño and Global Warming Link?**
- 7. Monsoons**
- 8. Tropical Cloud Dynamics**
- 9. Tropical cyclones; Introduction**
- 10. Tropical Cyclones; Dynamics**
- 11. Tropical Cyclones and El Niño**
- 12. Tropical Cyclones; Dvorak Scheme, Climate Change link?**

Helpful Reading texts (but not required):

Forecaster's Guide to Tropical Meteorology by Gary Atkinson (available at <http://www.amazon.com/Forecasters-Guide-Tropical-Meteorology-Atkinson/dp/1410201937> for about \$37)

Tropical Climatology (2<sup>nd</sup> Ed) by Glenn R. McGregor and Simon Nieuwolt (Wiley Pub.)

Grading: Two within-semester tests (25% each) and one comprehensive final (30%). Homework (20%).

**COURSE GRADE:** '≥' mean 'greater than or equal to'

Two In-Class Exams at 25% each. Homework 20%. Final Comprehensive Exam 30%.

**Grade: 100 - 90.0% 'A', 89.9- 80.0% 'B', 79.9-70.0% 'C', 69.9- 60.0% 'D', < 60.0% 'F'.**

Note: rounding of grades will be 'up' if the second significant digit rounds up to a value ≥ to '5'. i.e. an '89.94' rounds to '89.9' = 'B', '89.95' rounds to '90' = 'A'.

Near the end of the semester. We will have the graduate students give a 10-15 minutes on a tropical topic or paper of their interest.

## **IMPORTANT POLICIES:**

### ***Reasonable Accommodation:***

*The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the professor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or fax only 405/325-4173.*

### ***Academic Misconduct:***

*All provisions of the Norman Campus Academic Misconduct Code shall apply in cases of academic dishonesty. ANY violation of the Academic Misconduct Code will result in your removal from this course, and a grade of F will be recorded for the course. Academic misconduct is defined as “any act that improperly affects the evaluation of a student’s academic performance or achievement.” At the University of Oklahoma, academic integrity is expected from each student. Misconduct such as plagiarism, fabrication, and fraud, as well as attempting to commit such acts or assisting others in so doing, will not be tolerated. Students are responsible for knowing the OU Academic Code, which can be found at <http://studentconduct.ou.edu/> and <http://www.ou.edu/provost/integrity/>*