Shark Biology  
COA 422/422L 
The University of Southern Mississippi  
Gulf Coast Research Laboratory  
Summer Field Program  
May 26- June 23, 2015

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CREDIT:  Lecture: 3 credit hours; Lab: 2 credit hours

PREREQUISITES:  COA 421 Marine Ichthyology, COA 301 Marine Biology, or instructor permission

DESCRIPTION:  This specialized course will provide an overview of elasmobranch biology with an emphasis on anatomy, physiology, and ecology of sharks, skates, and rays. Lecture will cover such topics as diversity, evolution, anatomy and physiology, behavior, ecology, and fisheries management. The laboratory will consist of elasmobranch identification and taxonomy, as well as anatomy and physiology through animal dissection. Several field trips will be taken to expose students to the various collecting methods used in field research. Students will be responsible for compiling a species catalog, writing lab reports, and researching an elasmobranch related concept to produce a research paper and oral presentation.

TEXT:  

GRADING:  

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<tr>
<th>Lecture</th>
<th>Lab</th>
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<tr>
<td>Exams (2 Written)</td>
<td>Exams (2 Practicals)</td>
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<td>70%</td>
<td>60%</td>
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<td>Presentation</td>
<td>Species Catalog</td>
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<td>Quizes</td>
<td>Lab Report</td>
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<td>Participation</td>
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Scale  
A  90-100%; B  80-89%; C  70-79%; D  60-69 %; F  0-59 %

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.
LECTURE COURSE OUTLINE:

I. Diversity (Chapters 1 & 2)
   1. Evolution of Elasmobranchs
   2. Jaw Evolution (pg. 321-322)
   3. Classification/Systematics

II. Anatomy and Movement (Chapters 3, 12 & 13)
   1. External Morphology
   2. Skeletal System
   3. Age Determination
   4. Muscular System
   5. Locomotion

III. Physiological Systems
   1. Digestive System (Chapter 13)
   2. Respiratory System (Chapter 6)
   3. Reproductive System (Chapter 11)
   4. Circulatory System/Endothermy (Chapter 5)
   5. Urinary System/Osmoregulation (Chapter 4)
   6. Immune System
   7. Nervous System/Senses (Chapter 6-10)

IV. Ecology (Chapters 14-16)
   1. Ecological Physiology of Coastal Sharks
   2. Feeding Ecology
   3. Essential Fish Habitat
   4. Population Dynamics
   5. Habitat Use
   6. Nursery/Pupping Areas

LAB COURSE OUTLINE:

Week 1 May 26 – May 29
- Identification and Classification
  - Work on elasmobranch catalog
  - External Anatomy
  - Blood Analysis
  - Boat Trip on the McIlwain

Week 2 June 1 – June 5
- Identification and Classification
  - Work on elasmobranch catalog
  - Blood Analysis
  - Boat Trip on the McIlwain

Week 3 June 8 – June 12
- Identification and Classification/Anatomy
  - Aging Vertebrae
  - Skeletal and Muscular Systems
  - Digestion, Respiration, Circulation, Excretion
  - Lab Practical
  - Species Catalog Due
  - Boat Trip on the McIlwain

Week 4 June 15 – June 19
- Anatomy and Physiology
  - Reproduction
  - Nervous and Sensory Systems
  - Blood Analysis Report Due
  - Boat trip on the McIlwain

Week 5 June 22 – June 23
- Lab Clean Up
- Final Lab Practical