Abstract:
Daylighting design is the catalyst to applied research in architecture and allied disciplines. It is "an access point for a larger energy-conscious design market transformation" that can leverage carbon neutrality by design. Rather than relying on component technologies, daylighting is shaped and delivered by the architecture itself. This seminar will explore a number of issues that surround the discussion of the appropriate application of daylighting technology in commercial and institutional building types. It will provide an understanding of how to shape the building and design the skin for daylighting through an integrative design approach.

Objectives:
The primary objective of this course is to introduce the contemporary theory, methods and design applications of daylighting and electrical lighting integration as key elements in sustainable architectural design. This course will develop an awareness of:
- The impact and design limits that the architectural system of daylight enclosure have on lighting and energy performance, and on the attainment of sustained environmental quality.
- The contemporary tools, analytic methods and digital media used in the simulation, evaluation and prediction of luminous and thermal performance.

Methods:
Case study and analysis methods (Physical modeling and computational assessment) will be introduced as an exploration into the use of light in space and provide a vehicle of design synthesis. The Graduate section will require the preparation of a research paper covering the historic use of daylight specific building types.

Required Reference:
- IES-LM83-12 Daylighting Design Metrics
- Millet, M; Light Revealing Architecture; Van Nostrand Reinhold, Inc.; 1996.

Recommended, Referenced Text and Reading:
- Lam, William M.C.; Perception and Lighting as Form Givers for Architecture, 1968.
- Fitch, J. M.; American Building - The Environmental Forces that Shape It; 2nd Ed 1999.

Prerequisite: Arch 4302/5302 Environmental Principles or consent of instructor