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FOR 495.01: Lumber Production and Quality Control

Edwin J. Burke

University of Montana, Missoula, Edwin.burke@umontana.edu

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FOR 495
Lumber Production and Quality Control
Autumn Semester
3 Credits

Instructor: Edwin J. Burke -- Journalism 105 -- 243-5157 eburke@forestry.umt.edu

Schedule: Lecture and Laboratory times to be announced. 2-3 hrs. lecture each week; 3-5 hrs laboratory each week, preferably on same day as lecture

Required Texts: *Quality Control in Lumber Manufacturing* by Brown.

Week#

TOPIC

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- 1 Introduction; Lumber manufacturing terminology. Laboratory: continue lecture on lumber manufacture history and terminology.
 - 2 Softwood and hardwood lumber production. Laboratory: Log scaling and breakdown. Exercise held at School's sawmill at Lubrecht Experimental Forest.
 - 3 Softwood lumber types and grades. Lumber grading methods. Laboratory: Log breakdown for volume and grade maximization. Exercise held at School's sawmill at Lubrecht Experimental Forest.
 - 4 Examination #1 covering weeks 1-3. Introduction to lumber quality control methods. Laboratory: Practical exercise in quality control procedures. Exercise held at School's sawmill at Lubrecht Experimental Forest.
 - 5 Quality control procedures in lumber manufacture. Laboratory: Tour of Stimson Forest Products' sawmill in Bonner.
 - 6 Quality control procedures and reports (cont.). Laboratory: Practical exercise in quality control procedures. Exercise held at Stimson Forest Products' sawmill in Bonner.
 - 7 Wood/water relations and drying. Laboratory: Exercise in moisture content determination by gravimetric, resistance and RF power loss methods at UM Wood Science Laboratory.
 - 8 Lumber drying methods and current technology. Laboratory: Tour of dehumidification kiln in Darby, MT.
 - 9 Quality control procedures in lumber drying. Laboratory: Production of lumber for air drying exercise. Session to be held at School's sawmill at Lubrecht Experimental Forest.
 - 10 Planing and remanufacture of lumber. Laboratory: Planing, finishing and machining exercise at Burke's home laboratory.
 - 11 Mechanical properties and structural design considerations in quality control. Laboratory: Mechanical testing of air-dried lumber from week 9 at UM Wood Science Laboratory.
 - 12 Effects of lumber grade and quality in the design of wood structures. Laboratory: Mechanical

testing of wood joints and metal connectors at UM Wood Science Laboratory.

13 Thanksgiving Holiday

14 Lecture and Laboratory: Special project in lumber manufacturing quality control to be conducted at a western Montana lumber manufacturing facility.

15 Lecture and Laboratory: Practical exercise in lumber manufacturing quality control (cont.).

16 Finals week. Final examination. Presentation of project results to the lumber manufacturing facility's management.