GEOL 3105
IMAGES OF THE EARTH

Description of the course: This is an introduction to the new, rapidly evolving, and interdisciplinary field of Earth System Science. This course emphasizes the ideas of Earth as a planet within the solar system; the interactions among the components of the geosphere, hydrosphere, atmosphere, and biosphere; and global changes. Studying Earth as a system is accomplished by the analysis of remote sensing data. Images acquired by airborne and spaceborne sensors are used throughout the course.

Objectives of the course:

- Establish the relationship between the components of the Earth System.
- Present the latest technology for understanding the Earth at global scale.
- Provide a large-scale perspective of the Earth processes.

Web Page: http://gers.uprm.edu/geol3105

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Office Hours: Tuesdays and Thursdays: 1:00 - 4:00 PM

Textbook:


Policy:

- Students are required to attend all classes.
- No makeup exams will be given without written evidence of acceptable reason.
- The attendance quizzes are unscheduled and may be given at any time.
- Some questions in the exams will be taken from material discussed only in class and not covered in the textbook or reading material.
- Students must turn off all electronic devices during the class, in particular the phones (set to vibrate). NO TEXTING, PLEASE!

Grading:

- Three partial examinations: 300 points
- Class Attendance and Participation (25 pts.), Quizzes (50 pts.), and Final Assignment (25 pts.)
- The final grade will be determined based on 400 points using the following curve:

  ✓ A = 100-89%
  ✓ B = 88-78%
  ✓ C = 77-65%
  ✓ D = 64-55%
  ✓ F = 54-0%
LIST OF TOPICS

I. The Earth System
   1. The Earth System
   2. Energy
   3. Matter
   4. Space and Time

II. Observing the Earth from Space
   5. Principles of Remote Sensing
   6. Types of Remote Sensors
   7. Remote Sensing at UPRM

   - EXAM ONE

III. The Geosphere
   8. The Tectonic Cycle
   9. Earthquakes
   10. Tsunamis
   11. Volcanoes

IV. The Hydrosphere
   12. The Hydrologic Cycle
   13. The Cryosphere
   14. The World Ocean

   - EXAM TWO

V. The Atmosphere
   15. The Atmosphere
   16. Wind and Weather Systems
   17. The Climate System

VI. The Biosphere
   18. Life, Death, and Evolution
   19. Ecosystems, Biomes, and Cycles of Life

VII. The Anthroposphere
   20. The Resource Cycle
   21. The Changing Earth System

   - FINAL EXAM