

NORTH CAROLINA STATE UNIVERSITY

MEA 140 NATURAL HAZARDS AND GLOBAL CHANGE

Spring Semester 2000: Location: Jordan Hall: Room 1108 10:15-11:05 M W F

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SYLLABUS

- January 10: Introduction, overview of course content and student responsibilities
Part I The Geosphere and Related Hazards (Dr. Hibbard)
- January 12: Dynamics of Earth (p. 2-5, 22-27, 35-36)
- January 14: Earth on the Rebound (p. 37-38, 53-61, 105, 122-124, 128-129)
- January 17: Martin Luther King Day: No Classes
- January 19: Kiyoo and Charlie: Measures of an Earthquake (p. 61-65, 68-73, 74-81)
- January 21: Earthquake Hazards (p. 74-81, 86-88)
- January 24: Earthquake Control and Prediction (p. 107)
- January 26: Visions of Hell (p. 135-143, 156-178)
- January 28: Volcanic Products and Hazards
- January 31: Prediction/Long-Term Effects
- February 02: Worlds in Collision (p. 352-367)
- February 04: Quiz I
- Part II The Hydrosphere and Related Hazards (Dr. DeMaster)
- February 07: Living on the Water Planet
- February 09: Hazardous Motions in the Oceans - Big Waves
- February 11: Storm Surge: What Causes the Water Rise
- February 14: Sea Level is Rising - Why and How Fast?
- February 16: Sea Level Rise and Shoreline Retreat
- February 18: Rising Sea Level and Beaches - Can We Win the Fight?
- February 21: River Floods - Part I
- February 23: River Floods - Part II
- February 25: Quiz II
- Part III Atmospheric Hazards (Dr. Watson)
- February 28: Hazardous Weather for all Seasons
- March 01: What Makes the Winds? - Forces and Air Motion
- March 03: What Makes the Weather? - Water Vapor, Clouds, and Precipitation
- March 06: Global Wind and Weather Patterns
- March 08: Winter Storms I - Air Masses, Fronts and Jet Streams
- March 10: Winter Storms II - Evolution of Cyclones and Anticyclones

March 13-17: SPRING BREAK; NO CLASSES
March 20: Spring Storms I - Atmospheric Stability and Thunderstorms
March 22: Spring Storms II - Lightning and Tornadoes
March 24: Summer Storms I - Tropical Weather Systems
March 27: Summer Storms II - Hurricanes
March 29: Air Pollution I - Natural and Manmade Contributions
March 31: Air Pollution II - Acid Rain and Ozone Holes
April 03: Drought and Fire
April 05: Quiz III

Part IV Mass Wasting and Anthropogenic Factors (Drs. DeMaster and Wolcott)
April 07: Rockfalls, Landslides, Debris Flows, and Mud Flows
April 10: Sinkholes and Subsidence
April 12: El Niño: How it Works
April 14: El Niño: Global Consequences
April 17: Global Warming: The CO₂ Cycle and Its Role in Regulating Climate
April 19-21: NO CLASSES
April 24: Global Climate Change: Forecasting the Future
April 26: Estuarine Pollution: Troubled Waters
April 28: Estuarine Pollution: Biological Consequences
*May 01 Biological Pollution: Alien species and emerging diseases
May 03: Mass Extinction
May 05: Evolution and Extinction

May 12 FRIDAY: Quiz IV (9:00-11:00 in Jordan rm #1108)

TERM PAPERS ARE DUE May 01

NO PAPERS ACCEPTED AFTER THE BEGINNING OF CLASS ON 5/01

REQUIRED TEXT: Abbott, P.L., 1999, Natural Disasters - 2nd Edition

RESERVED TEXTS located in the Natural Resources Library (NRL)

Ahrens, C.D., 1988, Meteorology Today
Alexander, D., 1993, Natural Disasters
Bolt et al., 1977, Geological Hazards
Bolt, B., 1993, Earthquakes
Decker, R. and B. Decker, 1989, Volcanoes
Eagleman, J.R., 1985, Meteorology: The Atmosphere in Action
Maybury, R. H., 1986, Violent Forces of Nature
Robinson, A., 1993, Earth Shock
Williams, J., 1992, The Weather Book
Wood R.M., 1987, Earthquakes and Volcanoes

Check the Reserve Shelf for MEA140 at the NRL for additional titles

GRADING

Plus/Minus grading will be utilized in this course. Your grade is based on the following criteria:

Four quizzes at 100 pts. ea. - highest quiz grade doubled 500 points (83%)

Term Paper Outline + Term Paper 100 points (17%)

TOTAL 600 points (100%)

ATTENDANCE POLICY: Regular attendance of classes is expected of all students at NCSU, and, as instructors of a 100-level course, we are required to keep attendance records. We cover a lot of material that is not in the textbook; thus you will be at a substantial disadvantage if you miss the lectures. Make-up quizzes will only be given in cases where your absence is explicitly excused. Examples of excused absences include: participation in an official university function, certified required court attendance, religious observance, illness or injury certified by an attending physician, death or serious illness in the family. Excuses must be provided to the instructor within a week of the absence. For unexcused absences, points will be deducted from your grade in the following manner: -1% (6 pts.) for each unexcused absence greater than 2.