Erich Follmann
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Office Hours: Tuesday 10-12 a.m.
or by appointment

3 Credits
Location: Irving 208 (lecture); Irving 208 (lab).
Time: MW 1-2 (lecture); R 2-5 (lab).
Prerequisite: graduate standing or upper class with instructor approval.

Course description: An introduction to the basics of radio and ultrasonic telemetry and their application to the study of ecology, behavior and physiology of vertebrates in terrestrial, freshwater and marine environments. Review of concepts, equipment demonstration and a class project to expose students to an important tool for biological, fisheries and wildlife investigations. Students should be able to develop a telemetry project with appropriate selection of equipment and its use following completion of the course. Lectures and lab demonstrations will form the basis for the course.

Class attendance is not recorded but students are expected to attend all sessions. Class participation through questions and sharing of personal experiences using these technologies is encouraged. The library and the internet are valuable support services to assist students in developing their hypothetical projects involving some biotelemetric approach. In the case of students with disabilities, the instructor will work with the Office of Disabilities Services to provide reasonable accommodation.

LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
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<tr>
<td>Sept 4</td>
<td>LABOR DAY HOLIDAY: NO CLASS.</td>
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<tr>
<td>Sept 6</td>
<td>Course introduction.</td>
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<tr>
<td>Sept 11</td>
<td>History of use; applications; advantages/disadvantages.</td>
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<td>Sept 13</td>
<td>Tracking antennas.</td>
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<td>Sept 18</td>
<td>Tracking antennas/Receivers.</td>
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<td>Sept 20</td>
<td>Receivers.</td>
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<td>Sept 25</td>
<td>NO CLASS: TWS Conference.</td>
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<td>Oct 2</td>
<td>Transmitting systems.</td>
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<td>Oct 4</td>
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<td>Oct 9</td>
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<td>Oct 11</td>
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<tr>
<td>Oct 16</td>
<td>PIT tags; RFID tags; camera surveillance.</td>
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<td>Oct 18</td>
<td>Attachment approaches.</td>
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<td>Oct 23</td>
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<td>Oct 25</td>
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Nov 1  Special Problems--marine/underwater.
   --physiological monitoring.
   6  Satellite telemetry.
   8  GPS telemetry.
  13  Radar (R. Day, ABR, Inc.).
  15  Ultrasonic telemetry.
  20  Tracking methods/approaches.
  22  Animal capture/handling/IACUC.
  27  Data analysis GIS Applications (F. Huettmann).
  29  Arctic whale projects (L. Quakenbush, ADF&G).

Dec 4  Bowhead whale subsistence hunt.
   6  Project design.
  11  Student presentations.

LAB SCHEDULE

Aug 31  NO CLASS.
Sept 7  Introduction; tracking antenna demonstration.
  14  LARS Trip; reindeer and musk ox project.
  21  Animal instrumentation.
  28  NO CLASS: TWS Conference.
Oct  5  Transmitter encapsulation/calibration.
  12  Fish instrumentation (W. Morris, DNR).
  19  Waterfowl instrumentation (M. Lindberg).
  26  Marine mammal instrumentation (M. Castellini, IMS).
Nov  2  Open.
   9  Open.
  16  Bioacoustics (J. Kelley, IMS).
  23  THANKSGIVING HOLIDAY.
  30  Student presentations.
Dec  7  Open.

GRADING POLICY.

50% of grade will entail a test on material covered in the course outline; 35% on a research proposal to be prepared on a hypothetical study entailing a specific problem using telemetry; and 15% researching and presenting a relevant topic, such as the effects of implant transmitters on survival. Proposal to be evaluated as follows: Animal Capture (3%), equipment selection (25%), procedures and methods (40%), logic of approach (25%), references (3%), and overall quality (4%). There will be an oral presentation of the proposed research in class at the end of the semester. Due dates for the proposal will be late in the semester.

Letter grade: 100-90 A, 89-80 B; 79-70 C.
BOOKS AND READINGS.


Additional readings will be assigned from materials on reserve at the BioSciences Library and in the handouts to be distributed during the course.