A ATM 306 CLIMATE VARIABILITY AND CLIMATE CHANGE

FALL 2012 CLASS #: 9096

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Lecture Times:	Mon and Wed	1.40pm-3.00pm
Office Hours:	Mon	3.00pm-4.00pm or by arrangement
Credits:	3	

Prerequisites for Course: A Mat 113 or 118 and A ATM 210 or 210Z

Grading Scheme: Graded

Aims of Course:

To provide students with understanding of how the climate system works including the fundamental physics of the coupled atmosphere-land-ocean system and our ability to predict it.

To provide students with a knowledge of the nature and causes of natural climate variability including, in particular, that associated with the El Nino Southern Oscillation (ENSO).

To provide students an objective assessment of observed trends in the past century and the anthropogenic contribution to these.

To discuss the physics of anthropogenic climate change including climate change predictions for the next 100 years and the "IPCC process".

Course Assessment:

1.	Two Class exams	October 17th (20%), November 19th (20%)	40%
2.	Problem sets	Given one week to do them	20%
3.	Final exam	Tuesday December 13th 10.30-12.30	40%

Basic Course Outline

1. **Introduction to the Climate System**
   1.1 Introduction
   1.2 Midlatitude Climate
   1.3 Tropical Climate
   1.4 Summary

2. **Natural Climate Variability**
   2.1 Introduction
   2.2 Interannual Variability
   2.3 Decadal Variability
   2.4 Climate Prediction
   2.5 Summary

3. **Climate Change**
   3.1 Introduction
   3.2 Theory of Climate Change
   3.3 Observations
   3.4 Climate Change Prediction
   3.5 The IPCC Process
   3.6 Summary

4. **Future Perspectives**

   The course will conclude with some discussion about the future including how politics, science and society are interacting on the issue of climate change.