Lesson 3. Basic Structural Elements

Text Chapter 1

A. HANGERS, SUSPENSION CABLES

Loading type: Axial - Tension only

B. COLUMNS

Loading type: Axial - Compression

a) "Uplift" may introduce tension
b) Columns supporting moment & compression
   "Beam - Columns"

C. BEAMS

Loading type: Shear and moment

a) Axial tension & compression also possible

D. TRUSSES

Loading type: Loads applied at joints

Members in compression or tension
E: Arches
Loading Type: Primarily Compression,
some bending as well
(shape of arch integral to proper function)
 Covered in later course CEE 520

F: Cables (General)
Loading Type: Tension
 Covered in CEE 520

G: Rigid Frames:
Loading Type: Shear, Moment, and Axial

H: Plates & Slabs
Loading Type: Shear and Moment
Loads applied perpendicular to surface
Includes floor/roof deck
Generally not covered in CEE 320

I: Shells
Loading Type: Loads carried primarily in-plane
(shape of shell integral to proper function)
Not covered in CEE 320.