

Course Overview

In this course we examine structural types, structural behavior, material behavior, and construction constraints that underlie our design of buildings, emphasizing the need for a designer to envision a complete 3-D structure. We mostly build “orthogonal structure” constructed in horizontal and vertical planes, requiring high-strength modern materials such as steel or reinforced concrete. Roughly 80% of this course will address orthogonal structure, and the remainder will address “geometric structure” where the 3-dimensional shape prescribes the function. (Prominent examples of geometric structure include membranes, cable nets, and shells, including the masonry dome that I consider to be an important example; geometric structure is often envisioned as “form-finding” structure.) Statics underlies all topics in structures, in reality as much as in theory, and we will base our study of structures on the physical and mathematical principles that emerge from statics; you will see them all again on your NCARB exam.

