# FOR 322: Forest Mensuration Spring 2020 (3 credits, two 1-hour lectures, one 3-hour lab)

INSTRUCTOR: OFFICE: PHONE: EMAIL:	Dr. Paul Dorus TNR 239 715-346-3988 pdoruska@uws	ka sp.edu (or through	Canvas	5)	
Class Time:	Lecture: Lab:	Monday & Wedn Friday		3:00pm – 3:50pm 11:00am – 1:50pm	TNR 361 TNR 359
Final Exam:	Monday May 1	1, 2020 2:45-4:4	ōpm	TNR 361	
Office Hours:	Tuesdays 2:00	-2:50pm; Wedneso	days 11	:00-11:50am	
	door is ajar. La	rger, more time-co	nsumin	questions anytime I an g questions require me be posed via Canvas a	eeting during office
Prerequisites:	FOR 232 Dend FOR 321 Fores	Iro. and Silv.;	TH 355	it. Sciences or MATH 1 Elem. Stat. Methods; pr	111 Appl. Calculus;
Text:	Forest Measure	e <i>ment</i> s (2019 6 <sup>th</sup> E	dition)	by Avery, Burkhart and (ISBN 1-4786-	
Learning Outcomes:		an forest-based for		ciples of describing an ources. Upon completi	
				ively summarize rural a confidence intervals.	and urban forests/data
				l/or map scales and/or is and determine the a	
	found in r			diameter, height, leng nts with forestry equi	
	· · /			evel attributes (basal a) and perform relate	•
	sampling) a	and inventory proc	edures	nple random sampling (fixed radius plot and entories for both tim	point sampling) when
	techniques to p forests or they by gaining conf providing interp	provide the informa interact with other fidence in these sk	tion nee natura ills, stud tanding	and the information eded for wise stewards I resource professiona dents will be establishin the information neede based decisions.	hip of rural and urban Is who do. Therefore, ng the groundwork for

# Grading:

There will be two written exams (each worth 40 POINTS) and a 75 POINT, comprehensive written final exam over the course of the semester. Exam material will include material discussed in lectures, labs and any assigned readings.

There will be five lecture-based quizzes/homework assignments valued at 15 POINTS each. There will be four laboratory-based assignments valued at 15 POINTS each and one lab report values at 30 points.

# COURSE TOTAL POINTS: 320 points.

Normally, cumulative-weighted percentages will be rounded to the nearest tenth and course grades will be assigned as follows (instructor reserves the right to curve):

91.6% or higher	А	77.6% to 79.5%	C+
89.6% to 91.5%	A-	71.6% to 77.5%	С
87.6% to 89.5%	B+	69.6% to 71.5%	C-
81.6% to 87.5%	В	67.6% to 69.5%	D+
79.6% to 81.5%	B-	61.6% to 67.5%	D
		59.6% to 61.5%	D-
		Less than 59.6%	F

# Instructor's tips:

- (1.) Come to class willing to learn and have fun, I certainly plan to do so.
- (2.) Keep up with the readings and the homework/lab assignments.

# Instructor's rules:

- (1.) Discussion of homework assignments, and laboratory reports & assignments, between students is encouraged, however all work (unless part of any group projects) <u>must be done</u> independently.
- (2.) Cheating and/or plagiarism will not be tolerated (see also the Professionalism Statement)
- (3.) Posting instructor-created course material onto course-sharing websites directly violates the instructor's copyright on his academic materials; permission to post instructor-created material on any such site is unequivocally denied.
- (4.) Smoking or other tobacco use is not permitted during class or labs, including those when we are outdoors.
- (5.) If you plan to miss an exam, you have to let me know ahead of time and explain why you will be unable to take the exam at the scheduled time. Unexcused absences from exams result in zeroes.
- (5.) Homework and lab assignments are due at the start of class on the respective due dates. Late assignments will receive a score of zero. Lab reports are due at the start of lab on the respective due dates. Late lab reports will be accepted up to one week past the due date, but will be penalized 10% of the points available for every day late.
- (6.) All written work is expected to be grammatically correct, neat, and well organized. Work that is sloppy, hard to read, does not follow prescribed format, and/or contains many spelling and/or grammatical errors will be graded with a 0.

# Students with Disabilities:

The university has a legal responsibility to provide accommodations and program access as mandated by Section 504 and the Americans with Disabilities Act (ADA). The university's philosophy is to not only provide what is mandated, but also convey its genuine concern for one's total well-being. If accommodations are needed, please contact the instructor as well as the Disability Services and Adaptive Technologies Center, 609 Library Resources Center, voice (715) 346-3365 or TDD (715) 346-3362

# Attendance Policy

Laboratory work is very important (your crew-mates depend on you and you on them) and every effort should be made to attend labs. Absences from laboratories due to illness, family emergency, or University sponsored activities may be excused provided a written explanation is given to and acknowledged by your instructor prior to the intended absence except for emergencies in which case an explanation should be submitted as soon as practical. If unexcused absences occur on days when laboratory reports/assignments are due, then it is your responsibility to see that laboratory reports/assignments are turned in prior to class on the assigned due date in order to receive credit. If this class has more than one lab/discussion section, switching laboratory sections to make up unexcused missed work will not be allowed.

