FiW 4214 – Wildlife Field Techniques – Spring 2019

Fridays 1:25-4:25 pm @ 317B Cheatham Hall

Plus 10-day intensive at Mountain Lake Biological Station (August 13-23)

INSTRUCTORS:

Dr. Marcella J. Kelly	David McNitt	Vance Nepomuceno
147 Cheatham Hall	318 Cheatham Hall	318 Cheatham Hall
(540) 231-1734	(540) 231-7513	(540) 231-7513
makelly2@vt.edu	dmcnitt91@gmail.com	vnepo07@vt.edu

Undergrad Teaching Assistants: Megan Lee (leemb1@vt.edu); Allen Milby (milbs94@vt.edu); Georgia Martin (georgia2@vt.edu); Jillian Everly (jeverly4@vt.edu); Michael Muther (mgmuther@vt.edu); Deirdre Conroy (dconroy1@vt.edu); Keiran Zwirner (keiranz@vt.edu)

Course Format

This course will meet during the first 6 weeks of the spring semester 2019. This will be followed by a 10-day intensive field course in August (13-23rd) at Mountain Lake Biological Station (MLBS), which is about a 35 to 40 minute drive from Blacksburg.

Required Text

Silvy, N.J. (ed.). 2013. The Wildlife Techniques Manual: Volume 1: Research. Volume 2: Management, 2-vol. set. Seventh Edition. The Wildlife Society Inc., Bethesda, MD.
Note: It is ok to share the book with 1 or 2 of your classmates. It is also available at the library. Selected chapters also available on Canvas in Files>Silvy Book

Required Equipment

A field notebook. Preferably a waterproof rite-in-the rain, type of notebook. http://www.riteintherain.com/ or www.amazon.com, or available at the bookstore

A hand held, pocket field compass Suunto MC-2D. Specifically this model! It might be easiest to simply purchase this through Amazon. *You will need to purchase your compass by the 4th lab!*

A respirator and completion of respirator training. The department of Environmental Health and Safety (EHS) at VT will give a presentation on respirators and other health issues related to handling wild animals during Lab 1. The EHS Building is right next to Parking Services on Tech Center Drive. Cost of your personal respirator runs $13-30 depending on the type and fit you need. Sign up for fit testing in Lab 1 and do NOT miss your appointment.

Course Objectives:

This course is designed to acquaint students with the large variety of techniques and skills commonly used in wildlife research and/or management and to help students gain understanding of, and an appreciation for, the appropriate use of these tools and techniques. Upon completion, students should be able to:

a) Understand and convey the philosophy and intent of wildlife research.
b) Identify, describe, and correctly employ a variety of noninvasive survey methods commonly used for wildlife research.
c) Identify, describe, and correctly employ appropriate techniques to physically capture and mark a wide variety of wildlife species.
d) Learn how to assess habitat requirements for various wildlife species.
e) Present results of scientific research in both written and oral forms

Students will gain hands-on field experience including: orienteering by compass, map, and GPS unit, capture and handling of live birds, mammals, and herps, instruction in radio telemetry, camera trapping, habitat measurements for wildlife, experimental design and data collection, analysis of data collected and presentation to the class of group field project.

Course Schedule: Lab meets for 6 Fridays (beginning of spring semester 2019). The last lab is lab practical exam!

Dates		Topic	Assigned Readings
January 25	**Lab 1**	**<u>Introductions and course mechanics</u>** 1. Lecture on Scientific Method, Research Planning, ACUC 2. Health & Safety – Presentation from EHS 3. Knots! Learn 6 useful knots ***Online Quiz 1: Due Thursday following lab***	*Silvy: Chapter 1 pps 1-16 and 23-32* *Braun: Chapter 7* pps 185-195 *(uploaded)* ***Check Canvas***
February 1	**Lab 2**	**<u>Noninvasive Survey Techniques</u>** 1. Natural Animal Signs 2. Remote Camera Trapping 3. Noninvasive Genetic Sampling 4. Acoustic Monitoring Techniques - Lectures, handouts - Practical: tracking and camera session o DUE IN CLASS TODAY ***Plaster cast assignment*** ***Online Quiz Due Thursday following lab***	*Selected papers & book chapters - see additional reading in Lab 2 folder on Canvas* ***Due March 1*** ***Check Canvas***
February 8	**Lab 3**	**<u>Invasive Capture Techniques</u>** Why capture and mark wildlife? Various techniques for birds, mammals, other wildlife - Lecture, handouts - Practical: setting various traps - Guest speakers –trapping methods ***Online Quiz Due Thursday following lab***	*Silvy: Chapters 3 and 9* <u>Bring book to Lab</u> ***Check Canvas***
February 15	**Lab 4**	**<u>Orienteering – Compass & Map</u>** - Lecture, handouts - Practical: complete outdoor - orienteering assignment & map ***Orienteering Assignment & Map*** ***Online Quiz Due Thursday following lab***	*Selected book chapters - see reading in Lab 4 folder on Canvas* ***Due Feb.22*** ***Check Canvas***
February 22	**Lab 5**	**<u>Review Session (catch-up!) All materials will be out for review</u>** Go over gear list and other notes for 10-day intensive. ***Orienteering Assignment & Map DUE***	
March 1	**Lab 6**	**<u>Take Practical Exam!!</u>** ***Plaster cast (including worksheet) due by Friday March 1***	

