



Table of Content

0.0 How To...

0.1- How To Read Questions - (Published by 06/04/2022)

0.2- How to Asses Spatial and Functional Relationships -
(Published by 05/23/2024)

0.3- How to Calculate Slopes - (Published by 07/17/2024)

0.4 - How to Study for the PA Exam - (Published by 08/29/2024)

0.5 - How to Study for the PPD Exam - (Published by 09/05/2024)

0.6 - How to Study for the PDD Exam - (Published by 09/18/2024)

1.0 Structures

1.1 Loads & Forces

(Published by 03/25/2022)

Dead & Live Loads, Forces

Laws of Equilibrium

Moment

1.1A - Sample Questions (Equilibrium & Moment)

1.1B - Sample Questions Continued (Equilibrium & Moment)

1.1C - Axial Stress & Sample Questions

1.2 Shear & Moment Diagrams

(Published by 03/25/2022)

1.2A - Deformation & Hooke's Law

Stress & Strain

Elasticity & Plasticity

Stress/Strain Diagram



- 1.2B** - Modulus of Elasticity
Ductility & Brittleness
Tension & Compression
Shear & Bending
- 1.2C** - Shear & Moment Diagrams
Sample Questions (Shear & Moment Diagrams)

1.3 Structural Systems & Earthquake Design

- 1.3A - Published by 04/07/2022**
Structural Systems
Shear Wall, Moment Frame and Braced Frame
Tributary Area
- 1.3B - Published by 05/06/2022**
Earthquakes
Inertial Forces and Acceleration
Period & Resonance
Damping
Ductility, Stiffness & Strength
Building System Design Considerations
Re-Entrant Corners
Structural Irregularities
Soft & Weak Story
- 1.3C - Published by 05/17/2022**
Impacts of Earthquakes on Site Assessment
Non-Structural Design Elements Under Seismic Loads
- 1.4 - Published by 11/11/2022**
Overturning Moment
Safety Factor

2.0 Environment & Sustainability

2.1A - Published by 6/9/2022

- What is Sustainability
- Sustainable Design Objectives
- Global Warming & Green House Effect
- Renewable Energy Sources
- Geothermal Energy Systems
- Wind Turbines

2.1B - Published 6/11/2022

- The Basics
- Embodied Energy
- Heat, Sensible Heat, Latent Heat
- Heat Flow
- Thermal Resistance
- R-Value, K-Value, U-Value, C-Value
- Thermal Comfort
- Psychometric Chart

2.2A - Published by 07/31/2022

- Climate
- Microclimate
- Climate Regions of the US
- General Design Strategies for Cold & Hot Climates

2.2B-Pt.1 - Published by 09/26/2022

- Altitude /Azimuth Angles
- Latitude
- Reading Sun-Path Diagrams

2.2B-Pt.2 - Published by 10/04/2022

- Daylighting Strategies
- Thermal Properties of Windows
- Surface Films and Low-E Coating
- Window Design Strategies for Better Daylighting
- Skylight Design Strategies for Better Daylighting

2.2C - Published by 12/03/2022

Passive Heating Systems

- Direct Gain
- Indirect Gain (Trombe Wall)
- Isolated Gain (Sun Space)
- Thermosiphoning

2.3 - Published by 01/03/2023

Shading

2.4 - Published by 01/28/2023

Passive Cooling

- How Does Air Flow?
- Natural Ventilation
- Stack Effects, Bernoulli Effect, Venturi Tube)
- High-Mass Cooling (Roof Ponds)
- Night Flushing
- Evaporative Cooling

3.0 Mechanical Systems

3.1 - Published by 6/29/2023

- Active Climate Control
- How to Select the HVAC System
- Thermal Zoning
- HVAC System Components
- Boilers
- Furnaces
- Refrigeration Cycle
- Heat Pumps

3.2 - Published by 7/21/2023

Air Delivery

- Fans
- Air Handling Units
- Designing Ductwork

Water Delivery

- Pumps, Pipes

- Water Delivery Devices

Indoor Air Quality

- Dedicated Outdoor Air System (DOAS)
- Heat Recovery Ventilators (HRVs)
- Energy Recovery Ventilators (ERV)

3.3 - Published by 8/03/2023

- Small Buildings / Large Buildings
- Local Systems / Central Systems
- Small Building HVAC System Scenarios

3.4 - Published by 10/07/2023

- Large Buildings HVAC System Scenarios

3.5 - Published by 10/16/2023

- Mechanical Systems Bonus Quiz

4.0 Site Analysis

4.1 - Published by 12/01/2023

- Zoning
- FAR / Setback /Building Footprint/ Total Buildable Area Calculations
- Easement / Right of Way
- Variance
- Planned Urban Development

4.2 - Published by 12/08/2024

- Site Analysis & Design (Analyzing the Site and Placement of Buildings)

5.0 Water & Plumbing

5.1 - Published by 10/08/2024

- The Water Cycle
 - Rainwater Harvesting
 - Storm Water Management Strategies
1. Infiltration and Absorption-Based Strategies
 - Permeable Pavements or Ground Covers.
 - Rain Gardens (Bioretention Basins)
 - Bioswales
 - Vegetated Swales
 - Green Roofs
 - Infiltration Trenches & Infiltration Basins
 - Filter Strip
 - Sand Filters
 2. Retention and Detention-Based Strategies
 - Retention Basins (Ponds)
 - Detention Basins (Ponds)
 - Constructed Wetlands

5.2-Pt.1 - Published by 11/12/2024

- Water Supply
 - Public Water Supply
 - Private Water Supply and Water Wells (Dug, Drilled, Driven...Wells Compared)
- Water Distribution
 - Upfeed & Downfeed Water Distribution
- Pipes & Controls
 - Plastic Pipe Types
 - Galvanized Steel Pipes
 - Valve Types

5.2-Pt.2 - Published by 1/21/2025

- Plumbing Fixtures
 - Toilet Types
 - Toilet Bowl and Flush Types
 - Compost Toilets
- Hot Water
 - Water Heater Types
 - Solar Water Heating