



New Mexico Highlands University
Department of Forestry

Forestry Field and Safety Practices

FORS 2010 with Dr. Michael Remke

Fall 2024



Figure 1: Matt Tuten, silviculturist, explains project goals and objectives to participants for a project in a mixed conifer forest on the San Juan National Forest.

Welcome to Forestry Field Safety Practices. In this class, we will work as a team to learn and understand various elements of forestry while out in the forest. This class aims to collaborate and mutually share and learn as a group. We will spend most of our time together outside, so be prepared to have fun while learning!

Forestry Field Safety Practices (FORS 2010) will be an adventure in learning about the different ecosystems and forestry practices in Northern New Mexico. We will gain knowledge and skills in using forestry equipment, safe field practices, monitoring, plant identification, and communication. We will meet with a variety of professionals in forestry.

Learning the knowledge and skills to work in the field of Forestry

Table of Contents

COURSE INFORMATION..... 3
LEARNING GOALS..... 4
ASSESSMENTS AND GRADING 7
COURSE FORMAT 8
FINAL PAPER..... 8
TENTATIVE SCHEDULE 10
COURSE POLICIES:..... 13
ACADEMIC AND PROFESSIONAL DEVELOPMENT SERVICES: 16
HARASSMENT AND CRISIS SERVICES: 17
SUPPORT AND SERVICES: 17
COURSE TOPICS 19
RULES OF ENGAGEMENT: 20
RUBRICS 21




Figure 2: Reviewing graphs to assess treatment effectiveness in Southwest Colorado. Dr. Julie Korb explains her research to diverse stakeholders.

Learning the knowledge and skills to work in the field of Forestry

Course Information:

Course Number:		Instructor:
FORS 2010		Dr. Michael Remke
Term:	Credits:	Office:
Fall 2024	4	Ivan Hilton Science Building (HSCI) 135
Meeting Time:	Meeting Place:	Email:
M-F July 29- August 09, 8:00am-5:00pm	Industrial Arts 220	mremke@nmhu.edu
		Phone:
		(505)454-3320
Teaching assistant:		

Student Hours:

Student Hours: Spring 2024		None of these times work?	
Day	Time		
Monday	12:00pm-2:00pm lunch hour	If none of these times work scan this QR Code to schedule an alternative time to meet	
Tuesday	2:00pm-4:00pm seltzer hour		
Thursday	9:00am-11:00am coffee hour		
*Please bring your own beverage to enjoy with our conversation, if you want			

~ Student hours are when my office door is open for any drop-in conversation. I am here to discuss forestry in general, specific questions about course content, or anything else you can think of. Please come and say hello!

Learning the knowledge and skills to work in the field of Forestry



Textbook: There is no required textbook for this course. All readings will be posted to Brightspace. A **Write-in-the-Rain side spiral waterproof field notebook** 4.625" x 7" (ISBN: 978-1-932149-87-6), or something similar is preferred as a field notebook.

Throughout this course we will be exposed to a variety of elements of working in the field of forestry.

From safety plans to implementation of restoration work and all the numbers in-between! I look forward to being outside with you all.

Learning Goals:

Figure 3: A group assess a willow restoration project in the Red Rock Wildlife Refuge

NMHU Learning Goals:

1. Mastery of content knowledge
2. Critical and reflective thinking skills
3. Ability to communicate effectively.
4. Ability to use technology.



Figure 4: Emily Swindell and Hannah Millsap review understory sampling methods in a mixed conifer site

Society of American Foresters Learning Goals:

1. Understand the interdisciplinarity of forestry.
2. Critically think about how to sustain ecosystems for multiple objectives.
3. Students will understand the values offered by participants, landowners, communities, society, and the ecosphere.
4. Students will demonstrate an understanding of both scientific and traditional ecological knowledge systems.
5. Students will demonstrate professional and ethical behaviors and be able to critically think regarding ethics from diverse viewpoints.
6. Students will understand the value of diverse people, perspectives, and practices.

Learning the knowledge and skills to work in the field of Forestry

Course Learning Objectives (CLOs):

This course focuses on teaching us knowledge and skills that will help make us strong and confident foresters, no matter which realm of forestry we choose to focus on. The key knowledge and skills we will focus on are outlined below.

