I. COURSE: BIOL. 5409 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 roy.lehman@tamucc.edu

III. COURSE DESCRIPTION:

The study of advanced techniques required for proper field work in the sciences. The course includes ecological sampling methods, safety, logistics, equipment operation and maintenance and travel concerns. The student will gain insight into the methods and reasons for field sampling and consequent laboratory procedures and measurements. This will aid in developing a better understanding of how each contributes to the overall comprehension of research techniques and how those activities affect society and the environment.

IV. TEXTBOOK:

Required:


V. COURSE OBJECTIVES AND COMPETENCIES:

The student will:

- investigate techniques of field sampling in preparation for thesis research.
- evaluate current ecological field and sampling methods used by the research community.
- successfully complete a course of study in field safety techniques.
plan and undertake a field trip including logistics and budget planning.

develop an understanding of the importance of project preparation, consistent record maintenance and research reporting methods of successful researchers.

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.

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

VII. COMPONENTS OF COURSE GRADE:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Examination (3)</td>
<td>40%</td>
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<tr>
<td>Field Procedure Evaluation</td>
<td>30%</td>
</tr>
<tr>
<td>Annotated Bibliography of Sampling Methods</td>
<td>10%</td>
</tr>
<tr>
<td>Research Projects (4)</td>
<td>20%</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>100%</td>
</tr>
</tbody>
</table>

All students are expected to conform to college-level standards of ethics, academic integrity, grammar and spelling. In particular, you should review pages 25-34 of the 2000-2001 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.

VIII. TOPIC OUTLINE

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

C. 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 & 16

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
7/1 – Final docking exam
TEXAS A&M UNIVERSITY-CORPUS CHRISTI
COLLEGE OF SCIENCE AND TECHNOLOGY

SYLLABUS

CATALOG: Biol. 4409

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 roy.lehman@tamucc.edu

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!!!

<table>
<thead>
<tr>
<th>Required Equipment/Materials for the class/field trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunglasses</td>
</tr>
<tr>
<td>Sunscreen</td>
</tr>
</tbody>
</table>

VII. COMPONENTS OF COURSE GRADE:

<table>
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<tr>
<th>VALUE</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>800</td>
</tr>
</tbody>
</table>

FINAL GRADE: Number of points earned ÷ 800 = FG (%)

VIII. LECTURE TOPIC OUTLINE "TENTATIVE"

A. Introduction
B. Boat Operation and Requirements
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   2. Boating Terminology
   3. PFD Requirements
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   5. Safety Equipment Checklist
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   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
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      d. Chemical Measurements

P. Field Notes Taking Skills
Q. Field Experience

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 dockling exam