

ARCH 614. Study Guide for Quiz 7

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 21, 22, 23, 24 & 25

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| <input type="checkbox"/> Constituents to make concrete | <input type="checkbox"/> Why development length is necessary |
| <input type="checkbox"/> Behavior in compression vs. tension of concrete | <input type="checkbox"/> Use of Strength Design Curves (R_n) |
| <input type="checkbox"/> Design methodology | <input type="checkbox"/> Purpose of stirrup requirement when concrete capacity is available |
| <input type="checkbox"/> Load and Resistance Factor Design | <input type="checkbox"/> Stirrup strength |
| <input type="checkbox"/> Working loads | <input type="checkbox"/> Shrinkage |
| <input type="checkbox"/> Factored loads | <input type="checkbox"/> Cracks |
| <input type="checkbox"/> Resistance Factors | <input type="checkbox"/> Concrete cover and purpose |
| <input type="checkbox"/> “Design” values vs. “Capacity” | <input type="checkbox"/> Clear span / span length |
| <input type="checkbox"/> Density of materials and relation to weight | <input type="checkbox"/> #3 bar (meaning of the numeral) |
| <input type="checkbox"/> Load types (and directions) (<i>like D, L, S ...</i>) | <input type="checkbox"/> Why bars need space between/around them |
| <input type="checkbox"/> Load combinations | <input type="checkbox"/> Purpose of compression reinforcement |
| <input type="checkbox"/> Minimum Design Loads & Requirements | <input type="checkbox"/> T-section behavior and stresses in flange |
| <input type="checkbox"/> Serviceability and limits | <input type="checkbox"/> One-way slabs design and “unit” strip |
| <input type="checkbox"/> Creep | <input type="checkbox"/> One-way vs. two-way slabs |
| <input type="checkbox"/> “composite” | <input type="checkbox"/> One-way vs. two-way shear (load & strength) |
| <input type="checkbox"/> Transformed section | <input type="checkbox"/> Why torsional shear stirrups are “closed” |
| <input type="checkbox"/> Depth of the Whitney stress | <input type="checkbox"/> Continuous beam analysis with coefficients |
| <input type="checkbox"/> Moment capacity (or ultimate strength) vs. nominal moment (or strength) | <input type="checkbox"/> Effective column length for sway or non-sway frames |
| <input type="checkbox"/> Factored design moment (or shear or) | <input type="checkbox"/> Columns with ties vs. spirals (stresses, factors, etc.) |
| <input type="checkbox"/> Design stress in reinforcement | <input type="checkbox"/> Location of maximum shear for design in beams |
| <input type="checkbox"/> Design stress in concrete | <input type="checkbox"/> Torsional (shear) stress (and where maximum occurs) |
| <input type="checkbox"/> Effective depth vs. depth of a beam | <input type="checkbox"/> Design vs. analysis |
| <input type="checkbox"/> Reinforcement grades | |
| <input type="checkbox"/> Reinforcement ratio | |
| <input type="checkbox"/> Under-reinforced vs. over-reinforced | |
| <input type="checkbox"/> Purpose of minimum reinforcement area requirement | |