Topics Outline –:– Esrm 368 –:– Natural Resource Measurements
(a.k.a. FOREST RESOURCES ASSESSMENT: Products, Trees, Stands & Habitats)
WINTER 2016

[Approx.] Date / Topic # / Description	Readings / Assignments / Due dates
Week 1	
[4 Jan] 1. Introduction	T 1, 2*
1.1 Principles of measurement	**Problem Set** (PS) #1:–
1.2 Presenting Information	Math & Stat in For. Sci.,
1.3 Course Logistics	**DUE: Mo 11 Jan**
Indoor Lab: [Optional] Work on PS #1	
[6 Jan] 2. Review [brief!] of Statistics Knowledge	T 3; B&D* II§viii; F* §1,2
2.1 Variables, populations, parameters, statistics	
2.2 Frequency Dist'ns, Location, Dispersion, Error	
2.3 Additional Sampling Concepts	
2.4 Expanding means, standard errors	
2.5 Measures of Association	
[8 Jan] 3. Land Measurements	T 4
3.1 US Public Land Survey	
3.2 Distances	
3.3 Directions	
Week 2	
[11 Jan] 3.4 Areas	
Field Exercise (FX) # 1:– Basic Traverse	**DUE: We 20 Jan**
[13 Jan] 4. Assessing Tree Attributes	
4.1 Tree DBH, Age, Height, Form, Crown	T 5
[15 Jan] 4.2 Tree Contents; Volume Tables / Equations	T 6
Week 3	
18 Jan **No Class, No Lab –** UW Holiday – M.L.K., Jr. Day	
[20 Jan] 4.3 Volume distribution / Taper equations, Defects	
[22 Jan] 5. Assessing Primary Forest Products	T 9
5.1 Cubic foot contents	**PS #2**:– Log Scaling,
	DUE: Fr 29 Jan
Week 4	
[25 Jan] 5.2 Board foot contents	
5.3 Log Defects & grading	
FX # 2:– Detailed tree measurements	**DUE**: **We 3 Feb**
[27 Jan] 6. Assessing Stand Attributes	
6.1 Stand Age, Spp. comp., DBH, Height, SI	T 8
[29 Jan] 6.2 The fixed-area plot	T 11, 14-1
Week 5	
[1 Feb] 6.3 The variable-area plot (pps sampling)	
FX # 3:– Fixed- & Variable-area plots	**DUE**: **We 10 Feb**

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* Readings Key: T denotes Text, B&D: Bell & Dilworth, F: Freese Handbook 232; Numbers denote chapters and Sections (§)

4 Jan 2016   E. Turnblom

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Week 5 (cont'd)

[3 Feb]   6.4 Stand Density & Stocking

[5 Feb] 7. Stand Sampling Methods   T 13§1-3, 7; F §3
       7.1 Simple random / Systematic sampling

Week 6

[8 Feb]   7.2 Ratio estimation

    Indoor Lab: [Optional] Analyses for FX #3

[10 Feb]   7.3 Double sampling   **PS #3**:– Stand Sampling,
                                                      DUE: We 17 Feb

[12 Feb] 8. Forest Assessment Methods   T 12, 13§5-6
       8.1 Multi-resource Inventory

Week 7

15 Feb   **No Class, No Lab** – UW Holiday – Presidents' Day

[17 Feb]   8.2 Stratified Random Sampling (STRS)

[19 Feb]   8.2a STRS sample size, Lee Forest overview

Sat 20 Feb 2016 FX # 4:- Forest Inventory   **8:00 A.M.**
                                                                             DUE: Fr 4 Mar

Week 8

[22 Feb]   8.3 Two-stage sampling

    Indoor Lab: [Optional] Analyses for FX #4

[24 Feb] 9. Trees are more than Timber !   T 7, 10
       9.1 Tree weight relationships

[26 Feb]   9.2 Forest Biomass / Carbon Storage

Week 9

[29 Feb]   9.3 Habitat Quality (LIS, PRS, Coverboard, Depth gauge)

    FX # 5:– Other Forest Resources   **DUE: We 9 Mar**

[2 Mar] 10. Growth of Trees   T 15
       10.1   Tree Growth Concepts
       10.2   Dimensional Increment
       10.3   Percentage growth
[4 Mar]   10.4   Stem Analysis   **PS # 4**:– Tree / Stand G & Y,
                                                        DUE: Fr 11 Mar

Week 10

[7 Mar] 11. Assessing Stand Growth & Yield (G & Y)
       11.1 Repeated Sampling   T 13§9
       11.2 Growth components   T 16
       11.3 Direct Methods of forecasting growth: TSP & STP

    Indoor Lab: [Optional] Analyses for FX #5 / PS #4

[9 Mar]   11.4 Indirect Methods: Yield Tables & Functions
       11.5 Assessing the Assessments

[11 Mar]   Wrap up / Catch up

Tu 15 Mar 2016 Final Exam (Cumulative)   **8:30-10:20 AM**