COURSE DESCRIPTION AND OBJECTIVES

A systems perspective requires us as architects to look at the long-term impacts of our design decisions. This course will supplement sustainable design scorecard systems such as LEED, Energy-Star, BREEAM, or Green Globe, which are incomplete, and do not provide design guidance or feedback. Student will learn basic life-cycle analysis to compare the costs of early design decisions and how they impact future building performance and operating costs. This approach uses financial tools to support green design strategies. We will also include a discussion of LEAN construction principles to learn how to reduce first costs, avoid waste, add value and plan for long-term environmental sustainability.

Students will develop familiarity with basic life-cycle functions, including Net Present Value (NPV), Simple Payback (SPB), Discounted Payback (DPB), Internal Rate of Return (IRR), and Benefit: Cost (B/C) in order to (1) quantify savings, (2) determine the time required to recover initial costs, and (3) select the lowest-cost alternative. Life-Cycle Cost Analysis (LCCA) is now required on most federal and many publicly-funded projects to assess design alternatives. The course will use examples, case studies, readings and outside speakers from government and industry to explain public energy policies and incentives, energy performance contracting, and actual LCCA projects, to show that lowest life-cycle cost (LCC) can be a powerful argument in support of long term sustainability and green building designs.

INSTRUCTOR: Lindrea L. Sealy AIA MBA LEEDAP is a recently-retired architect with a 39-yr. career in complex private and public projects in the U.S., Europe and Middle East. She developed green initiatives in A/E practices in Houston and London before green was mainstream. Most recently a Senior Project Manager and Senior Staff Architect for the University of Texas System, she managed major projects, edited the quarterly Energy Utilization Index Report for 15 campuses, and developed Best Practices for UT System’s $8 billion building program. She currently resides in Austin, Texas, and has a daughter in Portland.
Required Tools and Reading:

Students will be required to have a hand-held calculator or MS Excel software for weekly assignments and exams. There are several required readings available on reserve in the Library, and additional materials in the course packet to be distributed in the first week of class. The following books and articles are suggested readings:

- *Whitestone Facility Maintenance and Repair Cost Reference*.
- *Whitestone Facility Operations Cost Reference*.