Marine Science II: Marine Biology (COA 301, 301L)
July 3rd – July 28th   Gulf Coast Research Laboratory

Jim Wetzel, Ph.D.
Pulaski L. Bealy Smith Professor of Marine Science
Department of Biology
Presbyterian College
503 S. Broad St.
Clinton, SC 29325
Tel. (864) 833-8412
FAX 864-833-8993
e-mail: jwetzel@presby.edu

Class Teaching Assistant: TBD

About me: My specific research areas in marine organisms concerns unusual modes of reproduction, particularly in fishes, and marine embryology of fishes and invertebrates. My primary research concerns the structure and function of the seahorse broodpouch, and the evolution of male brood brooding in seahorses and pipefishes. My alternate areas of interest in marine sciences include sensory systems in sharks (specifically the developmental ultrastructure of the *Ampullae of Lorenzini*), and in general the natural history of marine organisms in balanced ecosystems. I employ biological imaging (photomicrography and Scanning EM) of marine organisms to depict their intricate beauty and functional design in nature. It is my desire to pass on to students of all ages, this ongoing appreciation for the beauty of the ocean realm.

Course content/Goals: This is an introductory course in marine science designed to introduce students to the various types of habitats (beaches v. rocky shores v. coral reefs, etc.) that collectively comprise the marine environment, and the organisms that are associated with particular environments. Foremost, it is my intent to help students in this course learn, and learn to appreciate, the natural history of organisms within each unique habitat. Although this course emphasizes marine animals, some lectures and lab exercises will include both physical and chemical oceanography in order to provide for a well-rounded introductory course. As weather, time, tides, and the seasons permit, we will experiment with several aspects of the reproduction and embryology of select marine animals. Wherever possible, the lab exercises are chosen to supplement lecture materials. As part of this course, students will be encouraged to select some area of marine science of personal interest, and develop this topic more fully. Towards the end of this course, each student will ‘teach’ their area of specialization to the class, using a series of self-generated images in a ‘poster session’ or PowerPoint presentation. This course carries 5 hr. academic credit.

This is available in your choice of format:
Supplemental field guides:
Hoese & Moore, Fishes of the Gulf of Mexico (we will use this for fish identification).
Ruppert & Fox, Seashore Animals of the Southeast (for identification of invertebrates).

There is no lab manual – rather students will keep a personal lab/field notebook. This is
the combination of a personal journal (field excursions), and lab experiment notebook.
The format will be discussed during the 1st class meeting – you can include any
combination of writing, observations, sketches, etc. that relate to field and open water
work and lab exercises.

Grading: Grades will be based on two 100 point exams, two 50 point lab practicums, an
in class presentation (25 points), an accompanying write up of the presentation (25
points), the lab/field notebook (25 points), and a cumulative final exam (150 points).
Grades will be averaged as: 90% A, 88-89% B+ , 82-87% B, 80-81% B-, 78-79% C+, 72-
77% C, 70-71% C-, 68-69% D+, 62-67% D, 60-61% D-, 59% F

Absence policy: A maximum of three absences is allowed from lectures (although
students are responsible for any missed lectures). All labs sessions must be attended.
All field trips must be attended.

Disability Accommodations
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 emailing ODA at oda@usm.edu.

Academic Integrity
All students at the University of Southern Mississippi are expected to demonstrate the
highest levels of academic integrity in all that they do. Forms of academic dishonesty
include (but are not limited to):
1. Cheating (including copying from others’ work)
2. Plagiarism (representing another person’s words or ideas as your own;
   failure to properly cite the source of your information, argument, or concepts)
3. Falsification of documents
4. Disclosure of test or other assignment content to another student
5. Submission of the same paper or other assignment to more than one class without the explicit approval of all faculty members’ involved
6. Unauthorized academic collaboration with others
7. Conspiracy to engage in academic misconduct

Engaging in any of these behaviors or supporting others who do so will result in academic penalties and/or other sanctions. If a faculty member determines that a student has violated our Academic Integrity Policy, sanctions ranging from resubmission of work to course failure may occur, including the possibility of receiving a grade of “XF” for the course, which will be on the student’s transcript with the notation “Failure due to academic misconduct.” For more details, please see the University’s Academic Integrity Policy. Note that repeated acts of academic misconduct will lead to expulsion from the University.

Classroom Schedule (always subject to time, tides, weather, whim, etc.)

_____________________________ Week 1 _________________________________

July 3rd
Am – orientation, library tour, lab tour & general introduction
Pm – aquaria set-up, basic microscopy & photomicrography

July 4th TBD

July 5th
Am – field collecting methods; specimen curation
Pm – using taxonomic keys; visit to aquaculture facility

July 6th
Am – field collecting; specimen curation
Pm – specimen curation; biological concept related to the marine environment

July 7th
Am – field trip
Pm – specimen curation; photomicrography;
      Plankton & primary productivity

July 7th – boat trip (all day) R/V Franks
## Week 2

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 10th</td>
<td>Am – survey of the invertebrates</td>
<td>chapt. 4 &amp; 8</td>
</tr>
<tr>
<td></td>
<td>PM – special topics; echinoderm embryology</td>
<td></td>
</tr>
<tr>
<td>July 11th</td>
<td>Am – Kayaking Davis Bayou</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pm – Biology of the Vertebrates (Fishes part I)</td>
<td>chapt. 5</td>
</tr>
<tr>
<td>July 12th</td>
<td>Am – practicum #1; depart at 10:00 for the Estaurium</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pm – Estuaries &amp; Coastal Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>July 13th – boat trip (all day) R/V Hermes</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>July 14th</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Am – exam #1; Biology of the Vertebrates (fishes part II)</td>
<td>chapt. 6 &amp; 9</td>
</tr>
<tr>
<td></td>
<td>Pm – biology of the vertebrates part III; Gyotaku</td>
<td></td>
</tr>
</tbody>
</table>

## Week 3

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 17th</td>
<td>Am - specimen curation</td>
<td>chapt. 10 &amp; 11</td>
</tr>
<tr>
<td></td>
<td>Pm – corals and reef formation; the open sea</td>
<td></td>
</tr>
<tr>
<td>July 18th</td>
<td><strong>All day field trip (Florida)</strong></td>
<td></td>
</tr>
<tr>
<td>July 19th</td>
<td>Am – specimen curation; field botany</td>
<td>chapt. 12</td>
</tr>
<tr>
<td></td>
<td>Pm – specimen curation; deep sea biology</td>
<td>chapt. 13</td>
</tr>
<tr>
<td></td>
<td><strong>July 20 – boat trip (all day) R/V Franks</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>July 21st</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Am – specimen curation; open lab review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pm – adaptive physiology; special topics: seahorses</td>
<td></td>
</tr>
</tbody>
</table>

## Week 4

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>July 24th</td>
<td>Am – exam #2; open lab review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pm – practicum #2; marine conservation</td>
<td></td>
</tr>
</tbody>
</table>
Special topic: sensory biology of marine organisms

July 25th – Trip to New Orleans (Audoban Aquarium)

July 26th – Boat Trip m- all day  R/V Franks

July 27th
   Am – student presentations
   Pm – student presentations; class party

July 28th
   Am – final exam  * term papers due ** lab notebooks due
   Pm – lab/equipment cleaning as needed

***********************************************************************END***********************************************************************