Knowledge	Skills
1. Weather and Climate basics	2. Assessing hazards and generating field safety plans
3. Geography principals	
5. Plant traits, families, and communities	4. Map reading and orienteering
7. Natural history	6. Plant identification
9. Watershed health and function	8. Forest stand assessments
	10. Communication skills including data analysis

In addition to the above CLOs this course also aims to teach us practical life and professional skills that have application in the working world.

This class hopes to be structured as a co-working space that mimics some aspects of the jobs we may hold.



Figure 5: Sasha Reed with Audubon Canyon Ranch implements a prescribed fire in Piñon-Juniper woodlands to improve Gunnison Sage Grouse Habitat (Dolores West Rim Rx, BLM).

Learning the knowledge and skills to work in the field of Forestry

This final table reflects personal goals for this class. On the first day, please fill in the blank lines with your own goals.

Individual Learning Goals	
1.	Increase confidence as foresters
2.	Increase confidence in following protocols and collecting data
3.	Increase quantitative analysis skills
4.	Increase writing confidence
5.	Increase ability to work with others
6.	
7.	
8.	
9.	
10.	

Learning the knowledge and skills to work in the field of Forestry

Assessments and Grading:

Assignment categories: Rubrics for each assignment category are provided in this syllabus and will be referenced with each assignment. The following provides points and the percent of your total grade for each category of assignment.

<u>Category</u>	<u>Points</u>	<u>Percent</u>
Field work Assignments	160 points	25%
Written Assignments	100 points	15%
Participation	200 points	30%
Final Paper	200 points	30%
Total Points:	660 points	100%

Grades: We will use the standard grading scale outlined below based on the percentage of your total grade. Grades are a tool to help us learn, focusing on the rubric category instead of the letter grade can help direct us to grow and develop our knowledge and skills.

Grade	Percent Range	Rubric Category
A	>90%	Excelling (4)
B	80-89.0%	Sufficient (3)
C	70-79.9%	Developing (2)
D	60-69.9%	Needs Improvement (1)
F	<60%	Absent

Self-assessment: The self-assessment portion of this course is a grade you assign yourself based on an evaluation of your **where are you at, where are you now, and where did you finish** surveys. Your goal is to use evidence to assess your **growth** as a forester in this class. Please reflect on your individual learning goals in this exercise as well.

After Action Reviews: Inspired by common actions in wildland fire and forestry operations, each day will end with a group self-assessment. Each student will reflect on **“what worked well, what didn’t work, and what did we learn”** as we conclude each day. Being engaged and participating matters for this exercise, **remember participation can include intentional and active listening.**

Learning the knowledge and skills to work in the field of Forestry

Course Format: We will spend our days outside, working in groups with hands-on activities. Every day there will be a designated **navigator, note-taker and timekeeper** to help keep our class moving forward collaboratively. We will learn knowledge and skills to become foresters who can operate in the field.

Final Paper:

The Final Paper will be due on **December 1st, 2024**. This paper includes several key components. These will be submitted in a single document that contains the following elements. **1. A title page, 2. A field safety plan. 3. A complete data form. 4. A written paper that utilizes data from the field and 5. A final self-assessment.** The final paper aims to synthesize our knowledge and skills from all our activities throughout the semester. Details on each section are provided below.

Title page (5 points): Title pages are the first impression of your document to the reader. They should include a descriptive, brief title of the document as well as your name. I like to include a relevant photo to make title pages more alluring. There is creative freedom on the title page.

Field Safety Plan (30 points): For one of our field trips, write a detailed field safety plan and include all the appropriate elements of a field safety plan. Please do not copy and paste the plan we used in the field; instead, practice recreating the plan.

Data Form (15 points): Please include a complete data form from the day in your chosen field.

Paper (75 points): The paper should include the following elements. Please see my writing tips document for more information on each section: introduction (background information and purpose of the project), methods (what did you do?), results (what did you find?), discussion (what do your results mean?), and management implications. This paper has no length requirement; however, I suggest the guidelines below.

Life Hack: Did you notice the components of the final reflect assignments we previously did? This is true; they do.

We are iterating our writing skills. Do feel free to use previous assignments as part of the final by addressing comments on your previous submissions.

Learning the knowledge and skills to work in the field of Forestry

Section	Paragraphs	Citations	Figures/Tables
Introduction	Four	≤2	Not necessary
Methods	As much as needed	If needed	At least a map
Results	As much as needed	None	At least two
Discussion	Four	≤2	Not necessary
Management Implications	Two-three	≤1	Not necessary

Self-Assessment (75 points):

This portion of the document should be written in complete sentences and paragraphs. This section allows you to articulate your own moments of success, challenges, and growth.

