

ARCH 614. Study Guide for Quiz 9

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 18, 19 & 20

- Design methodologies
- Steel grades (standard properties)
- Yield strength vs. ultimate strength
- Design vs. analysis
- Allowable Stress Design
- Load and Resistance Factor Design
- Unified Design Method
- Factored loads
- Resistance Factors
- “Design” values vs. “Capacity”
- Factor of Safety
- Load types (and directions) (*like D, L, S ...*)
- Load combinations
- Slenderness criteria & l/r
- k/r limit for steel
- with respect to least radius of gyration*
- Compact section criteria
- Use of column load capacity charts
- Bolt designations
- Gross area
- Effective net area
- Area of web
- Connection types
- Weld strengths
- Throat thickness
- Fillet, butt, plug, slot
- Coping
- Tension member
- Simple shear connector
- Single vs. double shear
- Capacity of a connection
- Block Shear Rupture
- Effective length, K & bracing
- Beam-Columns
- Combined bending and compression – *interaction*
- P- Δ effect
- Eccentricity