Course Syllabus

Title WFB 015 – Wildlife Track Analysis
Credits 1
Instructor(s) Mike Kessler

Meeting dates and times
Course meets on four ½ days on Saturdays (weekends during summer).

Location
UVM Jericho Research Forest, 127 Tarbox Road, Jericho, Vermont, 05465

Course Description
This course immerses the student in wildlife track analysis by investigating the story held within each track through the application of scientific principles, valid forms of reasoning, hands-on data collection, and critical thinking. The story is successively re-told from the perspective of the substrate, the foot, the creature and the overall context in which the movement occurred upon the landscape. Emphasis is placed on gleaning as much information as possible about the animal and its surroundings for the student to prove or disprove their analysis and refine their interpretation of the actions that occurred.

The analysis of the animal's track is based upon the scientific laws and principles of geotechnical engineering, environmental science, and the study of human and animal locomotion. Students apply basic archaeological principles for sequencing and relative date aging using inductive and deductive reasoning to formulate and test their story of what the animal was doing when it made the track. Students will develop and hone their eye for detail, sense of context, and critical problem solving – essential skills for academic, forensic, and scientific investigation.

The students' comparison of their own movement with that of wildlife kindles greater awareness of the role and impact of their own movement and, tangentially, of the wildlife studied. By developing a deeper awareness and understanding of tracks, a deeper awareness and understanding of animals' movements in relation to each other and the landscape emerges, affording new insights into their behavior.

No prerequisite.

Goals
1. To experience movement on the landscape from the animal’s perspective.
2. To mimic the animal's movement from the evidence left in its track.
3. To read a track in sufficient detail to discern the animal's external bodily motions, for example, changing their head position from feeding on the ground to looking behind them.

Learning Outcomes
1. Seeing and reading tracks through the lens of the forces that created them, specifically in regard to progression, postural control, and adaptation.
2. Awareness of the principles of human and animal locomotion.
3. Understanding of tracks as physical evidence.
4. Awareness of how bodily movement refers across the fulcrum of the ankle and into the feet, ultimately manifesting in the track.

General Course Information

Course Policies

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Prior experience – There are no prerequisites for this course and it does not assume nor require that the student have any background, experience, or education in tracking. Students are simply asked to exhibit an open mind, positive attitude, thirst for knowledge, and respect for others.

Preparation and Participation – One to two hour outdoor excursions from the onsite classroom for examination of tracks will require moderately easy hiking in seasonable weather conditions in the hills of the research forest. Students are expected to dress accordingly. Snowshoes are not needed in winter. There are no breaks for cell phone use as one contiguous span of focused learning time is required.

Transportation – Students are responsible for their own transportation to and from the Jericho Research Forest and are strongly encouraged to share rides.

Instructor Communications – The UVM Blackboard online learning system and the Banner Student system are the two modes of instructor communication for this course. Students are responsible for using the Blackboard system and also for receiving messages sent to their UVM email account and/or insuring that their UVM email account is setup to forward messages accordingly.

Intellectual Property Rights
Replication of ONLINE class (audio or video-picture-camera/phone, etc.) is PROHIBITED in ALL cases without explicit instructor approval.

Consistent with the University’s policy on intellectual property rights, teaching and curricular materials (including but not limited to classroom lectures, class notes, exams, handouts, and presentations) are the property of the instructor(s). Therefore, electronic recordings and/or transmissions of classes or class notes are prohibited without the express written permission of the instructor. Such permission is to be considered unique to the needs of an individual student (e.g. ADA compliance), and not a license for permanent retention or electronic dissemination to others.

*** Videos, screencasts, and other instructor-generated content provided on Blackboard is intended for use by registered students as a private study aid and is not to be shared or published.

Attendance Expectations
Attendance is expected at all classes. Opportunities to makeup a missed class may be afforded, but are dependent upon instructor’s availability. Observance of religious holidays is followed per the University’s Policy as follows:

Students have the right to practice the religion of their choice. Each semester students should submit in writing to their instructors by the end of the second full week of classes their documented religious holiday schedule for the semester. Faculty must permit students who miss work for the purpose of religious observance to make up this work.

Because the course is scheduled differently than the regular 15-week semester course, please communicate known absence(s) to the instructor before the course begins.

UVM ACCESS Support
In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the office of Disability Services on campus. ACCESS works with students and faculty in an interactive process to explore reasonable and appropriate accommodations via an accommodation letter to faculty with recommended accommodations as early as possible each semester. Contact ACCESS: A170 Living/Learning Center, 802-656-7753; access@uvm.edu; or www.uvm.edu/access.

Contributions in Class
Students are expected to participate in both the classroom and the field exercises and to provide for their individual comfort and care as weather dictates. As important, everyone is expected to be a respectful and engaged listener to their colleagues and instructor.

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Academic Honesty & Professionalism
Students are expected to understand and follow all University of Vermont policies and regulations.

Required Reading (available online in Blackboard):

- **Principles of Animal Locomotion**
  Chapters 1, 5.1, 5.2

- **The Science and Art of Tracking**
  Chapters 5, 6

- **The Science of Track Analysis**
  M. Kessler, recorded lecture from WFB 185/RMS 095 Human and Wildlife Track Analysis.
  Running time 47 minutes.

