Planet Earth: South Florida: GLY-5159

Meeting time: By Arrangement
Meeting location: By Arrangement
Course Level: Graduate 5159
Sections: 1
Web page: None

Course Catalogue Description

GLY 5159 - Planet Earth: South Florida (1)
Geology, water resources and geologic environments of South Florida.

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Office Hours: M, W 11 to 12, as available, and by appointment

Outline

1. Introduction
2. Field trip: Miami Formation (Miami Oolite)
    a. Meet at FIU Bookstore Parking lot, 9 am, Sunday January 23
    b. Brickell Avenue Metro Mover outcrops, 9:30 am
        i. Composition
        ii. Sedimentary structures
    c. Alice Wainwright Park outcrops, 10:30 am
        i. Composition, sedimentary structures
        ii. Impact of Burrowing Organisms
        iii. Sea cliff, wave-cut notch
    d. Lunch (purchase, pack, or wait), 12:30
    e. Return to FIU, ~4:00 pm
3. Field trip: Windley Key State Geologic Park/Pennekamp State Park
    a. Montgomery Center outcrops, 11:30 am
        i. Sedimentary structures
        ii. Wave cut cliff and basal notch
        iii. Karst features (case hardening and solution pipes)
    b. Miami-Dade South District Wastewater Treatment Plant, 2:00 pm
        i. Inflow at headworks
        ii. Overview of basic treatment processes
        iii. Large-scale deep well injection of effluent
    c. Ft Thompson Formation
    d. Reef to rock
    e. Flowing artesian well
4. Field trip: Peace River
    a. Water Conservation Areas

    b. Everglades Agricultural Area
    c. Bone Valley Member of Hawthorne Formation
    d. Miocene fossil collecting
    e. Sunniland Oil Well Park
5. Field trip: Ten Thousand Islands
    a. Everglades cross-section
        i. Limestone mining and flood control
        ii. Urban perimeter levee and slurry wall
        iii. Everglades restoration project
        iv. Ridge-and-slough landscape
        v. Cypress domes
        vi. Tamiami Formation
    b. Flowing artesian well
    c. Coastal and estuarine processes
        i. Gulf tides and tidal flows and range
        ii. Mangrove forest and peat
        iii. Shell beaches, sandy beaches
        iv. Hurricane effects
    d. Aquifer testing

Assignment Dates

Assignments will be due one week after they are handed out or provided by e-mail.

Performance Measures, Grading/Attendance Standards

Attendance: Informal lectures will be held at field trip stops throughout the course. Participation in field trips is critical to successful completion of this course. More than 1 unexcused absence will result in one letter grade reduction; more than 2 will result in a two letter grade reduction.

Homework: Homework assignments will be given following field trips weekly and will generally involve the production of short reports consisting of facts, field observations, interpretations, and placing the observations into a broader spatial/temporal context. English, spelling, graphics, and quality of evaluation will all be considered in grading the homework. You are encouraged to work together to develop your understanding, but you must complete all assignments yourself; copying the work of others (including from the Internet) is unacceptable and will result in a grade of F for the course. In addition, you will probably not be able to successfully complete the quizzes and examination without having done the homework. Assignments will be due one week after they are assigned. Late homework will be reduced 25% for each late day. These assignments will account for 1/2 of your grade.

Quizzes: 1/4 of grade. 10-minute quizzes will be administered following completion of the homework assignments. Quizzes will emphasize facts, field observations, interpretations, and placing the observations into a broader spatial/temporal context. The sum of all quiz grades will be weighted to account for 1/4 of your overall course grade.

Examination: 1/4 of grade. One final examination will be based on lecture, homework, and quiz material.

Text

None

Bibliography

Bryan, J.R., T.M. Scott, G.H. Means, 2008. Roadside geology of Florida, Mountain Press Publishing Company, 376 pp

Grunwald, M., 2006. THE SWAMP: The Everglades, Florida, and the Politics of Paradise. Simon & Schuster, 450 pp

Hoffmeister, J. E., 1974. Land from the sea: The geologic story of south Florida, University of Miami Press, 143 pp

Randazzo, A.F. and D.S. Jones, eds., 1997. The Geology of Florida, University Press of Florida, 327 pp