Missing lecture class HABITUALLY almost always results in lower grades! You are strongly encouraged to attend all scheduled lectures and laboratories.

# University of Wisconsin Stevens Point College of Natural Resources-Principles of Professionalism

The College of Natural Resources at the University of Wisconsin – Stevens Point prepares students for success as professionals in many fields. As a professional, there are expectations of attainment of several personal characteristics. These include:

#### Integrity

Integrity refers to adherence to consistent moral and ethical principles. A person with integrity is honest and treats others fairly.

## Collegiality

Collegiality is a cooperative relationship. By being collegial you are respecting our shared commitment to student education through cooperative interaction. This applies to all involved in the process: students, staff, faculty, administration and involved community members. You take collective responsibility for the work performed together, helping the group attain its goals.

#### **Civility**

Civility refers to politeness and courtesy in your interactions with others. Being civil requires that you consider the thoughts and conclusions of others and engage in thoughtful, constructive discussion to express your own thoughts and opinions.

#### Inclusivity

Inclusivity requires you to be aware that perspective and culture will control how communication is understood by others. While many values are shared, some are quite different. These differences in values should be both considered and respected.

#### **Timeliness**

Timeliness is the habit of performance of tasks and activities, planned in a way that allows you to meet deadlines. This increases workplace efficiency and demonstrates respect for others' time.

#### **Respect for Property**

Respect for property is the appreciation of the economic or personal value an item maintains. Maintaining this respect can both reduce costs (increase the operable life of supplies and equipment) as well as demonstrate respect for others rights.

#### Communication

Professional norms in communication require that you demonstrate the value of your colleagues, students, professors or others. The use of appropriate tone and vocabulary is expected across all forms of communication, whether that communication takes place face to face, in writing or electronically.

#### **Commitment to Quality**

Quality is the ability to meet or exceed expectations. By having a commitment to quality, we intend to provide a learning environment that is conducive to learning. Intrinsic to this commitment to quality is defining expectation (committed to in a syllabus through learning outcomes), implementation (with quality control in place) and assessment (where meeting of learning outcomes is determined).

#### **Commitment to Learning**

Learning is a lifelong process. By being committed to learning you are providing a model for all to follow. This model is not only professor to student but involves all combinations of people within our university and broader community

Adherence to this compact is required of the faculty and staff of the College of Natural Resources and of all students enrolled in College of Natural Resources courses.

Academic misconduct will not be tolerated.

Note the following as per the Univ. of Wisc.-Stevens Point Community Bill of Rights and Responsibilities:

# UWSP 14.03 ACADEMIC MISCONDUCT SUBJECT TO DISCIPLINARY ACTION.

(1.) Academic misconduct is an act in which a student:

(a) Seeks to claim credit for the work or efforts of another without authorization or citation;

(b) Uses unauthorized materials or fabricated data in any academic exercise;

(c) Forges or falsifies academic documents or records;

(d) Intentionally impedes or damages the academic work of others;

(e) Engages in conduct aimed at making false representation of a student's academic performance;

or

(f) Assists other students in any of these acts.

(g) Violates electronic communication policies or standards as agreed upon when logging on initially (See uwsp.edu/it/policy).

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

# UWSP 14.04 DISCIPLINARY SANCTIONS.

(1) The following are the disciplinary sanctions that may be imposed for academic misconduct in accordance with the procedures of s. UWSP 14.05, 14.06 or 14.07:

(a) An oral reprimand;

(b) A written reprimand presented only to the student;

(c) An assignment to repeat the work, to be graded on its merits;

(d) A lower or failing grade on the particular assignment or test;

(e) A lower grade in the course;

(f) A failing grade in the course;

(g) Removal of the student from the course in progress;

(h) A written reprimand to be included in the student's disciplinary file;

(i) Disciplinary probation; or

(j) Suspension or expulsion from the university.

(2) One or more of the disciplinary sanctions listed in sub. (1) may be imposed for an incident of academic misconduct.

# Required Statement on Emergency Preparedness:

In the event of a medical emergency, call 911 or use red emergency phone located outside Rm151 or 172 on the first floor; 2<sup>nd</sup> floor between Rms 252 and 255 or between Rms 219 and 221 (on other side of hall); 3rd floor by Rms 320 or 358. Offer assistance if trained and willing to do so. Guide emergency responders to victim.

In the event of a tornado warning and on the 3<sup>rd</sup> floor proceed to the southern hallways on the 1<sup>st</sup> or 2<sup>nd</sup> floors, away from the windows. Those are appropriate shelters.

