BLD518: Advanced Concrete Design (2 Units)

Department of Building Technology

Covenant University
1. **BLD518**

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Detailed Treatment of Yield line theory

- Yield Line theory, Basic Johnansen Theorems Equilibrium and Energy Methods; Isotropic and Orthotropic slabs Affine and Ultra Affine Method; Strip Method of Design

- Design and Detailing of Roof Slabs (Pitched and Folded Plate); Shell (Barrel Vault, Dome), Hyperbolic paraboloid (Normal, inverted).

Design and Detailing of Compiled Stairs (Cantilever, Jack knife, open spiral, spins beam with open risers, precast flights to in-situ landings), columns including treatment of Junction details).

Design and Detailing of Tall buildings (Design and Analysis considerations; Planar lateral load-resisting elements rigid frames, shear and lift walls, coupled shear walls, shear walls connected to columns, wall frames; interaction between bents; three-dimensional structures classification and computer modeling, non-planar shear walls, framed tube structures.

C.R.P. Laminates and Sandwich Panels

Design of Frameworks Portal frames; water tower support, H and A frames

For precast wall units, Box frames for elevated corridors.

Introduction to Bridge Design.

Term projects To cover the major divisions of the syllabus & encourage the use of Computer Aided Design (CAD).