Electronic Submissions/Internet Use
The UVM Blackboard online learning system is used for all course announcements, access to course materials, and submissions of work, namely the student’s personal reflection journals. (See “Instructor Communications” in Course Policies above.)

Student Evaluation/Assessment

Grading
The overall course grade is a summation of the following:

[Note: Understanding and performing wildlife tracking represents a skill that requires active practice and participation, so attendance will be a key component to learning outcomes.]

- **20%** Pre-Class Reflection
  Instructor prompted reflection of assigned reading material.

- **25%** Attendance and Contribution
  Tracking is a skill that requires active participation; therefore, attendance and engagement is a key component to the achievement of learning outcomes.

- **25%** Field Work
  Students are not expected to be proficient in tracking, but to apply themselves with an open mind and positive attitude in order to demonstrate their ability to explore the landscape in a self-directed manner guided by both deductive and inductive reasoning.

- **30%** Final Reflection Paper
  Instructor prompted reflection – student chooses one of three options.

Format for Expected Work
Materials provided by instructor.

Scoring Rubrics
The following rubric is used to score these components of the students overall grade:
  o Class participation
  o Independent project
  o Final Reflection

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### Grade

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<tr>
<th></th>
<th>F</th>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
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</thead>
<tbody>
<tr>
<td><strong>Identification</strong> (of track features)</td>
<td>Unable or unwilling to identify any features of track</td>
<td>Identifies partial track features in tracking box</td>
<td>Identifies complete track features in tracking box</td>
<td>Identify partial track features in varied soil types</td>
<td>Identifies complete track features in varied forest debris</td>
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<td><strong>Interpretation</strong> (of track features)</td>
<td>Unable or unwilling to interpret any features of track</td>
<td>Interprets partial track features for speed, direction, &amp; head position</td>
<td>Interprets complete track features for correct speed, direction, &amp; head position</td>
<td>Partially correlates track features for speed, direction, &amp; head position</td>
<td>Completely correlates track features for speed, direction, &amp; head position</td>
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<tr>
<td><strong>Extrapolation</strong> (of track features)</td>
<td>Unable or unwilling to extrapolate any features of track to influences of the landscape</td>
<td>Partially extrapolates track features to general influences on the landscape</td>
<td>Completely extrapolates track features to general influences on the landscape</td>
<td>Partially extrapolates track features to specific influences on the landscape</td>
<td>Completely extrapolates track features to specific influences on the landscape</td>
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<tr>
<td><strong>Journal Reflections</strong></td>
<td>Not completed</td>
<td>Restatement of activities without reflection</td>
<td>Repetition of prior reflections and/or instructor comments without new personal insight</td>
<td>New personal insights relating to the material presented in class</td>
<td>New personal insights beyond the boundaries and material of the class</td>
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### Percentage Contribution of Each Assignment
See “Grading” above. No other graded assignments.

### Instructional Sequence

**1st Class – Forces Imparted Through Forms**
- **Introduction**
  - The ankle as the ‘fulcrum’ between body-and-foot movements
  - Importance of scientific experimentation
  - Track aging
- **The landscape within the track**
  - Track floor
  - Track walls
  - Track lateral ridge and horizon cut
- **Drawing the topography of tracks**
  - Floor and walls
  - Overall track and digital tracks
- **Distortion!! Transitioning from box to forest**
  - What happens when we leave the controlled environment of the tracking box
  - Your tracks
  - Animals’ tracks

**2nd Class – Syntax and Sequencing Track Features**
- **Introduction**
  - Physics of change of direction upon track walls
  - Physics of head position upon track floor and walls
  - Physics of forward motion upon earth in track floor

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• Reading the above in a track
  o Indications of forward motions (ie, walk/trot/lope/bound/gallop etc.)
  o Indications of change of direction
  o Indications of head position (ie, up, down, left, right etc.)
• Drawing tracks in tracking box
  o Forward motion
  o Change of direction
  o Head Position
  o The digits (ie, toes)
• Transition from box to forest
  o Your tracks
  o Animal tracks

3rd Class – Building Story 1 ‘ITEM’ at a Time
• Introduction
  o Sequencing multiple movements
  o Discounting false indications
  o Building an hypothesis through the preponderance of evidence
  o Piecing together the story behind an animal’s movements in its track
• The digits
  o Tracks within the track
  o Toes vs. the foot
• Drawing tracks in tracking box
  o Learning to identify and sequence the indicators in a track
  o Condensing a set of related indicators into an overall body movement
• Transition from box to forest
  o Your tracks
  o Animal tracks
  o Acting out the animal’s movements in each track along the trail

4th Class – Proving, Disproving, and Refining Story
• Introduction
  o Interpreting animal movements within the context of the landscape
  o Confirming analysis of current track to that of the preceding track and next track (reading the past, present and future from one track)
• Sensing how our own movements through the forest affect the forest’s movements and vice versa
  o Each track is simultaneously a part of the landscape and the landscape is a part of each track forming an inseparable whole
  o Discovering the interaction of animals (predator and prey) through their tracks
  o Identifying the direction of other animals and confirming by locating their tracks