This section can be focused on something other than the technical aspects of forestry. It can be a self-reflection of your knowledge, skills, confidence, and general feeling about forestry or navigating field circumstances and life as a forester.

As part of this self-assessment, please use the provided rubric to guide you and give yourself the grade you think you deserve in the class.

Please reference your **where are you at?, where are you now?, and where did you finish?** surveys as evidence to support claims you make about your own progress. In addition, reference moments or reflections from our time in the field, you may find your field notebook is helpful for specific details. Do not forget about your learning goals!

Alternative assignment: If you would rather not write the **self-assessment** portion of the assignment, you can instead do the self-assessment in a **1-1 meeting with Dr. Remke**. If you prefer this method, contact Dr. Remke and schedule a time to do your self-assessment.



Figure 6: For me, an ancient bristlecone pine prompts self-reflection. In admiration of such old trees I pause and reflect on my own growth and experience.

Learning the knowledge and skills to work in the field of Forestry

Tentative Schedule:

Page 1/3	Day	Date	Lesson	Module	Location	Assignments	Reading
Week 1	Monday	7/29	Knowledge: Weather and hazards Skills: Basic First Aid, Buddy system	Field safety and first aid	NMHU, Rio Gallinas	1. Syllabus activity 2. Where are you at?	Start reading for Wednesday
	Tuesday	7/30	Knowledge: Geography – theory and application Skills: Map reading and orientation	Orientation and compasses	Las Vegas NWR	3. Orientation assignment	Start reading tomorrows reading...
	Wednesday	7/31	Knowledge: Biological classification, traits Skills: Plant identification and measurement	Abiotic conditions and plant communities	Las Vegas NWR	4. Species list and plant community assignment	A General Framework for Community Ecology (Keddy & Laughlin).
	Thursday	8/1	Knowledge: Disturbance history and ecology Skills: Natural history observation; tree/plant ID. Birding	Natural History	Pecos	1. Reflection on place assignment	None
	Friday	8/2	Synthesis: Develop a site natural history for a location.	Natural History - Fire	Pecos	1. Where are you now? Week one Reflections 2. Written assignment: Site natural history: due 8/9	DuBuys - Brothers on the Fault Line

Learning the knowledge and skills to work in the field of Forestry

Page 2/3	Day	Date	Lesson	Module	Location	Assignments	Reading
Week 2	Monday	8/5	Knowledge: Forest conditions and goals Skills:	Watershed Work	Collins Lake Ranch	1. Turn in a complete data sheet	None
	Tuesday	8/6	Skills: Stand assessment techniques Practice: Implement a stand assessment in your groups	Watershed Work	Collins Lake Ranch	1. Written Assignment: Stand assessment and summary	Burch and Sánchez Meador, 2018
	Wednesday	8/7	Practice: Stand assessments	Stand Measurements	Collins Lake Ranch	1. Elements of water in forests assignment	
	Thursday	8/8	Practice: Making safe decisions	Volunteer with HPWA	Gallinas Canyon	1. Reflecting on doing the work	None
	Friday	8/9	Synthesis: Data analysis	Final	NMHU – LS160	1. Where are you finishing? 2. Final Reflections	None

Learning the knowledge and skills to work in the field of Forestry

Page 3/3	Day	Date	Lesson	Module	Location	Assignments	Reading
Semester Term	Week 3	8/12- 8/16	Skills: Time management, knowledge synthesis	Final	IHS 135	<ol style="list-style-type: none"> 1. Outline of paper due. 2. Come to student hours (or schedule a meeting) 	Read your writing, read a friend's writing
	Week 7	9/23- 9/27	Skills: Time management, knowledge synthesis	Final	IHS 135	<ol style="list-style-type: none"> 1. First draft of paper due. 2. Come to student hours (or schedule a meeting) 	Read your writing, read a friend's writing
	Week 15	11/18- 11/22	Skills: Time management, knowledge synthesis	Final	IHS 135	<ol style="list-style-type: none"> 1. Final paper due. 	Proofread and edit!

