**Architecture 544: Integrative Design of Buildings** (Bldg Sys & Design Integration)  
Prof. Michael K. Kim  •  Room 212 TBH  •  244-8012

**Description:** An advanced course on *Integrative Design of Buildings* to understand the principles of buildings as a means of accomplishing the project goals and design objectives, and to facilitate development of the creativity necessary for designing buildings of great value through integration of the building systems into a functionally synergistic and organizationally coherent whole that can best accomplish the project goals. Specifically, the course aims at 1) understanding of the functionality and organizational variations of building systems, their inter-system relationships and their design/construction implications, 2) development of comprehensive integrative design ability for maximum value creation, and 3) development of intellectual acumen for rigorous design reasoning.

**Objective:** To increase intellectual rigor and professional competency for designing buildings of high quality through comprehensive integrative design approach.

**Strategy:** Design knowledge is contextual. Without comprehensive understanding of the context as an integral part of the knowledge, the applicability of any knowledge to a particular design situation cannot be properly assessed. Acquisition of such knowledge requires *Experiential Learning*, i.e. inductive leaning primarily through repeated experience of complex situations in their entirety, which gradually gives rise to holistic understanding. To facilitate successful acquisition of such knowledge in a limited time, the pedagogic strategy in this course is three-fold: Lectures; CASE (Comprehensive & Accentuated Simulated Experience) studies; and Field Trips. The lectures are heavily reasoning oriented. CASE studies follow, analyzing the specifics of the design of selected world-class buildings, exploring plausible reasoning behind such design decisions under the particular context, and finally, exploring alternative design possibilities under the similar decision environment. Field trips to real buildings complete the cycle, further reinforcing the experiential learning.

**Contents:** See attached *Course Schedule*

**Class Meetings:**
- Lecture: TR 9:30 – 10:20, Room 17 TBH
- Discussion: TR 10:30 – 11:50, Room 17 TBH

**Credit Units:** 4 Graduate Hours

**Grading Bases:**
- CASE Study Consultation & Presentation: 30%
- CASE Study Documentation: 30%
- Examinations: 40%
- Class Activity: ±5% max
- Within-Group Adjustment: ±5% max

**Term Project:** A comprehensive case study on integrative design of buildings investigating:
1) Specific functional and organizational variations of various building systems of the chosen building, their synergetic relationships, and their construction and architectural implications,
2) Plausible architect’s design reasoning under the particular decision environment that might have led to the specific design, and
3) Alternative design possibilities under the similar decision environment in search of greater value creation.

The study must be based on the investigator’s original interpretation of the construction documents and, if applicable, site visits and consultation with the architects and engineers of the building. No published second-hand information, if any, is permitted unless the published claims are substantiated or refuted through rigorous reasoning of the students’ own. Even the statements by the authoritative parties directly involved in the project must be further substantiated through rigorous reasoning. A complete set of construction documents will be provided for the study.