I. COURSE: BIOL. 4409 Field and Sampling Techniques  
Lecture: M-R 8-9:55  BH 113  
Laboratory: M-R 10-11:55  BH 113  

II. FACULTY: Dr. Roy L. Lehman  
CS 247  
Phone: 825-5819  
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III. COURSE DESCRIPTION:  
The study and practice of techniques for safe and sound field work in the sciences. The course of study includes safety, logistics, equipment operation and maintenance. The operation of small boats, navigation and seamanship is a primary component of the class. The scientific focus will be on methods of ecological and environmental sampling.  

IV. TEXTBOOK:  
Required:  

V. COURSE OBJECTIVES AND COMPETENCIES:  
The student will:  
- successfully complete a course of safety instruction including first aid, CPR, boating and travel safety.  
- utilize proper operational and maintenance procedures in the handling of small equipment, vehicles and boats.  
- describe the techniques and methods used to set-up, maintain, care, and take-down field camps.  
- describe the methods of map interpretation and the use of the compass and GPS.  

• describe techniques of field sampling, use of photography and proper field note taking skills.
• plan and undertake a field trip including logistics and budget planning.

VI. COURSE REQUIREMENTS AND GRADING CRITERIA:

Evaluation is ongoing to enhance experimental learning, providing the student with feedback about performance in meeting the course objectives. Conferences with the faculty provide opportunities to discuss progress toward the course objectives. Grading is a process of measuring the outcome of learning against standards and assigning a symbol to the level of performance achieved.

All students are expected to conform to college-level standards of ethics, academic integrity, grammar and spelling. In particular, you should review pages 24-41 of the 2007-2008 A&M-CC catalog. Except in cases where prior arrangements have been made with the instructor, there is no provision for making up late work and/or missed quizzes or exams. All excuses MUST be recorded with the professor by e-mailing information including the student’s name, class, date, time and reason for the absence. Two or more absences from class/field activities may result in an unsatisfactory grade for the class.

This is a field course and all field trips are mandatory!!!

Required Equipment/Materials for the class/field trips

<table>
<thead>
<tr>
<th>Sunglasses</th>
<th>Hat</th>
<th>Pocket Knife</th>
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</thead>
<tbody>
<tr>
<td>Sunscreen</td>
<td>Field Notebook</td>
<td>Closed-Toed Shoes</td>
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VII. COMPONENTS OF COURSE GRADE:

<table>
<thead>
<tr>
<th>VALUE</th>
<th>TOTAL</th>
</tr>
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<tbody>
<tr>
<td>1. Lecture Examination (3)</td>
<td>100</td>
</tr>
<tr>
<td>2. Laboratory/Field Exams</td>
<td>500</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>800</td>
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</tbody>
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FINAL GRADE: Number of points earned ÷ 800 = FG (%)

VIII. LECTURE TOPIC OUTLINE “TENTATIVE”

A. Introduction 6/1
B. Boat Operation and Requirements 6/1 – 6/2
   1. Equipment Requirements and Recommendations
   2. Boating Terminology
   3. PFD Requirements
   4. Required Safety Equipment
   5. Safety Equipment Checklist

2
Techniques of Safe Boating 6/2 – 6/3
1. The Float Plan
2. Piloting and Navigation
   a. Rules of the Road
   b. Buoys & Markers
   c. Lights
D. Boating Emergencies 6/2 – 6/3
   1. Fire Safety
   2. Man Overboard Procedures
   3. Fueling Precautions
   4. Foul Weather Handling
   5. Distress Signals
   6. Disabled Boat
E. Knots & First Examination  Engine Starting & Techniques  Exam #1 6/4
F. Weather & Boating 6/8
   a. Cloud Types
   b. Weather Fronts
   c. Wind
   d. Air Masses & Pressure
   e. Fog
   f. Thunder & Lightning
   g. Weather Maps
G. Seamanship Skills 6/10
H. Boat Trailers & Launching  Trailer Techniques-Parking Lot 6/15 & 6/17
I. Vehicle Operation and Maintenance  Trailer Bearing Maintenance 6/22
   1. Motor Maintenance
   2. Power Train Maintenance
   3. Electrical System Maintenance
   4. Chassis Maintenance
L. The Nautical Chart & Topographic Maps 6/24 - Exam #2
K. General Equipment Operation and Maintenance 6/24
   a. Camping Equipment
   b. Gas Stoves and Lights
   c. Tent Maintenance
   d. Drinking Water Purification
   e. Waste Management
M. Wilderness First Aid 7/1
N. Field Camp Safety, Procedures and Activities 6/25-26
O. Ecological and Environmental Equipment Usage 6/25 – 6/26
   1. Sampling Methods & Ecological Measurements
   2. Plant Sampling Methods
   3. Terrestrial Organisms
   4. Aquatic Sampling
      a. Benthos
      b. Plankton
      c. Nekton
      d. Chemical Measurements

P. Field Notes Taking Skills 6/25
Q. Field Experience 6/25-6/26

EXAMS: “TENTATIVE”
6/4, 6/24 & 7/2

FIELD DAYS: “TENTATIVE”
6/9
6/11
6/16
6/18
6/23
6/25-6/26 – Field Experience & Begin Final Evaluation
6/29
6/30 – Final docking exam