

ARCH 331. Study Guide for Quiz 1

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 1, 2, 3, & 4

- Dead, live, wind, snow, seismic, impact load types
- Structural system organization schemes and materials
- Structural component names
- Number of levels in horizontal systems
- Structural system performance requirements (design criteria)
- Analysis vs. evaluation
- Grids and patterns
- Lateral resistance options
- Horizontal span to depth relationship
- One-way vs. Two-way systems
- Load type with respect to structure type
- Sin, Cos, Tan, opposite, adjacent & hypotenuse
- Perpendicular
- Result of acceleration on a mass and Weight
- Law of transmissibility
- Internal vs. external forces
- Tension and compression
- Collinear, Coplanar, Space, Concurrent & Parallel force systems
- Vectors and scalars
- Scale
- Force Polygon
- Parallelogram law
- Tip-to-tail method
- Resultant of forces
- Components of a force
- Direction and type of force in a cable with relation to geometry
- Cable vs. cable-stay
- Actions vs. reactions
- Static friction vs. kinetic friction
- Moment of a force
- Varignon’s Theorem
- Moment Couple
- Equivalent Force Systems
- Equilibrium
- Newton’s Third Law
- Free Body Diagram
- Truss configurations and assumptions for analysis
- Two-force bodies and relationship to loads
- Pin connections
- Method of Joints
- Zero-force member
- Special truss member configurations at joints and conditions
- Negative result for a variable from equilibrium equations from free body diagram
- Basis of graphical truss analysis