

ARCH 614. Study Guide for Quiz 4

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 9, 10, 11 & 12

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| <input type="checkbox"/> Neutral axis, section modulus, Q , extreme fiber | <input type="checkbox"/> Slenderness |
| <input type="checkbox"/> Maximum shear stress (& location along length and in cross section) | <input type="checkbox"/> Critical Buckling and Euler’s Formula |
| <input type="checkbox"/> Maximum shear stress by beam shape (proper equations) | <input type="checkbox"/> Effective length, K & bracing |
| <input type="checkbox"/> Shear flow and shear center | <input type="checkbox"/> Beam-Columns |
| <input type="checkbox"/> Connected area | <input type="checkbox"/> Combined bending and compression – <i>interaction</i> |
| <input type="checkbox"/> Nail capacity and pitch for resisting longitudinal shear | <input type="checkbox"/> P- Δ effect |
| <input type="checkbox"/> Statically Determinate vs. Indeterminate | <input type="checkbox"/> Eccentricity |
| <input type="checkbox"/> Restrained | <input type="checkbox"/> Relative joint stiffness for determining effective length (ψ) |
| <input type="checkbox"/> Continuous | <input type="checkbox"/> Lateral buckling (and bracing) |
| <input type="checkbox"/> Inflection point | <input type="checkbox"/> Lateral <i>torsional</i> buckling |
| <input type="checkbox"/> Moment <i>redistribution</i> for statically indeterminate beams | <input type="checkbox"/> Allowable Stress Design |
| <input type="checkbox"/> Theorem of Three Moments | <input type="checkbox"/> Load and Resistance Factor Design |
| <input type="checkbox"/> Continuous beams with pins | <input type="checkbox"/> Working loads |
| <input type="checkbox"/> Use of Beam Diagrams and Formulas | <input type="checkbox"/> Factored loads |
| <input type="checkbox"/> Pinned arches and frames | <input type="checkbox"/> Resistance Factors |
| <input type="checkbox"/> Funicular | <input type="checkbox"/> “Design” values vs. “Capacity” |
| <input type="checkbox"/> Rigid vs. non-rigid pinned frames | <input type="checkbox"/> Factor of Safety |
| <input type="checkbox"/> Rigid frame behavior | <input type="checkbox"/> Density of materials and relation to weight |
| <input type="checkbox"/> Free Body Diagram rule for force at a pin of a frame | <input type="checkbox"/> Load types (and directions) (<i>like D, L, S...</i>) |
| <input type="checkbox"/> Connection types and load/moment transfer | <input type="checkbox"/> Load combinations |
| <input type="checkbox"/> Types and purpose of bracing | <input type="checkbox"/> Minimum Design Loads & Requirements |
| <input type="checkbox"/> Stability | <input type="checkbox"/> Serviceability and limits |
| <input type="checkbox"/> Buckling | <input type="checkbox"/> Design vs. analysis |
| | <input type="checkbox"/> Actions vs. reactions |
| | <input type="checkbox"/> Load tracing & tributary width (vs. area) |