Learning the knowledge and skills to work in the field of Forestry

Course Policies:

<u>Policy</u>	<u>Description</u>	<u>Resources</u>
<p>Academic Integrity Policy:</p>	<p>New Mexico Highlands University students and faculty are expected to maintain integrity through honesty and responsibility in all their academic work.</p> <p>Academic dishonesty includes plagiarism, Cheating, Collusion, Facilitation, Fabrication, Multiple Submissions, and Falsification of Records.</p> <p>ChatGPT and other Artificial Intelligence (AI) tools help look up questions or ideas; however, copying and pasting AI-generated answers is still academically dishonest.</p>	<p>This course follows the Highlands Academic Integrity Policy as described in the catalog: Academic Integrity Policy</p>
<p>Cell Phone and Electronics Policy</p>	<p>Cell phones can both distract and enhance the learning environment.</p> <p>We will develop rules regarding cell phone use together as a class, please reference the Rules of Engagement for more details.</p>	<p>Smart Phones in Classrooms</p> <p>10 Ways A Smartphone can help you Learn</p>
<p>Preparedness and Etiquette Policy</p>	<p>We will be working in field settings, and the appropriate clothing for the day, including footwear, as well as having snacks and lunch to meet our personal needs, is part of our preparedness.</p> <p>Having the proper etiquette for the day means having a good attitude and being part of the team that is our class. Refer to our specific rules of engagement.</p> <p>Missing outdoor gear, like a jacket, that you feel like you may need for class? Consider renting from the Outdoor Recreation Center</p>	<p>Packing checklist</p> <p>Field Biology Checklist</p>

Learning the knowledge and skills to work in the field of Forestry

<u>Policy</u>	<u>Description</u>	<u>Resources</u>
<p>Late assignments</p>	<p>Assignments are due by 5:00 pm on their due date. Assignments can be turned in on paper or online. Please hand paper assignments to me or place them under my office door. In class assignments are due at the end of class. There is no penalty for turning in assignments late on the same day as the due date.</p> <p>For every one day late after this, there is a 10% penalty.</p> <p>Late fees can be waived given professional communication about the status of your progress towards the assignment.</p>	<p>How to communicate with your professor</p> <p>How to email your professor</p>
<p>Attendance</p>	<p>Class time will be a fun, interactive space where we learn together about forestry field safety in Northern New Mexico. I know we all also have lives outside of forestry and thus there are plenty of good reasons why we might miss class.</p> <p>If you miss class, 1) review the notes on the course site, 2) talk to a peer, 3) communicate with me to make up assignments and learning opportunities.</p>	<p>How to catch up</p> <p>What to do when you miss class</p>

In addition to the above policies, we will collaboratively develop the [Rules Of Engagement](#) as a class. This space is our community, so let us prioritize making our community a place that is inclusive and enjoyable for everyone.

Learning the knowledge and skills to work in the field of Forestry

Health and Mental Health Services:

<u>Service</u>	<u>Description</u>	<u>Benefits</u>	<u>Contact Information</u>
<u>Health Center Main Campus</u>	<p>The health Center offers basic student medical and wellness services included primary care, illness diagnosis and wound treatment.</p> <p>The health center also provides students with counseling services for mental health and wellness.</p>	<p>The campus health center offers an affordable and local option for students to seek health and wellness options including STD testing and family planning</p> <p>Proactive maintenance of our physical and mental health can keep us happy and focused on our lives</p>	<p>505-454-3218</p> <p>901 Baca Street Las Vegas, NM,87701</p>
<u>NM Crisis & Access Line</u>	<p>The NM Crisis and Access line is a 24/7 phone service for counseling and mental health emergency support line. They also offer warm peer calls and text messaging for non-crisis but need-to-talk-to-someone moments.</p>	<p>Any mental health challenge or emergency can be met with professional counseling and confidentiality by calling this number.</p>	<p>Crisis and Access Line <i>Call only:</i> 1-855-662-7474 Peer-to-Peer Warm Line <i>Call or text:</i> 1-855-466-7100</p>
<u>Food Resources</u>	<p>A general store and food pantry</p>	<p>Eating a healthy diet helps us focus and thrive</p>	<p>505-454-3529 SUB Room 110</p>
<u>Emergency Funding</u>	<p>The student extreme hardship fund can support students with challenging financial circumstances</p>	<p>This can help students pay for rent or groceries when facing hardship. There also the Dean Farmer Fund</p>	<p>505-454-3020 deanofstudents@nmhu.edu 505-454-3198 tlaw@nmhu.edu</p>
<u>Outdoor Recreation Center</u>	<p>The outdoor recreation center offers gear, including jackets, for outdoor recreation.</p>	<p>Students can rent camping gear, jackets, rafting gear, bikes, and many other items to enjoy outside. <i>Hint: could be useful for class ;)</i></p>	<p>Adrian Gallegos 505-454-3495 or 505-454-3050</p>