Field Intensive Portion of the Course FiW 4214
Summer (August 13-23, 2019)

Meet at Cheatham Hall parking lot at **9:00 am on Tuesday, August 13th** to carpool to Mountain Lake Biological Station (MLBS - http://www.mlbs.virginia.edu/). **We need volunteer drivers**! The course will finish by 12 noon on Friday, August 23rd. We will distribute the course schedule and a more detailed equipment list for the field portion of the course by the end of the spring semester labs.

Requirements (a thorough gear list will be given out at the end of the lab sessions)

- All students stay on-site at Mountain Lake Biological Station (MLBS).
- Students must bring their own food for 10 days: cooking groups will be organized during spring semester lab sessions.
- All students must bring their own sleeping bag (or warm blankets). Make sure it is a good sleeping bag as it will be cold at night.
- Students must bring appropriate field clothes (e.g. hiking boots, warm clothes, warm hat, raincoat, sunscreen, etc.).
- Students must bring an alarm clock/phone.
- All students must bring their compasses.
- All students must bring a headlamp – required for nocturnal herp surveys.
- All students must bring their textbooks and lab notes.
- Highly recommended to bring a laptop to the field course since we only have a limited amount of computers at the MLBS computer lab. If not, students must bring a USB flash drive to save work and to complete computer assignments. There is wireless at MLBS

Optional Gear

- Camera
- Binoculars – if you are interested in birds or doing a bird project, bring binoculars
- Personal GPS unit
- Bug repellent

Evaluation of Student Performance will be based on:

(*This is subject to change as determined by the instructors*)
VT – at Virginia Tech; MLBS – at Mountain Lake Biological Station

• Lab practical exam (one per student) - VT	100 points
• Orienteering map (one per student) - VT	40 points
• Plaster cast assignment (one per group)- VT	40 points
• Lab #2 Assignment – non-invasive methods	25 points
• Online quizzes (4 at VT - each 10 pts & 2 at MLBS - each 10 pts)	60 points
• Orienteering field trial (one per 2 students) – MLBS	30 points
• Telemetry triangulation assignment (one per group) - MLBS	40 points
• Written project (one per group) - MLBS	100 points
• Oral presentation of project (one per group) - MLBS	50 points
• Peer evaluation of group project - MLBS	30 points
• Instructors and TAs evaluation of field ability - MLBS	60 points
• Final exam (one per group) - MLBS	100 points
Total points	**675 points**

Start thinking about a ***field project*** that you would like to work on. Students will be divided into groups for data collection and analysis and will present results of their field work and data analysis to the entire class at the end of the field course.

Field Group Projects at MLBS:

There will be five main research projects (see below) – we listed potential research objectives (others are possible – e.g. response of wildlife to human activity etc.):

A. **Birds –** use DISTANCE estimation to study the influence of habitat associations on bird density for target species and/or determine status over time (use of past data required)
B. **Herps -** use of area constrained searches (i.e. quadrat sampling) to study herp diversity, habitat associations, and/or population demography and/or status over time (use of past data required)
C. Small mammals – conduct small mammal trapping and mark-recapture to study the small mammal diversity, habitat associations, determine density through mark-recapture and/or population demography or status over time (use of past data required)
D. Remote Camera Traps – use of remote camera traps to study wildlife diversity for especially large mammals, habitat associations, activity patterns, trap success, and/or population status over time (use of past data required).
E. **Bats –** use of anabat detectors to conduct "virtual" point counts and transect surveys of bat species to study the influence of habitat features on bat occurrence. Project dependent on number of students in the course (and especially – number of bat left in the wild).

Accommodations: If you need adaptations or accommodations because of a disability (learning disability, attention deficit disorder, psychological, physical, etc.), if you have emergency medical information to share with us, or if you need special arrangements in case the building must be evacuated, please make an appointment with one of us as soon as possible.