Steel Design

1. Design philosophies
   (a) Allowable stress design (ASD)
   (b) Load and resistance factor design (LRFD)

2. Material properties and characteristics
   (a) Structural steel
   (b) Structural bolts
   (c) Welding material

3. Tension member design

4. Compression member design
   (a) Effective length
   (b) Slenderness limitations

5. Beam design
   (a) Laterally supported and laterally unsupported
   (b) Compactness and local buckling
   (c) Plate girders
   (d) Composite beams

6. Beam-column design

7. Connection design
   (a) Bolted
   (b) Welded