Learning the knowledge and skills to work in the field of Forestry

Academic and Professional Development Services:

<u>Service</u>	<u>Description</u>	<u>Benefits</u>	<u>Contact Information</u>
<u>Achievement in Research, Math and Science (ARMAS)</u>	The ARMAS center is a place for studying and peer support in the sciences.	Having a study community and place to work on campus can enhance productivity and sense of belonging in the academic community	505-426-2010 armassocialmedia@nmhu.edu
<u>NMHU Dean of students</u>	The dean of students is a resource for all student affair related questions and concerns.	The Dean is an administrative role at the University and the Dean of Student Administrations brings student functions to University Administrations.	Kimberly Blea 505-454-3020 kjvaldez@nmhu.edu
<u>Human Resources</u>	Human Resources is the office that ensures fair hiring and payroll.	The human resources office can help with any and all issues related to payroll and hiring.	505-454-3308 hr@nmhu.edu Mass Communications Building, East, Room 138
<u>Center for Professional Development and Career Readiness</u>	Professional development can connect you with on and off campus jobs	This center offers interview practice, resume building and more services	505-454-3048 careerservices@nmhu.edu Felix Martinez Building, Room230
<u>NMHU Library</u>	Academic databases, books, digital media and more	The library can help you with research support and finding academic resources. The library also loans computers to students!	Computer loan program 505-454-3401 libinfo_nmhu.edu
<u>Professional Job Boards</u>	Job boards are where professionals list employment opportunities	Connects you to opportunities nationwide and internationally where you can build experience and your professional network.	Forestry Jobs Natural Resource Jobs Research Experience

Learning the knowledge and skills to work in the field of Forestry

Harassment and Crisis Services:

<u>Service</u>	<u>Description</u>	<u>Benefits</u>	<u>Contact Information</u>
<u>HU-CARES Information</u>	<p>Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc.</p> <p>If you or someone you know has been harassed or assaulted, you are encouraged to contact the Center for Advocacy, Resources, Education, & Support (HU-CARES)</p>	<p>HU-CARES is a confidential and professional service with individuals who are trained in helping students with these unfortunate circumstances.</p> <p>HU-CARES will facilitate making a student's campus and off-campus experience safe and can help connect students with housing opportunities if they are displaced because of violence or harassment.</p> <p>See the website for scheduling an appointment. HU-CARES also offers counseling and confidential crisis support services.</p>	<p>Leon Bustos 505-454-3445</p> <p>leonbustos@nmhu.edu</p> <p>24/7 Crisis Call/Text: 505-795-3665</p>
<u>Title IX Officer</u>	<p>Title IX is a law that prevents discrimination based on sex.</p>	<p>Title IX has online reporting forms (see website) and offers professional and confidential ways to report incidents.</p>	<p>Ruth Mariampolski 505-454-3363</p> <p>ruthm@nmhu.edu or TIX@nmhu.edu</p>
<u>Campus Police</u>	<p>Campus police can be called for any non-emergency situation. Locked out of a room? Locked out of your dorm? Call campus police.</p>	<p>Campus police are friendly and helpful members of our community. They help us all when we need help and help make our campus a safe and vibrant place.</p>	<p>Immediate emergency: 911 On-campus emergency: (campus phones) 5555, cell phones 505-454-3278 Non-emergency: 505-454-3278</p>

Support and Services:

