Chapter 1: Introduction - Summary
Rajan's Book

Types of Structural Systems

Trusses
Frames; Trusses Frames
Cables – cable stayed bridges, suspension bridges
Arches
Plates
Shells
Braces/unbraced systems
Slabs and grids

Structural Analysis

Member sizes, properties are given; loads are estimated and structural analysis is performed. There is a unique solution for the analysis problems, at least for linear systems.

Classical analysis techniques
Numerical analysis techniques

Structural Design

Layout of the structure is not known – needs to be determined
Member sizes, shapes, properties – need to be determined
Loads need to be estimated
Performance requirements need to be specified
Design code requirements need to be met

Solution to a design problem is not unique; there are infinite solutions.
The design process is iterative; i.e., several trial designs need to be evaluated.