MARINE SCIENCE I: OCEANOGRAPHY

May 26 – June 23, 2015
University of Southern Mississippi, Gulf Coast Research Laboratory

Course Syllabus

DESCRIPTION: This undergraduate course provides a multidisciplinary foundation in the fundamentals of the marine sciences. It introduces the terminology, principles, properties, relationships, and phenomena pertaining to three of the traditional sub-disciplines of oceanography: physical, geological, and chemical. The fourth, biological oceanography, is the subject of another class, however, the importance of the interaction of biotic and abiotic processes in the ocean will be addressed through exploration of timely issues in ocean science.

PREREQUISITES:
College algebra, semester chemistry, semester biology or instructor permission.

USM COURSE NUMBER
Lecture: COA-300 MAR-300
Laboratory: COA-300L MAR-300L

CREDIT
Lecture: 3 semester hours
Laboratory: 2 semester hours

INSTRUCTOR
Dr. Jessie Kastler  jessica.kastler@usm.edu
Office: MEC House Phone: 228-872-4269 (o)
985-856-5706 (c) 8 am – 9 pm

TA  Mr. Aaron Lamey  aaron.lamey@usm.edu
Office: MEC 5 Phone: 228-818-8861 (o)
228-861-4365 (c) 8 am – 9 pm

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Lab</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>65%</td>
<td>Average of 3 tests</td>
<td>20%</td>
</tr>
<tr>
<td>10%</td>
<td>Research paper</td>
<td>20%</td>
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<tr>
<td>10%</td>
<td>Paper presentation</td>
<td>20%</td>
</tr>
<tr>
<td>5%</td>
<td>Class assignments</td>
<td>10%</td>
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<tr>
<td>5%</td>
<td>Career exploration</td>
<td>10%</td>
</tr>
<tr>
<td>5%</td>
<td>Participation</td>
<td>10%</td>
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Please note:
1) Attendance is mandatory for all activities.
2) Lab assignments are subject to cancellation for weather or mechanical issues. A different assignment may be substituted, or weight of all other assignments may be modified.
3) Lecture topics and exam schedule may be modified to enrich learning experience.
4) If you find you are having trouble in the class, talk to the instructor me early in the term.
1) Welcome, Expectations, Grading

2) Introduction to Oceanography

3) Geological Oceanography
   a. Structure of the earth, ocean floor
   b. Plate tectonics
   c. Sedimentation, stratigraphy
   d. Ocean habitats, coastal depositional environments

4) Ocean Science Issue I – Louisiana Land Loss

TEST 1

5) Chemical Oceanography
   a. Physical properties of water
   b. Salinity, temperature and density
   c. Dissolved gases, pH, and Carbon cycle
   d. Global water cycle
   e. Nutrient cycles
   f. Photosynthesis

6) Ocean Science Issue II – Gulf Hypoxia

TEST 2

7) Physical Oceanography
   a. Latitude and longitude
   b. Coriolis pressure gradient
   c. Global wind patterns
   d. Surface ocean currents
   e. Deep ocean circulation
   f. Waves
   g. Tides
   h. Shoreline processes, Estuarine circulation
   i. Ocean Observing Systems

8) Ocean Science Issue III – Deepwater Horizon Oil Spill

TEST 3
ADA Syllabus Statement
If a student has a disability that qualifies under the Americans with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.
Address:
The University of Southern Mississippi
Office for Disability Accommodations
118 College Drive # 8586
Hattiesburg, MS 39406-0001
Voice Telephone: 601.266.5024 or 228.214.3232 Fax: 601.266.6035
Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1.800.582.2233 (TTY) or email Suzy Hebert at Suzanne.Hebert@usm.edu.