

ARCH 614. Study Guide for Quiz 5

This guide is not providing “answers” for the conceptual questions. It is a list of topical concepts and their application you should be familiar with. It is an *aid* to help prepare for the quiz.

Covers material of Lectures 13, 14 & 15

- Lumber vs. engineered timber characteristics
- Various strengths (directionality, wood type, etc.)
- Creep
- Design methodologies and obtaining allowed stresses (duration, multiple member use....)
- Column stability factor, F_{CE} & l/d
- Nominal dimensions of timber
- Maximum bending stress (& location along length and in cross section)
- Maximum shear stress (& location along length and in cross section)
- Maximum shear stress by beam shape (proper equations)
- Stress types in beams
- Self-weight
- Deflections & superpositioning (+ *units*)
- Use of Beam Diagrams and Formulas
- Lateral buckling (and bracing)
- Equivalent distributed load based on a maximum moment
- Use of Load Tables
- Design vs. analysis
- Effective length, K & bracing
- Built-up and spaced columns
- Beam-Columns
- Combined bending and compression – *interaction*
- $P-\Delta$ effect
- Eccentricity
- Connection stresses
- Design vs. analysis
- Bolt designations
- Effective net area
- Connection types
- Nail load capacity charts
- Bolt capacity charts and relation to wood strengths
- Single vs. double shear