COASTAL ZONE MANAGEMENT
PGEOG 383.56/GEO
11.56 (3cr/3hr)
MONDAY AND THURSDAY 1:10-2:25 PM, ROOM 1028
PROFESSOR K. H. SZEKIELDA

COURSE OBJECTIVES
1. To introduce the complexity of the coastal zone
2. Demonstrate the challenges and pressure in the coastal zone
3. Introduce concepts to manage the coastal zone
4. Provide guidelines for future coastal zone development

COURSE DESCRIPTION
The increasing pressure on the coast is demonstrated with competing demand that leads to conflicts with respect to the carrying capacity of our most precious resource area. Half of the US population lives along the coast which corresponds to an area representing less than 20% of the nation’s land base. By the year 2050 about three-quarters of the US population will inhabit coastal areas. The course therefore, will address critical issues related to environmental constraints, the carrying capacity of coastal areas and the need for coastal zone management. The lectures will follow a text by T. Beatty, D.J. Brower and A.K. Schwab (2002) and will be enhanced by special topics in the New York region as well as a field trip with the US Coast Guard to demonstrate ongoing projects in coastal area development. A briefing at the United Nations regarding international issues related to Coastal Zone Management is also scheduled.

LECTURE TOPICS
1. Introduction
Challenges in the coastal regime
Special nature of the coast, pressure and effects by human, rational for government intervention
Understanding the coastal environment
Definition of the coastal zone, coastal morphology and landforms

2. Coastal ecosystems and classification of coastal areas
Environmental parameters of the coast
Barrier islands, estuaries, coastal marshes, coral reefs, rocky shores and bluffs

3. Coastal processes
Wind, waves, currents and tides
Hurricanes and extra-tropical storms
Sea level rise, erosion and accretion
Climate change

4. Monitoring tools for coastal inventories
Conventional methods
Remote sensing, aerial photography and satellite monitoring

5. Pollution issues and toxic contaminants
Oil pollution
Heavy metals and organic toxants

6. Coastal development and management issues
Land use pattern and sustainable development
Protection of coastal waters and wetlands
Coastal resources and habitat conversation

7. Management of coastal regimes
International guidelines
Law of the Sea
State and local governments

8. Federal coastal policy
The Coastal Zone Management Act
Environmental policies

9. State coastal management programs
Managing constructions
Urban waterfront development
Beach access and land acquisition

10. Local coastal management
Carrying capacity
Land and property acquisition
Local sustainability

TEXT

Coastal Zone Management
Island Press,
Washington, DC

FIELD TRIP
Students will participate in one field trip for one day to an area with beach erosion and to an installation to control water flow in a tidal region. A potential site for this field trip is in the Hamptons offshore barrier island and the Shinnecock Canal with its lock controlling the water flow between the Peconic Bay and the Atlantic coastal waters. Briefings by the US Coast Guard and local coastal managers are planned.

**EVALUATION**

The grades will be based on the following distribution of 100 points:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>a. Mid-term examination</td>
<td>20</td>
</tr>
<tr>
<td>b. Research</td>
<td>30</td>
</tr>
<tr>
<td>c. Field trip and report</td>
<td>30</td>
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<tr>
<td>d. Oral presentation of research paper</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
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**OUTLINE FOR RESEARCH PAPER AND PRESENTATIONS**

You will summarize the preliminary research with a short presentation during the mid-term using power point. For the final evaluation, you are required to turn in your research on a CDROM, including the power point presentations, and, at the end of the semester, the final results have be presented in a formal session.

While the presentations are verbal summaries, I would like you to structure your final and complete research work along the following guidelines:

**TITLE OF YOUR RESEARCH**

Name:

1. General introduction and statement of objective (s) of your study/ research

2. Theoretical background and quantitative description of the topic you worked on.

3. Description of the web sites and bibliography used for identifying the phenomena or processes you observed.

5. Presentation of results.

6. Summary/ conclusion (s).

7. References: You should quote, in addition to web site addresses, at least 6 (six) appropriate references related to your topic (s).