In the event of a fire alarm, evacuate the building in a calm manner. Meet at the northwest corner of parking lot E. Notify instructor or emergency command personnel of any missing individuals.

Active Shooter – Run/Escape, Hide, Fight. If trapped hide, lock doors, turn off lights, spread out and remain quiet. Follow instructions of emergency responders.

See UW-Stevens Point Emergency Management Plan at <u>www.uwsp.edu/rmgt</u> for details on all emergency response at UW-Stevens Point.

Lecture Outline

Week of	Topic(s)	Readings	Assignment
1/20	Introduction/Units of Measure	Chapters 1, 3	
1/27	Measuring Standing Trees	Chapters 4, 6	
2/3	Measuring Standing Trees/Volume Terminology	Chapters 5, 6	Quiz/Problems
2/10	Log Rules/Scaling Practices	Chapter 5	
2/17	Weight Scaling/Standing Volume and Weight Estimation	Chapter 7	Quiz/Problems
2/24	Sample Size Determination/Intro to Forest Inventory	Chapters 2, 8	
3/2	Intro. to Forest Inventory/Test 1	Chapter 9, 10	
3/9	Urban Forest Meas. and Inventory		Quiz/Problems
3/16	Spring Break		
3/23	Fixed Radius Plot Sampling	Chapter 11	
3/30	Variable Radius Plot (VRP) Sampling	Chapter 12	Quiz/Problems
4/6	Proportions/Stand and Stock Tables/Stratified Sampling/Site Index	Chapter 14	
4/13	Site Index/TBA/Test 2	Chapter 14	
4/20	Growth and Yield/Other Measures	Chapters 15, 16	
4/27	Other Measures	Chapter 17	Quiz/Problems
5/4	Other Measures/Assessment/Course Wrap-up	Chapter 17	

# Laboratory Outline

Week of	Topic(s)	Task/Assignment <sup>1</sup>
1/24	Assessment/Excel	
1/31	Measuring Diameters and Heights* (hh)	
2/7	Statistical Review	
2/14	Volume/Weight Estimation I* (hh)	
2/21	Volume/Weight Estimation II*(hh)	Worksheet
2/28	GPS/GIS*	
3/6	GPS/GIS* (hh)	
3/13	TBD	
3/20	Spring Break	
3/27	Fixed Radius Plot (FRP) Sampling* (hh)	Worksheet
4/3	Variable Radius Plot (VRP) Sampling* (hh)	Lab Report
4/10	Stratified Sampling* (hh)	
4/17	More FRP/VRP Practice* (hh) or TBD	Worksheet
4/24	Growth Measures* (hh)	Worksheet
5/1	Growth and Yield Modeling	
5/8	Left open for spillover topics or inclement weather	
	makeups	

Note: Labs marked with asterisks indicate some, or all, of that lab will be outdoors. For such labs, you are expected to dress appropriately for the weather/conditions so that you will be comfortable while working in the field. Be prepared for mosquito activity in late Spring. Watch the weather forecast and be prepared for cold, rain, and snow. A warm hat, gloves, and layered clothing are important for cold weather. Rain gear is important for rainy weather. You are *strongly encouraged* to wear field shoes/boots of some kind for all outdoor labs. As forestry professionals, safety should always be on our minds. Therefore, hardhats (hh) should be worn for the labs as noted...

<sup>1</sup>Any task/assignment is listed in the week it will be assigned. Due dates will be provided at the time the task/assignment is handed out or announced.

Forestry Basic Skills Exam Topical Areas

FOR 322 is one of the classes that compose the knowledge base tested as part of the Forestry Basic Skills exam (the junior-level exam and the FOR 449 course). Therefore, many students enrolled in this class take these exams. Basic skills from FOR 322 covered on these exams focus on one's ability to correctly:

- (1.) apply both fixed radius plot sampling and variable radius plot sampling (point sampling) concepts, respectively, and analyze inventory data therein,
- (2.) identify/use/define terminology commonly used in forest measurements,
- (3.) identify/describe/employ measures of site index.
- (4.) apply 1-inch and 2-inch DBH classes and 10-foot height classes,
- (5.) describe proper use of common forestry equipment (diameter tape, prism, hypsometers, Biltmore stick)(6.) determine cubic foot volume of logs,
- (6.) determine cubic foot volume of logs,
- (7.) describe, use and convert measures of volume, weight, length, and area,
- (8.) describe or compare stem form/taper via Girard form class, and
- (9.) identify merchantability standards for hardwood and softwood sawtimber and pulpwood.

Additionally skills utilized in FOR 322 and also covered in the Basic Skills exam include correctly: using map scales to determine distances or areas, identifying features as found on air photos and/or topographic maps, converting between azimuths and bearings, and determining foresights from backsights (or vice versa).