Learning the knowledge and skills to work in the field of Forestry

<u>Service</u>	<u>Description</u>	<u>Benefits</u>	<u>Contact Information</u>
<p>Personal Needs</p>	<p>Field-based coursework and college in general can be challenging and bring us out of our comfort zones.</p> <p>Finding peers in the classroom our outside of class to talk through our challenges can help us grow as foresters.</p>	<p>Communicating with friends and peers in the class builds community and connections.</p> <p>Other people probably feel similar challenges and validate our experience and can help offer solutions we had not considered.</p>	<p>Call your friends, talk with someone in class, or contact Dr. Remke</p> <p>mremke@nmhu.edu</p>
<p><u>Accessibility Services Inormation</u></p>	<p>In accordance with federal law, it is university policy to comply with the Americans with Disabilities Act (ADA). If you believe you have a physical, learning, or psychological circumstance that creates extra challenges in your learning, we have services to help overcome those challenges.</p> <p>These can include physical injuries, dyslexia, mental health circumstances and many others.</p>	<p>Seeking services from the school can help by increasing the time allotted for you to take examinations, giving you quiet study rooms to take exams, offering alternative assignment and exam formats and/or finding additional mentors to help you learn how to live with exactly who you are.</p> <p>These services are confidential and respect student privacy.</p>	<p>Natalie 505-454-3250 natalie@nmhu.edu Lora Shields Building, 2ndfloor, room 250.</p>

Learning the knowledge and skills to work in the field of Forestry

Course Topics:

1. Course Overview

- a. Ecosystems and ecological communities
- b. Geography and Geomorphology
- c. Disturbance and natural history

2. Safety

- a. Awareness – weather, surroundings, location and hazards
- b. Preparedness – water, food, appropriate clothing, survival tools, maps
- c. Training – first aid, environmental health concerns, animals and hazards
- d. Personal limits – buddy system and communication

3. Maps and Navigation

- a. Coordinate systems and Earth
- b. Map types and information on maps
- c. Compass and GPS navigation

4. Field Measurement and Survey Techniques

- a. Sampling at the plot level
- b. Use of field forestry equipment

5. Organisms and taxonomy

- a. Understanding basic classification of organisms
- b. Plant and forest organism collection and identification

6. Forest types of New Mexico

- a. Understanding forest type classification in forestry
- b. Recognize subalpine, montane, mixed conifer and aspen forests.
- c. Understand forest relationships to disturbances.

7. Field Observations

- a. Be able to observe a variety of phenomena outside.
- b. Natural history observations and skills

Learning the knowledge and skills to work in the field of Forestry

Rules of Engagement:

These are rules that we develop on the first day of class, as a group. The point is to make sure we have a respectful classroom setting that everyone can agree with and feels comfortable with. If someone is violating these rules, we can politely point out the situation and remedy the problem as a group or individuals within the group. The point is to make sure we are all empowered and supported rather than me, the professor, holding disproportionate rule making and enforcing authority.

Example Rules:

1. Be present.
2. Assume positive intent.
3. Critique ideas, not people
4. Acknowledge others for the work they do and how they contribute.
5. If you identify a problem, present a solution as well.
6. Make mistakes.

Learning the knowledge and skills to work in the field of Forestry

Rubrics:

Field Work Assignments:

Field Work Assessment Rubric		Needs Improvement (1)	Developing (2)	Sufficient (3)	Excelling (4)
Knowledge	Forestry Equipment	No understanding of equipment	Understands some of the equipment discussed	Understands most of the equipment discussed	Understands all equipment discussed
	Safety	No knowledge on safety concerns	Aware of only some of the safety concerns	Mostly aware of safety concerns	Complete knowledge on safety concerns
	Monitoring	No understanding of the use of monitoring	Sometimes connects monitoring to topics	Mostly able to connect monitoring to topics	Connects logic of monitoring to other tasks
	Plant Identification	No knowledge about plant families	Aware of some plant family traits	Aware of most plant family traits	Knows all plant families
	Communication	Information not logically interpreted	Able to make some logical interpretations	Able to use logic in most interpretations	Interprets information logically
Skills	Forestry Equipment	Equipment used improperly or not at all	Sometimes used equipment properly	Mostly used equipment properly	Uses equipment in proper way
	Safety	Safety measures not implemented	Excluded some safety measures	Mostly implemented safety measures	Implements safety measures fully
	Monitoring	Incomplete or inaccurate implementation of methods	Sometimes followed monitoring protocols and methods	Mostly followed monitoring protocols and methods	Implements monitoring methods efficiently
	Plant Identification	No plants accurately identified	Sometimes accurately	Mostly accurately	Accurately identified all plants
	Quantitative	Data not summarized or presented accurately	Data partially summarized with missing elements	Data summarized but visualization has subtle errors	Data summarized and presented data accurately
	Oral and written	Communicates incoherent thoughts	Many grammatical errors	Some grammatical errors	Communicates complete thoughts
Go Team	Teamwork	Poor team effort, individual dominated	Divide and conqueror style effort	Role designation was present but poor communication	Excellent role designation and communication

