MSCI/GEOL 215: Coastal Environments of the Southeastern U.S
Spring 2014

BULLETIN INFORMATION
MSC 215 = GEOL 215 Coastal Environments of the Southeastern U.S (3 credit hours)

Course Description:
Coastal zones of South Carolina and neighboring states, including geologic history, geomorphology, stratigraphy, hydrogeology, shoreline processes, environmental issues, and effect of man. Two lecture hours each week plus optional field trips. Not available for marine science major credit.

Note: MSCI/GEOL 215L is a completely separate course. Students can be enrolled in MSCI/GEOL 215 without being enrolled in MSCI/GEOL 215L.

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Satellite Oceanography Laboratory, EWS 508A
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Office hours: Tuesday and Thursday 1:30-2:30 PM in EWS 508A or by appointment

Lectures: Tuesday and Thursday 2:50-4:05 PM in PSC# 002.

COURSE OVERVIEW
This introductory course will explore the coastlines involving geomorphological, hydrological, sedimentological, ecological, and societal phenomena. Students will learn about the fundamental processes and landforms found within the coastal zone and the impacts of human activity and natural disasters. Case studies will be presented throughout the semester that highlight the coastal zones of the southeast United States, defined here as North and South Carolina, Georgia, and the east coast of Florida.

ITEMIZED LEARNING OUTCOMES
Upon successful completion of Marine Science 215/Geology 215, students will be able to:
1. Identify the features of coastal environments and continental margins and relate the structures observed to the theories of their origin
2. Identify and describe coastal processes and landforms that influence the southeast United States
3. Formulate hypotheses and analyze and interpret environmental data
4. Evaluate the scientific evidence for both natural and human-induced climate change and evaluate the impact of climate change on coastal ocean systems with respect to society
5. Identify the causes of marine pollution and environmental degradation, and understand the problems associated with containment and alleviation
6. Describe the importance of the coastal zone to environmental and economic systems
7. Identify and describe past and future impacts of natural disasters on coastal systems
REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS

Due to the specialized nature of this course, there is no textbook. The PowerPoint lectures will be available on the blackboard. These lectures were developed following the textbook:

3. Richard A. Davis Jr., 1996, The Evolving Coast, Scientific American Library. 233pp ISBN 0-7167-6021-5. (However, this is out of print (although some used copies might be found in local bookstores and/or online resellers).

Internet:

This course is a web-enhanced course with lectures, quizzes, and other course resources posted online Blackboard regularly during the semester. Students will be required to access the class Internet site both prior to and following every lecture.

Attendance Policy

Class attendance is MANDATORY. "The USC Bulletin for Undergraduate studies states that absences of more than 10% of the scheduled class sections is excessive". Attendance at every scheduled class is required. Your first three absences are excused. For the fourth absent you need to show to me a reason why you missed the class, either Doctors Note or an official letter. You will loose one letter grade per class missed for every absence over four. Missing five or more classes will put you at risk of failing, regardless of the reason for the absence.

In lieu of taking roll, I will give several quizzes at random times during the course at the before/end of lecture or sometimes takes roll randomly. The points earned from the quizzes will be used as extra credit. Pop quizzes and EXAMS cannot be made up!!!! No exceptions!!!!

ASSIGNMENTS AND/OR EXAM

This course includes the following means of evaluating student performance and comprehension of the material:

1. Examinations: There will be three, non-cumulative exams with objective questions (multiple-choice, true/false, and diagram identification/data interpretation). Multiple choice and true false questions are designed to evaluate your understanding of basic terminology, principles covered in the lectures, and relationships between the coastal environment and society (Carolina Scientific Literacy L01 and L03). Diagram identification and data interpretation are formulated to test your ability to make conclusions based on the information provided (Carolina Scientific Literacy L02). Review sheets will be distributed. Final exam is cumulative and it is optional.

2. Quizzes: Short answer quizzes will be given throughout the semester. In class quizzes will be based on higher order concepts presented during the previous class and are designed to evaluate your ability to formulate arguments based on available data and to evaluate relationships between the coastal environment and society. These quizzes will be unannounced, distributed at the beginning or end of lecture.
3. **Extra Credit:**
   Group presentation (15 min+5 min questions & Answers)
   5 students in each group (5 slides minimum each student, Total 25 slides)
   Group presentation questions & answers- **25 points**
   Attendance (Absences 0, 1 or 2  **Points 10, 5 or 3**)

**Grading**

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<tr>
<th>Points</th>
<th>Description</th>
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<tbody>
<tr>
<td>100</td>
<td>Test# 1</td>
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<tr>
<td>100</td>
<td>Test# 2</td>
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<tr>
<td>100</td>
<td>Test# 3</td>
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<td>100</td>
<td>Final Exam (Optional)</td>
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**All EXAMS will be multiple choice.**

Final Grade is calculated based on the average three tests or the average of the two high scores of the three interim tests and final exam score, and earned bonus points/extra credit.

**Make-up Policies:** There will be **NO** make-ups for missed quizzes/Tests/seminar or Final Exam.

Final grades will be based on a grading scale suggested as follows: A >= 90; B+ = 85-89; B = 78-84; C+ = 72-77; C = 66-71; D+ = 60-65; D = 50-59; and F <= 49.

(Decimal points are rounded to the nearest integer)

**COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS**

- **January 14** Lecture 1  Introduction
- **January 16** Lecture 2  Costal Environments
- **January 21** Lecture 3  Plate Tectonics I
- **January 23** Lecture 4  Plate Tectonics II
- **January 28** Lecture 5  Coastal classification
- **January 30** Lecture 6  Coastal Classification
- **February 4** Lecture 7  Sea Level Change
- **February 6** Lecture 8  Sea Level Change
- **February 11** Lecture 8  Waves I
- **February 13** **Test#1 (Multiple Choice 100 points)**
- **February 18** Lecture 10  Waves II
- **February 20** Lecture 11  Waves generation and Energy
- **February 25** Lecture 12  Hurricanes I
February 27  Lecture 13  Hurricanes II
March 4    Lecture 14  Tides I

**March 6**  **Test#2 (Multiple Choice 100 points)**

**March 10-14**  **Spring Break (NO CLASSES)**

March 18    Lecture 15  Estuaries I
March 20    Lecture 16  Estuaries II
March 25    Lecture 17  El Nino and Southern Oscillation (ENSO)
March 27    Lecture 18  El Niño and its effect on the Southeast U.S.

April 1     Lecture 19  Barrier Island and Processes
April 3     Lecture 20  Tidal Inlets
April 8     Lecture 21  Deltas
April 10    Lecture 22  Beach-Dune Interactions and Beach Classifications
April 15    Lecture 23  Beaches – Material & Morphology

**April 17**  **Test#3 (Multiple Choice 100 points)**

April 22    Lecture 24  Wind Blown transport & Review Session
April 24    Lecture 25  Coral Reefs

**Saturday MAY 3 at  12:30 PM Final Exam (OPTIONAL)**