Learning the knowledge and skills to work in the field of Forestry

Written Assignments:

Written Assessment Rubric		Needs Improvement (1)	Developing (2)	Sufficient (3)	Excelling (4)
Writing Component	Clarity	The purpose of the student work is not well-defined. Central ideas are not focused to support the thesis. Thoughts appear disconnected.	The central purpose of the student work is identified. Ideas are generally focused in a way that supports the thesis.	The central purpose of is clear and ideas are almost always focused in a way that supports the thesis. Relevant details illustrate the author's ideas.	The central idea is clear and well supported, supporting ideas are focused and details are relevant.
	Organization	Information and ideas are poorly sequenced (the author jumps around). The audience has difficulty following the thread of thought.	Information and ideas are presented in an order that the audience can follow with minimum difficulty.	Information and ideas are presented in a logical sequence which is followed by the reader with little or no difficulty.	Information and ideas are presented in a logical sequence which flows naturally and is engaging to the audience.
	Mechanics	There are five or more misspellings and/or systematic grammatical errors per page or eight or more in the entire document. The readability of the work is seriously hampered by errors.	There are no more than four misspellings and/or systematic grammatical errors per page or six or more in the entire document. Errors distract from the work.	There are no more than three misspellings and/or grammatical errors per page and no more than five in the entire document. The readability of the work is minimally interrupted by errors.	There are no more than two misspelled words or grammatical errors in the document.
	Creativity	The student work is difficult to distinguish as its own.	Some elements of the work are unique	Most of the work is unique	The student work is unique and stands out as a novel perspective or writing

Learning the knowledge and skills to work in the field of Forestry

Participation Assessment:

Participation Assessment Rubric		Needs Improvement (1)	Developing (2)	Sufficient (3)	Excelling (4)
Behavioral Trait	Engagement	Student does not participate and lacks interest or curiosity in material covered	Student sometimes participates and seems curious for only some material covered	Student participates most days and is interested in some, but not all of the material covered	Student participates daily and encourages participation of peers. Student is curious in material covered
	Focus	Student is distracted and often dedicating energy to items besides the tasks on hand	Student is often distracted with other items during activities, presentations, and instructions	Student is sometimes distracted with other items during activities, presentations and instructions	Student works on task and is attentive during presentations, instructions, and activities
	Attitude	Student is negative and complains about circumstances without being proactive in resolving circumstances	Student is seldom positive and if negative about circumstances at least attempts to resolve the issue	Student is mostly positive but is mostly focused on self and not others	Student is positive daily regardless of circumstances and helps classmates
	Preparedness	Student came dressed inappropriately for weather or activity	Student forgot something at home but had the foresight of preparedness	The student had most needed items but would benefit from more organization	Student had all needed items and was well organized.
	After Action Review	Student is constantly distracted during class	Student is sometimes distracted.	Student often participates during after action reviews	Student is attentive and engaged during

Learning the knowledge and skills to work in the field of Forestry

Self-Assessment:

Self-Assessment Rubric		Needs Improvement (1)	Developing (2)	Sufficient (3)	Excelling (4)
Self-assessment Component	Knowledge	I feel I did not learn new knowledge	I learned little new knowledge in this class.	I learned many new knowledge, but some knowledge was not new.	I feel like I learned lots of new knowledge.
	Skills	I feel like I did not gain new skills	I learned few new skills in this class.	I learned many new skills, but some skills were not	I feel like I learned lots of new skills
	Comfort	I feel like I am uncomfortable in topics discussed in class	I did not increase my comfort much from the beginning of class	I am generally more comfortable, but some things still challenge me	I feel my comfort with material in course has increased.
	Confidence	I feel like I am not confident in class	I did not increase in confidence in forestry in this class at all.	I feel fairly confident but still find material I am not so confident in	I feel more confident as a forester than I did at the beginning of class
	Participation	I feel like I rarely participate throughout this class in the class	I only sometimes participated throughout the class	I find myself participating most of the time.	I feel like by the end of the class I was participating more.
	Excitement	I feel unexcited about the topics in the class.	I feel only sometimes excited about things in this class.	I am generally excited about material, but some topics still are not interesting to me.	I feel very excited about learning more about forestry.